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CRYSTAL UNITS IN METAL HOLDER, BASED ON TYPE T807,

FREQUENCY RANGE 4.0 - 140MHZ

ESCC Detail Specification No. 3501/011

(Follow-up specification to ESCC Detail Specification Nos. 3501/001 and 3501/008)

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DOCUMENTATION CHANGE NOTICE

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DCR No.	CHANGE DESCRIPTION
582	Specification upissued to incorporate technical changes per DCRs.
1,50 150 150 150	



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1.1 SCOPE

This specification details the values, physical and electrical characteristics, test and inspection data for Crystal Units in Metal Holder, based on Type T807, Frequency Range 4.0 - 140MHz.

It shall be read in conjunction with ESCC Generic Specification No. 3501, the requirements for which are supplemented herein.

This is a follow-up specification to ESCC Detail Specification Nos. 3501/001 and 3501/008. ESCC 3501/001 and 3501/008 should also be consulted by:-

- (a) Users seeking information concerning the availability of variants additional to those listed in this specification.
- (b) Manufacturers before requesting the introduction of a new variant in accordance with the requirements of Para. 1.2 of this specification.

1.2 <u>COMPONENT TYPE VARIANTS</u>

A list of the type variants of the crystal units specified herein, which are also covered by this specification, is given in "Table 1(a) - Type Variant Summary".

For each type variant, the full electrical and physical characteristics are given in individual Tables 1(a) - "Type Variant Detailed Information" at the end of this specification.

The contents of the individual Tables 1(a) shall be as shown in Table 1(c) and the characteristics therein listed shall relate to the design parameters of the individual crystal units, optimised for the intended application.

The specific characteristics shall be negotiated between the Manufacturer and the Orderer. The Manufacturer shall then apply to the ESCC Secretariat for a type variant number for each individual crystal unit concerned, by sending a finalised Table 1(a) which shall also be copied to the ESCC Executive.

1.3 MAXIMUM RATINGS

The maximum ratings, which shall not be exceeded at any time during use or storage, applicable to the crystal units specified herein, are as scheduled in Table 1(b).

1.4 PHYSICAL DIMENSIONS

The physical dimensions of the crystal units specified herein are shown in Figure 2.

1.5 <u>FUNCTIONAL DIAGRAM</u>

The functional diagram showing lead identification of the crystal units specified herein is shown in Figure 3.



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TABLE 1(a) - TYPE VARIANT SUMMARY

N.B. For additional information concerning Type Variants, see Para. 1.1.

Variant	Resonance Frequency (MHz)	Load Capacitance (C _L pF)	Reference Temp. (T _o °C)	Operating Temp. Range (T _{op} °C)	Intend. Applica- tion	Figure
01	79.916667	- 20	+ 65	-20 to +80	ОСХО	2(a)
02	16.777216	15	+ 25	-40 to +90	ХО	2(a)
03	98.5	90	+ 65	-20 to +60	XO	2(a)
04	127.33	· ×	+ 65	-20 to +60	ХО	2(a)
05	45.576238	on.	+ 25	-20 to +70	TCXO	2(a)
06	60.409942	300	+ 25	-20 to +70	TCXO	2(a)
07	60.424365	- 00	+ 25	-20 to +70	TCXO	2(a)
- 08	75.778688	90	+25	-20 to +70	тсхо	2(a)
09	75.79918	00	+ 25	-20 to +70	тсхо	2(a)
10	70.392385		+25	-20 to +70	тсхо	2(a)
11	16.0	30	+ 25	-50 to +100	XO	2(a)
12	45.576921	œ	+25	-25 to +70	тсхо	2(a)
13	47.477737	\$	+ 25	-25 to +70	тсхо	2(a)
14	47.4 84 316	\$	+25	-25 to +70	тсхо	2(a)
15	53.844019	×	+ 60	-20 to +80	тсхо	2(a)
16	60.101563	φ:	+60	-20 to +80	тсхо	2(a)
17	54.665417	op op	+60	-20 to +80	тсхо	2(a)
18	96.115384	∞	+75	-20 to +80	осхо	2(a)
19	99. 933 333	∞	+ 75	-20 to +80	осхо	2(a)
20	47.377026	∞	+ 25	-20 to +80	тсхо	2(a)
21	47.383605	90	+25	-20 to +80	тсхо	2(a)
22	39.781202	20	+25	-20 to +80	тсхо	2(a)
23	96.250	×	+75	-20 to +80	осхо	2(a)
24	96.428571	∞	+ 75	-20 to +80	осхо	2(a)
25	97.380752	œ	+ 75	-20 to +80	осхо	2(a)
26	97.826087	∞	+75	-20 to +80	осхо	2(a)
27	97.916667		+75	-20 to +80	осхо	2(a)
28	98.750	∞	+75	-20 to +80	осхо	2(a)
29	65.016606	90	+25	-20 to +80	тсхо	2(a)
30	100.833333	Ø0	+75	-20 to +80	осхо	2(a)
31	36.966600	Ø	+25	-20 to +80	тсхо	2(a)
32	101.136363	∞	+75	-20 to +80	осхо	2(a)
33	20.0		+25	-20 to +80	хо	2(a)
34	36.916667		+25	-20 to +80	тсхо	2(a)
35	16.0	30	+25	-40 to +90	хо	2(a)
36	56.288799	6	+70	-20 to +80	тсхо	2(a)

NOTES: See Page 8.



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TABLE 1(a) - TYPE VARIANT SUMMARY (CONTINUED)

Variant	Resonance Frequency (MHz)	Load Capacitance (C _L pF)	Reference Temp. (T _o °C)	Operating Temp. Range (T _{op} °C)	Intend. Applica- tion	Figure
37	56.298413	90	+70	-20 to +80	TCXO	2(a)
38	60.0	00	+ 25	-50 to +100	XO	2(a)
39	89.066666	12	+ 25	-20 to +80	VCXO	2(b)
40	56.283991	00	+ 65	-20 to +80	осхо	2(a)
41	56.264760	œ	+ 65	-20 to +80	осхо	2(a)
42	49.760	. 20	+ 75	-20 to +80	осхо	2(a)
43	83.333333		+ 70	-20 to +80	осхо	2(a)
44	43.214457	œ	+ 65	-20 to +80	ОСХО	2(a)
45	49.982342		+ 65	-20 to +80	осхо	2(a)
46	56.240721	00	+65	-20 to +80	осхо	2(a)
47	58.913814	- × ×	+ 65	-20 to +80	осхо	2(a)
48	47.023950	Ø.	+65	-20 to +80	осхо	2(a)
49	49.974902	œ	+ 65	-20 to +80	осхо	2(a)
50	49.998712	&	+ 65	-20 to +80	осхо	2(a)
51	60.388308	w	+ 25	-20 to +80	осхо	2(a)
52	64.850955	α,	+ 25	-20 to +80	осхо	2(a)
53	74.632	×	+ 25	-20 to +80	осхо	2(a)
54	65.703227	ω,	+25	-20 to +80	осхо	2(a)
55	65.005242	*	+25	-20 to +80	осхо	2(a)
56	21.0	30	+25	-40 to +85	тсхо	2(a)
57	82.407407	oc .	+ 70	-20 to +80	осхо	2(a)
58	83.333333	×	+70	-20 to +80	осхо	2(a)
59	82.407407	00	+70	-20 to +80	осхо	2(a)
60	44.806526	×	+ 25	-20 to +80	осхо	2(a)
61	59.717665	×	+65	-20 to +80	осхо	2(a)
62	100.0	00	+ 75	-20 to +80	осхо	2(a)
63	103.500	Ø0	+75	-20 to +80	осхо	2(a)
64	99.023438	œ	+ 75	-20 to +80	осхо	2(a)
65	76.0	∞	+ 75	-20 to +80	осхо	2(a)
66	55.057968	∞	+ 75	-20 to +80	осхо	2(a)
67	53.836808	×	+75	-20 to +80	осхо	2(a)
68	65.708909	. 90	+ 25	-20 to +80	осхо	2(a)
69	101.500	∞	+ 75	-20 to +80	осхо	2(a)
70	50.0	90	+75	-20 to +80	тсхо	2(a)
71	83.353825	∞	+25	-20 to +80	осхо	2(a)
72	83.360656	- ×	+25	-20 to +80	осхо	2(a)

NOTES: See Page 8.



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TABLE 1(a) - TYPE VARIANT SUMMARY (CONTINUED)

Variant	Resonance Frequency (MHz)	Load Capacitance (C _L pF)	Reference Temp. (T _o °C)	Operating Temp. Range (T _{op} °C)	Intend. Applica- tion	Figure
73	66.034769	œ	+25	-20 to +80	ocxo	2(a)
74	70.358731	φ	+ 25	-20 to +80	ocxo	2(a)
75	37.833333	သာ	+25	-20 to +80	осхо	2(a)
76	37.483333	∞	+ 25	-20 to +80	ocxo	2(a)
77	37.950	×:	+ 25	-20 to +80	OCXO	2(a)
78	32.0	30	+ 25	-55 to +105	XO	2(a)
79	74.637682	∞	+25	-20 to +80	OCXO	2(a)
80	74.654	00	+ 25	-20 to +80	осхо	2(a)
81	75.0	90	+ 75	-20 to +80	осхо	2(a)
82	45.238276	∞	+ 65	-20 to +80	OCXO	2(a)
83	54.807966	œ	+ 65	-20 to +80	ocxo	2(a)
84	60.340231	90	+ 25	-20 to +80	осхо	2(a)
85	100.084340	000	+25	-25 to +75	TCXO	2(a)
86	62.350	oc:	+75	-20 to +80	осхо	2(a)
87	67.998154	တ	+25	-20 to +80	ОСХО	2(a)
88	61.290031		+60	-20 to +80	осхо	2(a)
89	56.259952	œ	+60	-20 to +80	осхо	2(a)
90	56.283270	200	+60	-20 to +80	осхо	2(a)
91	37.753122	00	+ 25	-20 to +80	осхо	2(a)
92	37.140272	90	+ 25	-20 to +80	осхо	2(a)
93	47.373737	×	+ 25	-20 to +80	осхо	2(a)
94	80.562500		+75	-20 to +80	осхо	2(a)
95	100.646340	×	+25	-25 to +75	тсхо	2(a)
96	100.783130	œ	+25	-25 to +75	тсхо	2(a)
97	60.281611	9 23	+60	-20 to +80	осхо	2(a)
98	60.284015	× ×	+60	-20 to +80	осхо	2(a)
99	55.850279	90	+60	-20 to +80	осхо	2(a)

NOTES

1. Full electrical and physical characteristics are given in the individual Tables 1(a) at the end of this specification.



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TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristic	Symbol	Values	Unit	Remarks
1	Nominal Frequency Range	f	4.0 to 140	MHz	Note 1
2	Drive Level Range	Р	Note 1	mW	Note 1
3	Operating Temperature Range	Тор	-	°C	Note 2
4	Storage Temperature Range	T _{stg}	-65 to +125	°C	Note 3
5	Soldering Temperature	T _{sol}	+ 260	°C	Note 4

<u>NOTES</u>

1.

Fundamental and Overtone Order	Approx. Frequency Range (MHz)	Drive Level Range (mW)		
Fundamental	4 - 35	0.05 to 0.02		
3	30 - 100	0.05 to 0.25		
5	80 - 140	0.05 to 0.25		

- 2. See Table 1(a).
- 3. The duration at maximum storage temperature shall not exceed 16 hours.
- 4. Duration 10 seconds maximum at a distance of not less than 3.0mm from the device body and the same lead shall not be resoldered until 3 minutes have elapsed.



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TABLE 1(c) - FORMAT FOR INDIVIDUAL TABLES 1(a) TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION TYPE VARIANT NO.

3 . x .			Lim	nits		Rømarks	
No.	Characteristic	Symbol	Min.	Max	Unit		
1	Resonance Frequency	f, or f _L			MHz	Note 1	
2	Reference Temperature	To			°C	Note 2	
3	Overtone Order	~					
4	Load Capacitance	C _L			pF	Note 3	
5	Rated Drive Level	Po			mW	Note 4	
6	Frequency Adjustment Tolerance	#			10-6	At T _o °C Note 5	
7	Resonance Resistance	R, or RL			Ω	At T _o °C Note 6	
8	Frequency Variation with Temperature over Top	<u>\$1</u>			10 ⁻⁹	From frequency measured at T _o °C Note 7	
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R			%	From resistance measured at T _o °C Note 7	
10	Operating Temperature Range	Тор			°C		
11	Frequency variation with Drive Level	<u>∆ f</u>			10-8	$ \begin{array}{cccc} From & P_{S1} = & mW \\ to & & & \\ P_{S2} = & mW \\ Note 8 & & & \end{array} $	
12	Resistance variation with Drive Level	AR R			% .	$\begin{array}{cccc} From & P_{S1} = & mW \\ & to \\ & P_{S2} = & mW \\ & Note 8 \end{array}$	
13	Motional Inductance	L ₁			mH	Notes 9 and 10	
14	Motional Capacitance	C ₁			ſF	Note 9	
15	Static Capacitance	Co			pF	Note 9	
16	Q Factor	Q			*	Notes 9 and 11	
17	Ratio of unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R				In the frequency range: f - kHz to f + kHz	
18	Ageing	<u> </u>			10-8	Note 13	
19	Physical Dimensions	~			~	Note 14	
20	Intended Application					Note 16	

NOTES: See Pages 11 and 12.



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NOTES TO TABLE 1(c)

- 1. (a) If C_L is not specified, Symbol and measurement shall be f_r.
 - (b) If C_L is specified, Symbol and measurement shall be f_L.

2. Reference Temperature To

- (a) For a crystal unit functioning in a non-controlled temperature environment, the reference temperature is normally +25 ±2 °C.
- (b) For a crystal unit functioning in a controlled temperature environment, the reference temperature shall normally be the mid-point of the temperature range of the controlled environment.

3. Load Capacitance CL

- (a) When a crystal unit must function at its series resonance frequency, CL shall be infinite.
- (b) When a crystal must function with a load capacitance, the C_L value shall be specified. The standard values of load capacitance are as follows:
- Fundamental Frequency Operation: 20pF, 30pF, 50pF and 100pF.
- Overtone Operation: 8pF, 12pF, 15pF, 20pF and 30pF.

N.B

The tolerance on the load capacitance shall be that value which results in a frequency change not exceeding 10% of the frequency tolerance at To or 1% of the nominal load capacitance, whichever is smaller.

4. Rated Drive Level Po

The rated drive level shall be selected from the standard drive levels specified below:

- Preferred values: 2mW, 1mW, 0.5mW, 0.2mW, 0.1mW, 0.05mW, 0.02mW, 0.01mW, 0.001mW or 0.0001mW at ±20%.
- Non-preferred values: 10mW, 5mW and 4mW all at ±20%.

5. Frequency Adjustment Tolerance

- (a) When a crystal must function at its series resonance frequency, the standard value of the adjustment tolerance shall be $\pm 10 \times 10^{-6}$.
- (b) When a crystal has to function with a load capacitance, the standard value of the adjustment tolerance shall also be ±10 x 10⁻⁶. However, if the load capacitance is adjustable, it is preferable to specify that the nominal frequency be obtained with a load capacitance value between the minimum and maximum value when the crystal is functioning in its fundamental mode.

6. Resonance Resistance

(a) Generally, the maximum value only is specified.

(b) R_L may be calculated by R_L = R_r
$$\left(1 + \frac{C_0}{C_L}\right)^2$$

7. Frequency and Resistance Variation with Temperature

These values shall be specified such that they are consistent with the operating temperature range.

8. Frequency and Resistance Variation with Drive Level

These limits and the Drive Level range (PS1 to PS2) shall be specified for very special crystals only (i.e. crystals used in very high stability oscillators).



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NOTES TO TABLE 1(c) (Continued)

9. Electrical Values

The electrical values shall be specified only when required for the correct functioning of the equipment in which the crystal is used.

10. Motional Inductance L₁

Because the inductance value may be restricted by other chosen parameters, the Manufacturer shall propose the value of L₁ in accordance with the Customer's requirements.

11. 'Q' Factor

If 'R' and 'L' have been already specified, it will not be necessary to specify the minimum value of the 'Q' factor.

The maximum value of the 'Q' factor is never specified.

12. Ratio of Unwanted Response Resistance to Resonance Resistance

The standard minimum value is 2, but it is possible to obtain higher values.

The frequency range within which the minimum value of the ratio is required shall also be specified.

13. Ageing

Specify limits under appropriate column and ageing period under "Remarks".

14. Physical Dimensions

The applicable Figure Number is to be specified.

15. Not applicable Items

For all items where limits are not specified, "Not applicable" shall be entered in the Limits column.

16. Intended Application

For definitions of the selected symbol to be added, see ESCC Generic Specification No. 3501, Para. 3.



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FIGURE 1 - PARAMETER DERATING INFORMATION

Not applicable.

FIGURE 2 - PHYSICAL DIMENSIONS

FIGURE 2(a) - 3-PIN PACKAGE

FIGURE 2(b) - 4-PIN PACKAGE

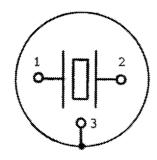
				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					2A
	Millim	netres				Millim	etres		<b>*</b>   <u> </u>
Symbol	Min.	Max.	Remarks	<b> </b>	Symbol	Min.	Max.	Remarks	<b>*</b>
ØA	, <del>*</del>	10.70	~		ØA	8.51	10.70	-	€
С	-	6.80	•		C	6.10	6.90	*	
Н	4.83	5.33	Pitch		ØD	7.75	8.50	-	
***************************************			5.08mm	U U U	E	0.25	1.00	+	,
ØK	0.41	0.48	*	-	H	4.93	5.23	+	
L	12.70	-	*	0x /	ØK	0.41	0.48	~	ØK /\$\frac{1}{2}
Р	+	0.90	Note 2	1 /v tx0	L	12.70	-	-	±/x**x\
Q	-	0.90	Note 2		Р	~	0.90	Note 2	
				Note 1	Q	~	0.90	Note 2	700
		Y Z	— <b>→</b> X				•	•	

#### **NOTES**

- 1. Lead No. 3 is grounded to case.
- 2. The tag's position or presence is optional.

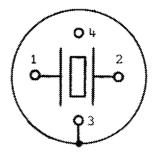
#### **FIGURE 3 - FUNCTIONAL DIAGRAM**

#### FIGURE 3(a) - 3-PIN PACKAGE



(Bottom View)

#### FIGURE 3(b) - 4-PIN PACKAGE



(Bottom View)



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#### 2. APPLICABLE DOCUMENTS

The following documents form part of this specification and shall be read in conjunction with it:-

(a) ESCC Generic Specification No. 3501 for Quartz Crystal Units.

#### 3. TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS

For the purpose of this specification, the terms, definitions, abbreviations, symbols and units specified in ESCC Basic Specification No. 21300 shall apply. In addition, the following symbols are used:-

Resonance Frequency  $= f_r$ Load Resonance Frequency = f1 Reference Temperature  $= T_0$  $= R_r$ Resonance Resistance = AL Load Resonance Resistance  $= P_0$ Rated Drive Level  $= C_0$ Static Capacitance Load Capacitance = CL Motional Capacitance  $= C_1$ Motional Inductance = L1 = Rp Response Resistance Response Impedance  $= |Z_p|$ Insulation Resistance = Ri

#### 4. REQUIREMENTS

#### 4.1 GENERAL

The complete requirements for procurement of the crystal units specified herein shall be as stated in this specification and ESCC Generic Specification No. 3501 for Quartz Crystal Units. Deviations from the Generic Specification applicable to this specification only, are detailed in Para. 4.2.

Deviations from the applicable Generic Specification and this Detail Specification, formally agreed with specific Manufacturers on the basis that the alternative requirements are equivalent to the ESCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

## 4.2 <u>DEVIATIONS FROM GENERIC SPECIFICATION</u>

#### 4.2.1 <u>Deviations from Special In-process Controls</u>

None.

#### 4.2.2 Deviations from Final Production Tests (Chart II)

None.

#### 4.2.3 <u>Deviations from Burn-in Tests (Chart III)</u>

None.

#### 4.2.4 <u>Deviations from Qualification Tests (Chart IV)</u>

None.

#### 4.2.5 Deviations from Lot Acceptance Tests (Chart V)

None.



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#### 4.3 <u>MECHANICAL REQUIREMENTS</u>

#### 4.3.1 Dimension Check

The dimensions of the crystal units specified herein shall be checked; they shall conform to those shown in Figure 2.

#### 4.3.2 Weight

The maximum weight of the crystal units specified herein shall be 2.0 grammes.

#### 4.3.3 Robustness of Terminations

The requirements for robustness of termination testing are specified in Section 9 of ESCC Generic Specification No. 3501.

#### 4.4 MATERIALS AND FINISHES

The materials and finishes shall be as specified herein. Where a definite material is not specified, a material which will enable the crystal units specified herein to meet the performance requirements of this specification shall be used. Acceptance or approval of any constituent material does not guarantee acceptance of the finished product.

#### 4.4.1 <u>Case</u>

#### 4.4.1.1 Cap

Copper, nickel plated or nickel and gold plated.

#### 4.4.1.2 Base

Kovar, nickel plated and gold plated.

#### 4.4.2 Lead Material and Finish

The lead material shall be Type 'D' with Type '2' finish in accordance with the requirements of ESCC Basic Specification No. 23500.

#### 4.5 MARKING

#### 4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESCC Basic Specification No. 21700 and the following paragraphs. When the component is too small to accommodate all of the marking specified, as much as space permits shall be marked and the marking information, in full, shall accompany the component in its primary package.

The information to be marked and the order of precedence, shall be as follows:-

- (a) The ESCC Component Number.
- (b) Characteristics.
- (c) Traceability Information.

#### 4.5.2 The ESCC Component Number

Each component shall bear the ESCC Component Number, which shall be constituted and marked as follows:
350101101B

Detail Specification Number	
Type Variant, (see Table 1(a))	
Testing Level (B or C, as app	olicable) ————————————————————————————————————



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#### 4.5.3 Characteristics

The resonance frequency of the crystal units shall be clearly specified in MHz. Where necessary, it shall be specified to 6 decimal places.

#### 4.5.4 <u>Traceability Information</u>

Each component shall be marked in respect of traceability information in accordance with the requirements of ESCC Basic Specification No. 21700.

#### 4.5.5 Manufacturer's Name, Symbol or Code

The Manufacturer's marking shall be in accordance with the requirements of ESCC Basic Specification No. 21700.

#### 4.6 ELECTRICAL MEASUREMENTS

#### 4.6.1 <u>Electrical Measurements at Reference Temperature</u>

The parameters to be measured in respect of electrical characteristics are scheduled in Table 2. The measurements shall be performed at the temperatures specified in the individual Tables 1(a), Item 2.

#### 4.6.2 <u>Electrical Measurements at High and Low Temperatures</u>

The parameters to be measured at high and low temperatures are scheduled in Table 3. These measurements shall only be performed if values are specified in Table 1(a) Items 8 and/or 9.

#### 4.6.3 <u>Circuits for Electrical Measurements</u> (Figure 4)

Not applicable.

#### 4.7 BURN-IN TESTS

#### 4.7.1 Parameter Drift Values

The parameter drift values applicable to burn-in are specified in Table 4 of this specification. Unless otherwise stated, measurements shall be performed at  $T_{amb} = T_o \pm 2$  °C. The parameter drift values (Delta) applicable to the scheduled parameters shall not be exceeded. In addition to these drift value requirements for a given parameter, the appropriate limit value specified in Table 2 shall not be exceeded.

#### 4.7.2 Conditions for Burn-in

The requirements for burn-in are specified in Section 7 of ESCC Generic Specification No. 3501. The conditions for burn-in shall be as specified in Table 5 of this specification.

#### 4.7.3 Electrical Circuits for Burn-in (Figure 5)

Not applicable.

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## TABLE 2 - ELECTRICAL MEASUREMENTS AT REFERENCE TEMPERATURE

No.	Characteristics	Symbol	ESCC 3501 Test Method	Limits	Unit
1	Resonance frequency at reference temperature and rated drive level - with C _O - with C _L	f _r (T _o , P _o ) f _L (T _o , P _o )	Para. 9.2.1.1	Table 1(a), Item 1 ± Item 6	MHz
2	Resonance resistance at reference temperature and rated drive level - with C _O - with C _L	R _r (T _o , P _o ) R _L (T _o , P _o )	Para. 9.2.1.1	Table 1(a), Item 7	Ω
3	Frequency variation with Drive Level	$\frac{\Delta f}{f}$ (T _o , $\Delta P$ )	Para. 9.2.1.1	Table 1(a), Item 11	10-6
4	Resistance variation with Drive Level	$\frac{\Delta R}{R} (T_0, \Delta P)$	Para. 9.2.1.1	Table 1(a), Item 12	%
5	Motional Inductance	L ₁	Para. 9.2.1.3	Table 1(a), Item 13	mH
6	Static Capacitance	C _o	Para. 9.2.1.4	Table 1(a), Item 15	pF
7	Unwanted response	R _P /R or IZ _P I/R	Para. 9.2.1.5	Table 1(a), Item 17	~
8	Insulation Resistance	Ri	Para. 9.2.1.6	500 Min.	МΩ



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#### TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	Characteristics	Symbol	ESCC 3501 Test Method	Limits	Unit
9	Frequency variation with Temperature over Top	Δ <u>f</u> (ΔΤ, Ρ _ο )	Para. 9.2.1.2	Table 1(a) Item 8	10 ⁻⁶
10	Resistance variation with Temperature over Top	<u>Δ R</u> (ΔΤ, P _o )	Para. 9.2.1.2	Table 1(a) Item 9	%

## FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS

Not applicable.

#### **TABLE 4 - PARAMETER DRIFT VALUES**

No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions	Change Limits (Δ)	Unit
1	Resonance frequency drift	$\frac{\Delta f}{f}$	As per Table 2	As per Table 2	± 2	10-6
2	Resonance resistance drift	<u>Δ R</u> R	As per Table 2	As per Table 2	± 10 or (1) ± 1	% Ω

NOTES 1. Whichever is the highest value.

#### TABLE 5 - CONDITIONS FOR BURN-IN AND LIFE TEST

No.	Characteristics	Symbol	Condition	Unit
1	Ambient Temperature	T _{amb}	+85 ±5	°C

#### FIGURE 5 - ELECTRICAL CIRCUIT FOR BURN-IN AND LIFE TEST

Not applicable.



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## 4.8 <u>ENVIRONMENTAL AND ENDURANCE TESTS (CHARTS IV AND V OF ESCC GENERIC SPECIFICATION NO. 3501)</u>

#### 4.8.1 <u>Measurements and Inspections on Completion of Environmental Tests</u>

The parameters to be measured and inspections to be performed on completion of environmental tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at  $T_{amb} = T_0 \pm 2$  °C.

#### 4.8.2 <u>Measurements and Inspections at Intermediate Points and on Completion of Endurance Tests</u>

The parameters to be measured and inspections to be performed at intermediate points and on completion of endurance tests are scheduled in Table 6. Unless otherwise stated, the measurements shall be performed at  $T_{amb} = T_0 \pm 2$  °C.

#### 4.8.3 Conditions for Operating Life Test (Part of Endurance Testing)

The requirements for the operating life test are specified in Section 9 of ESCC Generic Specification No. 3501. The test shall be performed as a high temperature storage test and the temperature to be applied shall be the maximum operating temperature specified in the individual Tables 1(a) given in this specification.



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## TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING

·····	······							
	ESCC GENERIC SP	EC. NO. 3501	MEASUREMENTS A	ND INSPECTIONS		LIN	IITS	
NO.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION CONDITIO		SYMBOL	Min.	Max.	UNIT
01	Electrical Measurements at Reference Temperature	Para. 9.2.4	Electrical Measurements	Table 2		Tabl	3 1(a)	
02	Shock	Para. 9.3	Initial Measurements Resonance Frequency Resonance Resistance Final Measurements Resonance Frequency Drift Resonance Resistance Drift	Table 2 Item 1 Table 2 Item 2 Table 2 Item 1 Table 2 Item 2	1 8 <u>Д1</u> 1 <u>ДВ</u> В	2	2 Item 1 2 Item 2 +1.0 +10 +1.0	10-6 %
03	Vibration	Para. 9.4	Initial Measurements Resonance Frequency Resonance Resistance Final Measurements Resonance Frequency Drift Resonance Resistance Drift	Table 2 Item 1 Table 2 Item 2 Table 2 Item 1 Table 2 Item 2	f R Δf f ΔB R	1	2 Item 1 2 Item 2 +1.0 +10 +1.0	10-6 %
04	Seal Test	Para. 9.5	Fine Leak Gross Leak	Para. 9.5.1 Para. 9.5.2			. 9.5.1 . 9.5.2	
05	Permanence of Marking	Para. 9.8	Final Measurements Visual Examination	No corrosion or obliteration of marking	*	*	*	
06	External Visual Inspection	Para. 9.9	Final Measurements Visual Inspection	ESCC No. 20500	•		*	~
07	Solderability	Para. 9.13	*	*	-	·	×	-

## **NOTES**

- 1. The tests in this table refer to either Chart IV or V, and shall be used as applicable.
- 2. Whichever is the highest value.



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# TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING (Cont.)

NO.   ENVIRONMENTAL AND ENDERANCE TESTS (1)   AND CONDITIONS   IDENTIFICATION   CONDITIONS   SYMBOL   Min.   Max.   Min.   Max.   Min.   Max.   Min.   Min.   Max.   Min.   Mi		ESCC GENERIC SP	EC. NO. 3501	MEASUREMENTS AN	ND INSPECTIONS		LIN	IITS	
Day Heat   Para   9.14.1   Initial Measurements   Resonance Frequency   Resonance Frequency   Table 2 Item 2   R   Table 2 Item 1   1   Table 2 Item 2   R   Table 2 Item 1   Table 2 Item 2   Table 2 Item 2   Table 2 Item 3   Table 2 Item 4   Table 2 Item 4   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 1   Table 2 Item 2   Table 2 Item 3   Table 2 Item 4   Table 2 Item 4   Table 2 Item 1   Table 2 Item 1   Table 2 Item 2   Table 2 Item 3   Table 2 Item 4   Table 2 Item 5   Table 2 Item 6   Table 2 Item 1   Table 2 Item 7   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 2   Table 2 Item 2   Table 2 Item 3   Table 2 Item 4   Table 2 Item 1   Table 2 Item 6   Table 2 Item 6   Table 2 Item 7   Table 2 Item 1   Table 2 Item 2   Table 3 Item 6   Table 3 Item 6   Table 3 Item 6   Table 3 Item 7   Table 3 Item 6   Table 3 Item 7   Table 3 Item 7   Table 3 Item 7   Table 3 Item 8   Table 3 Item 8   Table 3 Item 8   Table 3 Item 1   Table 3 Item 6   Table 3 Item 7   Table 3 Item 8   Table 3 Item 8   Table 3 Item 1   Table 3 Item 8   Table 3 Item 1   Table 3 Item 8   Table 3 Item 1   Table 3 Item 8	NO.		}	IDENTIFICATION	CONDITIONS	SYMBOL	Min.	Мах.	UNIT
Resonance Frequency   Resonance Resistance   Final Measurements   Resonance Resistance   Final Measurements   Resonance Resistance   Table 2 Item 2   Resonance   Resonance Resistance   Table 2 Item 2   Table 2 Item 2   Table 2 Item 3   Table 2 Item 4   Table 2 Item 4   Table 2 Item 4   Table 2 Item 5   Table 2 Item 6   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 2   Table 2 Item 3   Table 2 Item 2   Table 2 Item 2   Table 2 Item 3   Table 2 Item 2   Table 2 Item 3   Table 2 Item 2   Table 2 Item 3   Table			<b>*</b>						
Resonance Resistance   Final Measurements   Resonance Frequency   Drift   Resonance Frequency   Drift   Resonance Frequency   Drift   Resonance Resistance   Drift   Table 2 Item 1   Δ	08	Dry Heat	Para. 9.14.1						
Para									
Resonance Frequency Drift   Para. 9.14.3   Para. 9.14.4   Para. 9.16   P			ye en		Table 2 Item 2	R	Table :	2 Item 2	
Drift   Resonance Resistance   Table 2 Item 2   ΔR   -1.0   +1.0   Ω   Ω   Ω   Ω   Ω   Ω   Ω   Ω   Ω			Hart St.		***************************************				
Para					Table 2 Item 1		-2.0	+ 2.0	10%
Drift   Para   9.14.3   Para   9.14.1   Para   9.15   Para   9.15   Para   9.16   Para					Table 2 Bon 2	8	10	3.10	62.
Para					1 aoio 2 itein 2			T 10	70
10   Para. 9.14.3   Initial Measurements   Resonance Frequency   Resonance Frequency   Table 2 Item 1   Table 2 Item 2   Final Measurements   Resonance Resistance   Final Measurements   Resonance Resistance   Drift   Resonance Resistance   Drift   Resonance Frequency   Remaining Cycles   Para. 9.14.4   Initial Measurements   Resonance Frequency   Resonance Resistance   Final Measurements   Resonance Frequency   Resonance Resistance   Resonance Frequency   Drift   Resonance Frequency   Drift   Resonance Frequency   Drift   Resonance Resistance   Table 2 Item 1   Δ								+1.0	Ω
Resonance Resistance   Final Measurements   Resonance Frequency Drift   Table 2 Item 2   R   Final Measurements   Resonance Frequency Drift   Table 2 Item 2   Δf   Cor (2)   ΔR   Cor	09	Cold	Para. 9.14.3	Initial Measurements	10 mg		1.0		
10   Damp Heat (Acclerated)   Para. 9.14.4   Para. 9.16.1   Para. 9.15   Para. 9.15   Para. 9.15   Para. 9.15   Para. 9.16.1   Para. 9.16.1   Para. 9.16.2   Para. 9.16.		- market and a control		Resonance Frequency	Table 2 Item 1	1 †	Para.	9.14.1.3	
10   Damp Heat (Acclerated)   Para. 9.14.4   Para. 9.14.3.2   Para. 9.15   Para. 9.15   Para. 9.15   Para. 9.15   Para. 9.15   Para. 9.16.1   Para. 9.16.1   Para. 9.16.1   Para. 9.16.2   Para					Table 2 Item 2	R	Final Mea	surements	
Drift   Resonance Resistance   Drift   Resonance Resistance   Drift   Table 2 Item 2   ΔR   R   Or (2)   -1.0   +1.0   Ω									
Paral 9.14.4   Paral 9.14.2   Paral 9.14.3   Paral 9.14.4   Par					Table 2 Item 1		-2.0	+2.0	10-6
Damp Heat (Acclerated)   Para. 9.14.4     Initial Measurements   Resonance Frequency   Resonance Resistance   Final Measurements   Resonance Resistance   Table 2 Item 1   Table 2 Item 2   Resonance Frequency   Table 2 Item 1   Table 2 Item 1   Table 2 Item 1   Table 2 Item 2   Table 2 Item 3   Table 2 Item 4   Table 2 Item 5   Table 2 Item 6   Resonance Resistance   Table 2 Item 7   Table 2 Item 8   Resonance Resistance   Table 2 Item 8   Resonance Resistance   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 2   Table 2 Item 1   Table 2 Item 2   Table 2 Item 3   Table 2 Item 3   Table 2 Item		14 m		4		3			
Damp Heat (Acclerated)   Remaining Cycles   Para. 9.14.4     Para. 9.14.4   Resonance Frequency Resonance Resistance Final Measurements Resonance Resistance Drift   Table 2 Item 1   Table 2 Item 2   ΔR   Resonance Resistance Drift   Table 2 Item 3   Resonance Resistance   Table 2 Item 4   Table 2 Item 5   Resonance Frequency Print Resonance Frequency Drift   Resonance Frequency Drift   Table 2 Item 1   Table 2 Item 1   Table 2 Item 2   Resonance Frequency Print Resonance Frequency Drift   Table 2 Item 1   Table 2 Item 2   Resonance Frequency Print Resonance Frequency Drift   Table 2 Item 1   Table 2 Item 2   Resonance Frequency Print Resonance Frequency Drift   Table 2 Item 1   Table 2 Item 2   Resonance Frequency Print Pri				2	Table 2 Item 2	<u>AH</u>		+10	%
10   Damp Heat (Acclerated)   Remaining Cycles   Para. 9.14.4     Initial Measurements   Resonance Frequency   Resonance Frequency   Drift   Resonance Resistance   Drift   Table 2 Item 1   Table 2 Item 2   R   Final Measurements   Table 2 Item 2   R   Para. 9.14.3.2   Para. 9.16   Para. 9.15   Para. 9.15   Para. 9.16   Para. 9.16   Para. 9.16   Para. 9.16.2   Par				Dill			3		
Remaining Cycles	10	Damp Heat (Acclerated)	Para. 9.14.4	Initial Measurements		l an	7.0	71.0	38
Resonance Resistance   Final Measurements   Fina					§	f	Para.	9.14.3.2	
Final Measurements   Resonance Frequency   Drift   Table 2 Item 1   Δ   1   -2.0   +2.0   10-6		*							
Drift   Resonance Resistance   Table 2 Item 2   ΔR   -10   +10   %   or (2)   ΔR   -1.0   +1.0   Ω   MΩ		***							
Drift   Insulation Resistance   Table 2 Item 8   R   Or (2)			•		Table 2 Item 1	4	- 2.0	+ 2.0	10-6
Drift				Resonance Resistance	Table 2 Item 2	ΔR	- 10	+10	%
Insulation Resistance   Table 2 Item 8   Ri   500   - MΩ				Drift			or (2)		
Para. 9.15   Initial Measurements   Table 2 Item 1   1   Para. 9.14.4.2   Final Measurements   Table 2 Item 2   After minimum   Recovery of 2 hours   Table 2 Item 1   1   Para. 9.14.4.2   Final Measurements   Table 2 Item 2   After minimum   Recovery of 2 hours   Table 2 Item 1   1   Para. 9.14.4.2   Final Measurements   Table 2 Item 2   After minimum   Recovery of 2 hours   Table 2 Item 1   1   Para. 9.14.4.2   Final Measurements   Table 2 Item 2   After minimum   Table 2 Item 1   Table 2 Item 2   After minimum   Table 2 Item 3   Table 2 Item 4   Table 2 Item 5   Table 2 Item 6   Table 2 Item 7   Table 2 Item 7   Table 2 Item 8   Table 2 Item 9   Table 2 Item 9   Table 2 Item 9   Table 2 Item 1							2	+1.0	<b>E</b>
Temperature  Resonance Frequency Resonance Resistance Final Measurements  Resonance Frequency Resonance Resistance Final Measurements  Resonance Frequency Drift Resonance Resistance Drift  Resonance Frequency Drift Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Frequency After minimum  Recovery of 2 hours  Table 2 Item 1  1  Table 2 Item 2  AR  -10  +10  % or (2)  AR  Or (2)  -1.0  1  Resonance Frequency Final Measurements  Recovery of 2 hours  Table 2 Item 1  Table 2 Item 2  Resonance Final Measurements  Recovery of 2 hours  Table 2 Item 3  Resonance Final Measurements  Final Measurements  Recovery of 2 hours  Table 2 Item 1  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Resonance Final Measurements  Final Measurements  Recovery of 2 hours  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 2  Resonance Resistance  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 2  Resonance Resistance  Table 2 It				Insulation Resistance	Table 2 Item 8	Ri	500	•	MΩ
Temperature  Resonance Frequency Resonance Resistance Final Measurements  Resonance Frequency Resonance Resistance Final Measurements  Resonance Frequency Drift Resonance Resistance Drift  Resonance Frequency Drift Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Frequency After minimum  Recovery of 2 hours  Table 2 Item 1  1  Table 2 Item 2  AR  -10  +10  % or (2)  AR  Or (2)  -1.0  1  Resonance Frequency Final Measurements  Recovery of 2 hours  Table 2 Item 1  Table 2 Item 2  Resonance Final Measurements  Recovery of 2 hours  Table 2 Item 3  Resonance Final Measurements  Final Measurements  Recovery of 2 hours  Table 2 Item 1  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Resonance Final Measurements  Final Measurements  Recovery of 2 hours  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 2  Resonance Resistance  Table 2 Item 3  Resonance Resistance  Table 2 Item 1  Table 2 Item 2  Resonance Resistance  Table 2 It	11	Rapid Change of	Para. 9.15	Initial Measurements					
Resonance Resistance Final Measurements  Resonance Frequency Drift Resonance Resistance Drift  Resonance Frequency Drift Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Resistance Drift  Resonance Frequency Drift  Res					<b>{</b>	f	Para.	9.14.4.2	
Resonance Frequency   Para. 9.16   Para. 9.16   Para. 9.16   Para. 9.16   Para. 9.16.1   Para. 9.16.2   Para				Resonance Resistance	Table 2 Item 2		5		
Resonance Frequency   Table 2 Item 1   Δ   -2.0   +2.0   10-6     Drift   Resonance Resistance   Table 2 Item 2   Δ   -10   +10   %     Drift   Resonance Resistance   Table 2 Item 2   Δ   R   -10   +10   %     A									
Drift   Resonance Resistance   Table 2 Item 2   ΔR   -10   +10   %						¥			
Resonance Resistance   Table 2 Item 2   ΔR   R   Or (2)   ΔR   -1.0   +1.0   %					Table 2 Item 1	<u>A.I</u>	- 2.0	+ 2.0	10-6
Drift   R   Or (2)   ΔR   -1.0   +1.0   Ω				3	*******	f			
12   Robustness of Terminations   Para. 9.16   Tensile Strength   Gen. 3501   Para. 9.16.1   Visual Examination   Bending   Gen. 3501   Para. 9.16.2     Para. 9.16.2				3	Table 2 Item 2		1	+10	1 %
12 Robustness of Para. 9.16 Tensile Strength Gen. 3501 Para. 9.16.1 Visual Examination Bending Gen. 3501 Para. 9.16.2		11.1		Will.		\$		410	6
Terminations  Para. 9.16.1  Visual Examination  Bending  Gen. 3501  Para. 9.16.2	-	<b>.</b>	<b>+</b>			<b>+</b>	ļ	, ,,v	<b></b>
Visual Examination No visible damage Bending Gen. 3501 Para. 9.16.2	12	3	Para. 9.16	Tensile Strength	3				
Bending Gen. 3501 Para. 9.16.2		rerminations		Crains monarcases					
Para. 9.16.2									
				-committee					
, , , , , , , , , , , , , , , , , , ,				Visual Examination	No visible damage				

#### **NOTES**

- 1. The tests in this table refer to either Chart IV or V, and shall be used as applicable.
- 2. Whichever is the highest value.



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## TABLE 6 - MEASUREMENTS AND INSPECTIONS ON COMPLETION OF ENVIRONMENTAL TESTS AND AT INTERMEDIATE POINTS AND ON COMPLETION OF ENDURANCE TESTING (Cont.)

	ESCC GENERIC SP	EC. NO. 3501	MEASUREMENTS AND IN		LIM	ITS		
NO.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL	Min.	Max.	UNIT
13	Life Test	Para. 9.17	Initial Measurements					
		The state of the state of	Resonance Frequency	Table 2 Item 1	1	Table 2	Item 1	
			Resonance Resistance	Table 2 Item 2	R	Table 2	Item 2	
			Intermediate Measurements	At 500 hours			1	
			Resonance Frequency Drift	Table 2 Item 1	<u>4</u>	~ 2.0	+2.0	10-6
			Resonance Resistance Drift	Table 2 Item 2	AB R	10 or (2)	+ 10	%
		1.4	<b>*</b> ***********************************		ΔR	~ 1.0	+1.0	Ω
			Intermediate Measurements (Chart IV) and Final	At 1000 hours		1.0		**
			Measurements (Chart V)	Same separation and the	la de la compania de			
			Resonance Frequency Drift	Table 2 Item 1	4	-2.5	+2.5	10-6
			Resonance Resitance Drift	Table 2 Item 2	Δ <u>R</u> R	-10 or (2)	+10	%
					ΔR	~1.0	+1.0	Ω
			Final Measurements (Chart IV)	At 2000 hours				
			Resonance Frequency Drift	Table 2 Item 1	<u>4</u> 1	-3.0	+3.0	10-6
			Resonance Resistance Drift	Table 2 Item 2	AB R	-10 or (2)	+10	%
					ΔR	-1.0	+1.0	Ω

#### NOTES

- The tests in this table refer to either Chart IV or V, and shall be used as applicable.
   Whichever is the highest value.

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lirr Min.	iits Max.	Unit	Remarks
1	Resonance Frequency	fr	79.916667		MHz	
2	Reference Temperature	To	+60	+ 70	°C	
3	Overtone Order	*	3		•	
4	Load Capacitance	CL	0	>	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	Rr	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
9	Resistance Variation	∆R R	- 20	+20	%	From resistance
	with Temperature over Top	l m	-2.0	r +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	Not app	olicable	10-6	
12	Resistance Variation with Drive Level	<u>Δ R</u> R	Not app	olicable	%	
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	olicable	ſF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance	Rp/R				In the frequency range: f _r -10%
	or Response Impedance to Resonance Resistance	or IZpI/R	4:1	: <b>*</b>		to f _r +10%
18	Ageing	Δ <u>f</u>	-3.0	+3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figure	e 2(a)		
20	Intended Application		OC.	X0		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _L	16.77	7216	MHz	
2	Reference Temperature	То	+2	5	°C	
3	Overtone Order		Funda	mental	***************************************	
4	Load Capacitance	C _L	1	5	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ1</u>	- 15	+ 15	10-6	At To °C
7	Resonance Resistance	RL	*	20	Ω	Over T _{op}
8	Frequency Variation with Temperature over Top	Δ <u>f</u>	-50	+50	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	∆R R	Not applicable		%	
10	Operating Temperature Range	Тор	-40	+ 90	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u> f	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	+	-	mH	
14	Motional Capacitance	C ₁	17	23	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	50 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	2:1	~		In the frequency range: f _L -500kHz to f _L +500kHz
18	Ageing	∆ f	*	2.0	10-6	After Burn-in over 10 years
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		,	<b>(</b> 0		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim <b>M</b> in.	iits Max.	Unit	Remarks
1	Resonance Frequency	fr	98	.5	MHz	
2	Reference Temperature	То	+2	5	°C	
3	Overtone Order	~	Ę	5		
4	Load Capacitance	$C_L$	٥	٥	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u>	10	+10	10-6	At To °C
7	Resonance Resistance	R _r	~	40	Ω	Over Top
8	Frequency Variation with Temperature over Top	Δ <u>f</u>	-6.0	+6.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	Not ap	olicable	%	
10	Operating Temperature Range	Тор	- 20	+60	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	∆R R	*	50	%	From $P_{S1} = 10 \mu W$ to $P_{S2} = 100 \mu W$
13	Motional Inductance	L ₁	*	~	mH	
14	Motional Capacitance	C ₁	0.68	0.84	ſF	
15	Static Capacitance	Co		+	pF	
16	Q Factor	Q	80 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpi/R	2:1	*		In the frequency range: f _r -500kHz to f _r +500kHz
18	Ageing	Δ <u>1</u>	-	1.0	10-6	After Burn-in per year
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		Х	(0		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

······································	·····			·····	·•
Characteristics	Combai	Lim	nits	l karis	Damada
Graracteristics	Symbol	Min.	Max.	UIII	Remarks
Resonance Frequency	fr	127	127.33		
Reference Temperature	То	+ 23	+ 27	°C	
Overtone Order	-	6	5		
Load Capacitance	CL	0	0	pF	
Rated Drive Level	Po	0.	.1	mW	
Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To °C
Resonance Resistance	R,		50	Ω	At To °C
Frequency Variation with Temperature over Top	<u>∆</u> 1	5.0	+ 5.0	10-6	From frequency measured at T _o °C
Resistance Variation with Temperature over Top	<u>∆R</u> R	Not ap	olicable	%	
Operating Temperature Range	Тор	-20	+60	°C	
Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
Motional Inductance	L ₁	-	-	mΗ	
Motional Capacitance	C ₁	0.45	0.55	fF	
Static Capacitance	Co	+	4.0	pF	
Q Factor	Q	Not ap	plicable	*	
Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	2:1	~		In the frequency range: f _r -500kHz to f _r +500kHz
Ageing	$\frac{\Delta f}{f}$	-2.5	+2.5	10-6	After 17 years of operation
Physical Dimensions		Figur	e 2(a)		
Intended Application		>	(0		
	Reference Temperature Overtone Order Load Capacitance Rated Drive Level Frequency Adjustment Tolerance Resonance Resistance Frequency Variation with Temperature over Top Resistance Variation with Temperature over Top Operating Temperature Range Frequency Variation with Drive Level Resistance Variation with Drive Level Additional Inductance  Motional Capacitance Static Capacitance Q Factor Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance Ageing Physical Dimensions	Resonance Frequency $f_r$ Reference Temperature $T_o$ Overtone Order  Load Capacitance $C_L$ Rated Drive Level $P_o$ Frequency Adjustment Tolerance $f_r$ Resonance Resistance $f_r$ Frequency Variation with Temperature over $f_{op}$ Operating Temperature $f_r$ Resistance Variation with Drive Level $f_r$ Resistance Variation $f_r$ Resistance Variation $f_r$ Operating Temperature $f_r$ Resistance Variation $f_r$ Resistance Variation $f_r$ With Drive Level $f_r$ Resistance Variation $f_r$ Resistance Variation $f_r$ With Drive Level $f_r$ Resistance Variation $f_r$ Response Inductance $f_r$ Response Resistance to Response Resistance to Response Resistance or IZpI/R Response Resistance Ageing $f_r$ Physical Dimensions	Resonance Frequency $f_r$ 127 Reference Temperature $T_0$ +23  Overtone Order - 5  Load Capacitance $T_0$ - 6  Rated Drive Level $T_0$ - 0  Frequency Adjustment Tolerance $T_0$ - 10  Resonance Resistance $T_0$ - 10  Frequency Variation with Temperature over $T_{0p}$ - 20  Resistance Variation with Temperature over $T_{0p}$ - 20  Operating Temperature Range $T_0$ - 20  Frequency Variation with Drive Level $T_0$ - 20  Resistance Variation with Drive Level $T_0$ - 20  Resistance Variation $T_$	Resonance Frequency $f_r$ 127.33 $+27$ Reference Temperature $T_0$ $+23$ $+27$ Overtone Order $ 5$ Load Capacitance $C_L$ $\infty$ Rated Drive Level $P_0$ $0.1$ Frequency Adjustment Tolerance $R_r$ $-10$ $+10$ Resonance Resistance $R_r$ $-50$ Frequency Variation with Temperature over $T_{op}$ Operating Temperature $R_r$	Resonance Frequency $f_r$ 127.33 MIHz  Reference Temperature $f_r$ 127.33 MIHz  Covertone Order $f_r$ 127.33 MIHz  Reference Temperature $f_r$ 128.3 $f_r$ 129.3 $f_r$ 200.1 mW  Frequency Level $f_r$ 10 $f_r$ 10.6  Resonance Resistance $f_r$ 10 $f_r$ 10.6  Resonance Resistance $f_r$ 10 $f_r$ 10.6  Resonance Resistance $f_r$ 10.0 $f_r$ 10.6  Resistance Variation $f_r$ 10.6  Resistance Variation $f_r$ 10.7  Resistance Variation $f_r$ 10.6  Resistance Variation $f_r$ 10.7  Resistance Variation $f_r$ 10.6  Resistance Variation

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lìm	iits	Unit	Remarks
	w., wo	<b>O</b> j	Min.	Max.	<b>0.</b>	, , , , , , , , , , , , , , , , , , , ,
1	Resonance Frequency	fr	43.57	43.576238		
2	Reference Temperature	То	+20	+30	°C	
3	Overtone Order	*	5	}		
4	Load Capacitance	CL	0	٥	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	-10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	+	25	ο. Ω	At To 'C'C
8	Frequency Variation with Temperature over Top	Δ <u>†</u>	0 9.0 9.0	+9.0 +9.0 0	10-6	From T-20 to +10 °C From T+10 to +50 °C From T+50 to +70 °C
9	Resistance Variation with Temperature over Top	∆R R	- 10 - 1.0	+ 10 r + 1.0	% Ω	From resistance measured at T _o °C If R≤10Ω
10	Operating Temperature Range	Тор	- 20	+70	°C	
11	Frequency Variation with Drive Level	<u>∆</u> 1 †	- 0.5	+0.5	10-6	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 20	+20	%	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	3:1	*		In the frequency range: f _r -10% to f _r +10%
18	Ageing	<u>∆</u> !	-3.0	+ 3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		тс	X0		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.         Characteristics         Symbol Min.         Limits Max.         Unit         Remainstrain           1         Resonance Frequency         f _r 60.409942         MHz           2         Reference Temperature         T _o +20         +30         °C           3         Overtone Order         -         3	arks
2 Reference Temperature T _o +20 +30 °C 3 Overtone Order - 3	
3 Overtone Order - 3	
4 Load Capacitance C _L ∞ pF	······································
5 Rated Drive Level Po 0.1 mW	
6 Frequency Adjustment Δf -10 +10 10-6 At T _o °C Tolerance	
7 Resonance Resistance R _r - 25 Ω At T _o °C	
8 Frequency Variation Δf 0 +9.0 10-6 From T - 20 with Temperature over Top 0 -9.0 0 From T + 10 From T + 50	to +50 °C
9 Resistance Variation $\Delta R = -10 + 10 \%$ From resistal with Temperature over $T_{op} = -1.0 + 1.0 \%$ If $R \le 10\Omega$	
10 Operating Temperature T _{op} -20 +70 °C Range	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
12 Resistance Variation ΔR Not applicable % with Drive Level R	
13 Motional Inductance L ₁ 2.0 - mH	•••••
14 Motional Capacitance C ₁ Not applicable fF	······
15 Static Capacitance C _o - 5.0 pF	***************************************
16 Q Factor Q 70 000 -	***************************************
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	10%
18 Ageing Δ f - 3.0 + 3.0 10-6 12 years after hours Burn-i	
19 Physical Dimensions Figure 2(a)	
20 Intended Application TCX0	

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Charantariation	C L I	Lin	nits	1 1 (4	<u> </u>
NO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	60.42	60.424365		
2	Reference Temperature	To	+ 20	+30	°C	
3	Overtone Order	*	(	3		
4	Load Capacitance	CL	٥	∞		
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	Rr	-	25	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u>	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T - 20 to + 10 °C From T + 10 to + 50 °C From T + 50 to + 70 °C
9	Resistance Variation with Temperature over Top	AR R	-10 -1.0	+10 r +1.0	%	From resistance measured at T ₀ °C If R≤10Ω
10	Operating Temperature Range	T _{op}	- 20	+ 70	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	<u>Δ R</u> R	Not ap	olicable	%	
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ar	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000		~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	-3.0	+3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)		***************************************	
20	Intended Application		ТС	TCX0		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	iits Max.	Unit	Remarks
1	Resonance Frequency	fr	75.778688		MHz	
2	Reference Temperature	То	+20	+30	°C	
3	Overtone Order	*	3			
4	Load Capacitance	CL	٥	×		
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>4</u> 1	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	-	25	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>4</u> 1	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T - 20 to +10 °C From T + 10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	∆R R	- 10 - 1.0	+ 10 r + 1.0	. %	From resistance measured at T _o °C If R≤10Ω
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency Variation with Drive Level	Δ f f	- 0.5	+0.5	10-6	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
12	Resistance Variation with Drive Level	∆R R	-20	+20	%	From $P_{S1} = 0.01$ mW to $P_{S2} = 0.1$ mW
13	Motional Inductance	L ₁	3.0	-	mH	
14	Motional Capacitance	C ₁	Not a	oplicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	70 000		~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or iZpi/R	3.5:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+ 3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		TCX0			

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol Limits		Unit	Remarks	
IVO.	Citaracteristics	Symbol	Min.	Max.	0.111	nemarks
1	Resonance Frequency	fr	75.79918		MHz	
2	Reference Temperature	T ₀	+ 20	+ 30	°C	
3	Overtone Order	*	3 .			
4	Load Capacitance	CL	<u> </u>		ρF	
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	R _r	*	25	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	0 9.0 9.0	+9.0 +9.0 0	10-6	From T = 20 to +10 °C From T + 10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	ΔR R	-10 -1.0	+10 or +1.0	%	From resistance measured at T _o °C If R≤10Ω
10	Operating Temperature Range	Тор	-20	+70	°C	
11	Frequency Variation with Drive Level	<u>Δ f</u>	- 0.5	+0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	ΔR R	-20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₁	3.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	+	5.0	ρF	
16	Q Factor	Q	70 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	3.5:1	~		In the frequency range: f _r -10% to f _r +10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+ 3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		тсхо			

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Charantariation	C		its	Unit	Damada.
No.	Characteristics	Symbol	Min.	Max.	Oint	Remarks
1	Resonance Frequency	fr	70.392385		MHz	
2	Reference Temperature	То	+20	+30	°C	
3	Overtone Order	~	3	3		
4	Load Capacitance	CL	α	<u> </u>		
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>Δ 1</u>	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	R _r	~	25	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u>	0 9.0 9.0	+9.0 +9.0 0	10-6	From T-20 to +10 °C From T+10 to +50 °C From T+50 to +70 °C
9	Resistance Variation with Temperature over Top	∆R R	- 10	+10	%	From resistance measured at To °C
10	Operating Temperature Range	Тор	- 20	+70	°C	
11	Frequency Variation with Drive Level	∆t f	- 0.5	+ 0.5	10-6	From $P_{S1} = 0.01$ mW to $P_{S2} = 0.1$ mW
12	Resistance Variation with Drive Level	AR R	-20	+20	%	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
13	Motional Inductance	Li	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	oplicable	ſF	
15	Static Capacitance	Co	*	5.0	ρF	
16	Q Factor	Q	70 000		. *	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or iZpi/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>A</u> 1	-3.0	+3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		TCX0			

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol Limits		Unit	Remarks	
	Cital according	Oymoo.	Min.	Max.	Oint	10000000
1	Resonance Frequency	fL	16.0		MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	~	Fundamental			
4	Load Capacitance	CL	29.7	30.3	ρF	
5	Rated Drive Level	Po	0.2		mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	RL	~	15	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ1</u>	-30	+30	10-6	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	∆R R	Not applicable		%	
10	Operating Temperature Range	Тор	-50	+ 100	°C	
11	Frequency Variation with Drive Level	<u>∆_f</u> f	Not applicable		10-6	
12	Resistance Variation with Drive Level	$\frac{\Delta R}{R}$	Not ap	olicable	%	
13	Motional Inductance	L ₁	4.0	4.7	mH	
14	Motional Capacitance	C ₁	21	25	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	60 000		~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	4:1			In the frequency range: f _L -500kHz to f _L +500kHz
18	Ageing	<u>A</u> f	-30	+30	10-6	After Burn-in over 10 years
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		XO			

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		·······	·····	······		
No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _{res}	45.576921		MHz	
2	Reference Temperature	То	+20	+ 30	°C	
3	Overtone Order	~	3	}		
4	Load Capacitance	CL	∞		ρF	
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	Rr	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u>	0 9.0 9.0	+ 9.0 + 9.0 0	10-6	From T - 20 to +10 °C From T + 10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	ΔR R	-20 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 25	+70	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	ΔR R	Not ap	olicable	%	
13	Motional Inductance	L ₁	6.5	~	mH	
14	Motional Capacitance	C ₁	Not a	plicable	ſF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	90 000		-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	2:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		TCX0			
			***************************************		····	<del></del>

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

Nin	Characteristics	Limits		£ 3 m (4	Domado	
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	47.477737		MHz	
2	Reference Temperature	То	+ 20	+30	°C	
3	Overtone Order	•	3			
4	Load Capacitance	CL	٥	D.	pF	
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	$R_{r}$	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ</u> f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T - 20 to + 10 °C From T + 10 to + 50 °C From T + 50 to + 70 °C
9	Resistance Variation with Temperature over Top	AB R	-20 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+70	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	<u>∆ R</u> R	Not ap	olicable	%	
13	Motional Inductance	L ₁	6.5	*	mH	
14	Motional Capacitance	C ₁	Not a	oplicable	1F	
15	Static Capacitance	Co	~	5.0	ρF	
16	Q Factor	Q	90 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or IZpI/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		TCX0			



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f,	47.48	4316	MHz	
2	Reference Temperature	То	+20	+30	°C.	
3	Overtone Order	+		3		
4	Load Capacitance	CL	0	o .	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	0 9.0 9.0	+9.0 +9.0 0	10-6	From T - 20 to +10 °C From T + 10 to +50 °C From T + 50 to +70 °C
9	Resistance Variation with Temperature over Top	ΔR R	-20 -2.0	+20 or +2.0	% Ω	From resistance measured at T _a °C
10	Operating Temperature Range	Тор	- 25	+70	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not a	oplicable	fF.	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	90 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R or iZpi/R	2:1	<b>→</b>		In the frequency range: f _r -10% to f _r +10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	12 years after 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		T(	CX0		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		***************************************	***************************************	***************************************		······································
No.	Characterístics	Symbol Limits		ts Unit		Remarks
IVO.	Orial actoristics	Syllion	Min.	Max.	Offic	nemarks
1	Resonance Frequency	fr	53.84	4019	MHz	
2	Reference Temperature	Τ _o	+ 55	+ 65	°C	
3	Overtone Order	*	3	3		
4	Load Capacitance	CL	0	o ·	pF	
5	Rated Drive Level	Po	0.	.2	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	-10	+ 10	10-6	At T _o °C
7	Resonance Resistance	Rr	~	40	Ω	At To *C
8	Frequency Variation with Temperature over Top	Δ <u>t</u>	- 10	+ 10	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆ B</u> R	20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	∆f f	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.20 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 20	+20	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.20 \text{mW}$
13	Motional Inductance	L ₁	3.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	+	5.0	pF	
16	Q Factor	Q	70 000	-	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆ 1</u>	-3.0	+3.0	10-6	Over 12 years after 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		тсхо			

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lin	nits		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f,	60.101563		MHz	
2	Reference Temperature	To	+ 55	+ 65	°C	
3	Overtone Order	*		3		
4	Load Capacitance	CL	, 0	O	pF	
5	Rated Drive Level	Po	0	.2	mW	
6	Frequency Adjustment Tolerance	<u>14</u>	- 10	+10	10-6	At To *C
7	Resonance Resistance	R _r	÷	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Top	ΔR	-2.0	+2.0	Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	Δf f	-0.5	+ 0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.20mW
12	Resistance Variation with Drive Level	AR R	-20	+20	%	From P _{S1} = 0.05mW to P _{S2} = 0.20mW
13	Motional Inductance	L ₁	3.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	70 000	*	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	-3.0	+3.0	10-6	Over 12 years after 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		тс	XO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	nits	Unit	Remarks
140.	Orlandeteristics	Symbol	Min.	Max.	Oint	nemarks
1	Resonance Frequency	f _r	54.665417		MHz	
2	Reference Temperature	To	+ 55	+ 65	*C	
3	Overtone Order			3		
4	Load Capacitance	CL	٥	C .	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At To °C
7 ,	Resonance Resistance	$\mathbf{R}_{\mathbf{r}}$	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR	-2.0	+2.0	Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+ 80	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	-0.5	+ 0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	<u>∆ R</u> R	-20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₋₁	3.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	70 000	*	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	•		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆</u>	-3.0	+3.0	10-6	Over 12 years after Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		тс	XO.		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		•				<b>*</b>
No.	Characteristics	Symbol	Limits		Unit	Remarks
, 40,	O::		Min.	Max.	~, · · · · · · · · · · · · · · · · · · ·	1101110110
1	Resonance Frequency	fr	96.11	5384	MHz	
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order	1 1 2 2 2 2 2 3 3 2 4		5		
4	Load Capacitance	CL	c	¢	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	•	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Top	∆R R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	∆ R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	C ₀	~	5.0	pF	
16	Q Factor	Q	70 000	-	+	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u> </u>	- 6.0	+6.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-ir
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		ocxo			



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	nits	Unit	Remarks
****	On au action ionica	Oyiiiooi	Min.	Max.	Om	
1	Resonance Frequency	f,	99.93	3333	MHz	
2	Reference Temperature	Τo	+ 70	+ 80	°C	
3	Overtone Order	: : ::::::::::::::::::::::::::::::::::		Š		
4	Load Capacitance	CL	Ü	٥	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	R,	-	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u> †	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10-6	
12	Resistance Variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co		5.0	pF	
16	Q Factor	Q	70 000	-	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	-		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆f f	-6.0	+6.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OCXO			



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	vits	Unit	Remarks	
140.	On an actoristics	Symbol	Min.	Max.	Oim	, , , , , , , , , , , , , , , , , , , ,	
1	Resonance Frequency	· f _r	47.377026		MHz		
2	Reference Temperature	Τo	+ 20	+30	°C		
3	Overtone Order	12 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m 1 m	3	3			
4	Load Capacitance	CL	C	0	pF		
5	Rated Drive Level	Po	0	.2	mW		
6	Frequency Adjustment Tolerance	Δ <u>f</u>	<b>– 10</b>	+ 10	10-6	At T _o °C	
7	Resonance Resistance	R _r	*	40	Ω	At To *C	
8	Frequency Variation with Temperature over Top	Δ <u>f</u> f	- 10	+10	10-6	From frequency measured at T _o °C	
9	Resistance Variation	$\frac{\Delta R}{R}$	- 20	+20	%	From resistance	
	with Temperature over Top	l H	-2.0	r   +2.0	Ω	measured at To °C	
10	Operating Temperature Range	Тор	-20	+80	°C		
11	Frequency Variation with Drive Level	∆ f f	-0.5	+ 0.5	10-6	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$	
12	Resistance Variation with Drive Level	AR R	- 20	+20	%	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$	
13	Motional Inductance	L ₁	2.0		mH		
14	Motional Capacitance	C ₁	Not ap	plicable	ſF		
15	Static Capacitance	Co	~	5.0	pF		
16	Q Factor	Q	70 000	*	+		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%	
18	Ageing	<u> </u>	-3.0	+3.0	10-6	Over 12 years after 500 hours Burn-in	
19	Physical Dimensions		Figu	e 2(a)			
20	Intended Application		тсхо				

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Cumbal	Lim	ıits	Unit	Remarks	
IVO.	Characteristics	Symbol	Min.	Max.	OIIII	Hemains	
1	Resonance Frequency	t fr	47.383605		MHz		
2	Reference Temperature	Τ _o	+ 20	+30	°C		
3	Overtone Order		\$	3	:		
4	Load Capacitance	CL	0	o	pF		
5	Rated Drive Level	P _a	0	.1	mW		
6	Frequency Adjustment Tolerance	<u>Δ</u> <u>f</u>	- 10	+10	10-6	At To °C	
7	Resonance Resistance	R,	*	40	Ω	At To °C	
8	Frequency Variation with Temperature over Top	- <u>∆</u> <u>f</u> - †	- 10	+ 10	10-6	From frequency measured at T _o °C	
9	Resistance Variation with Temperature over Too	Δ <u>R</u> R	-20 -2.0	+20 or   +2.0	% Ω	From resistance measured at T _o °C	
10	Operating Temperature Range	Тор	- 20	+80	°C		
11	Frequency Variation with Drive Level	Δf	-0.5	+0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW	
12	Resistance Variation with Drive Level	∆R R	- 20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW	
13	Motional Inductance	L ₁	2.0	-	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	fF		
15	Static Capacitance	Co	*	5.0	pF		
16	Q Factor	Q	70 000	-	-		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%	
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Over 12 years after 500 hours Burn-in	
19	Physical Dimensions		Figur	e 2(a)			
20	Intended Application		тс	XO			



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Marian and a start and	0	Limits		\$ Europa	Damoulo.
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	· fr	39.78	1202	MHz	
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order	***	5	3		
4	Load Capacitance	CL	9	¢ .	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ</u> <u>f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R,	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	· Δf f	- 10	+ 10	10-6	From frequency measured at T _o °C
9	Resistance Variation	<u>∆_B</u>	- 20	+ 20	%	From resistance
	with Temperature over Top	R	-2.0	"   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	Δf	- 0.5	+0.5	10-6	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	20	+20	%	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
13	Motional Inductance	L ₁	3.0	. +	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	· •	5.0	pF	
16	Q Factor	Q	70 000	-	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆f f	-3.0	+3.0	10-6	Over 12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		T(	OXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	nits	Unit	Remarks
IVO.	Onaracteristics	Symbol	Min.	Max.	UIIIL	nemarks
1	Resonance Frequency	fr	96.250		MHz	
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order			5		
4	Load Capacitance	CL	٥	ø	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To *C
7	Resonance Resistance	R _r	~	80	Ω	At To *C
8	Frequency Variation with Temperature over Top	Δ f f	Not applicable		10-6	
9	Resistance Variation	<u>A</u> ₽ R	-20 c	+20	%	From resistance
	with Temperature over Top	K	- 2.0	+ 2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	∆ f f	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	<u>AR</u> R	Not ap	plicable	%	
13	Motional Inductance	L,	6.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	•	5.0	ρF	
16	Q Factor	Q	70 000	+	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-6.0	+6.0	10-6	Storage: 5 years Operating: 15 years
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	iits		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	96.42	96.428571		
2	Reference Temperature	τ _o	+ 70	+80	°C	
3	Overtone Order			;		
4	Load Capacitance	CL	0	¢	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	#	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	- <u>Δ f</u> f	Not applicable		10-6	
9	Resistance Variation with Temperature	AR R		+20	%	From resistance measured at To °C
	over Top		-2.0	+2.0	Ω	
10	Operating Temperature Range	Top	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	*	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	- 6.0	+ 6.0	10-6	Storage: 5 years. Operating: 15 years.
19	Physical Dimensions		Figu	e 2(a)		
20	Intended Application		00	ocxo		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	nits		Damada
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	97.38	0752	MHz	
2	Reference Temperature	τ _o	+ 70	+ 80	°C	
3	Overtone Order			5		
4	Load Capacitance	CL	C	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u> <u>f</u>	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	R _r	~	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u> f	Not ap	plicable	10-6	
9	Resistance Variation with Temperature	∆R R		+20 x	%	From resistance measured at To °C
10	Operating Temperature Range	Тор	-2.0 -20	+2.0	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C ₀	•	5.0	pF	
16	Q Factor	Q	70 000	~	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆± f	-6.0	+6.0	10-6	Storage: 5 years. Operating: 15 years.
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		0	СХО		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	nits	Unit	Remarks
NO.	Criaraciensiics	Syrnoor	Min.	Max.	Orne	nemaks
1	Resonance Frequency	fr	97.826087		MHz	
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order	*		5		
4	Load Capacitance	C _L	ςς	x	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	*	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆f</u> f	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20 -2.0	+20 x +2.0	% Ω	From resistance measured at T ₀ °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	∆ f f	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	C _o	+	5.0	pF	
16	Q Factor	Q	70 000			
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	- 6.0	+ 6.0	10-6	Storage: 5 years Operating: 15 years
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		осхо			



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	ıits	Unit	Remarks
140.	On an action and a	Oyinoo,	Min.	Max.	Orac	Homarks
1	Resonance Frequency	fr	97.916667		MHz	
2	Reference Temperature	То	+ 70	+80	°C	
3	Overtone Order	-	5	Š		
4	Load Capacitance	CL	ü	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ1</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	R,	~	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆f f	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	<u>∆.</u> R R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆</u> f	Not applicable		10-6	
12	Resistance Variation with Drive Level	∆ B R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C _o	. *	5.0	pF	
16	Q Factor	Q	70 000	-	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	~		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-6.0	+6.0	10-6	Storage: 5 years Operating: 15 years
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		00	OXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

i		1	***************************************		1	1
No.	Characteristics	Symbol	Limits		Unit	Remarks
		-	Min.	Max.		
1	Resonance Frequency	fr	98.750		MHz	
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order	-		5		
4	Load Capacitance	CL	C	¢.	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At T₀ °C
7	Resonance Resistance	$R_{r}$		80	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u>	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Top	AR R	-20 -2.0	+20 or +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 20	+ 80	*C	
11	Frequency Variation with Drive Level	<u>Δ f</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	∆ R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	70 000	•	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-6.0	+6.0	10-6	Storage: 5 years Operating: 15 years
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		00	OXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

<b>N</b> 1	Characteristics	0	Lin	nits	1 ( ( )	Remarks
No.	Characteristics	Symbol	Min.	Max.	Unit	nemarks
1	Resonance Frequency	fy	65.016606		MHz	
2	Reference Temperature	То	+ 20	+30	°C	
3	Overtone Order	· ~	(	3		
4	Load Capacitance	CL	Ç	ro .	pF	
5	Rated Drive Level	Po	0	.2	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u> f	- 10	+10	10-6	At To °C
7	Resonance Resistance	R,	~	40	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u> </u>	- 9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation	$\frac{\Delta R}{R}$	- 20	+20	%	From resistance
	with Temperature over Top	H	-2.0	r +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
.11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	Δ <u>R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	-	•	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>∆</u>	-3.0	+3.0	10-6	Over 12 years after 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		т	CXO		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

<b>k</b> 1	Ohana akaziakia a	Cumbal	Lin	nits	f f	Davada
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	100.8	100.833333		AT Cut
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order	~	(	Š		
4	Load Capacitance	CL	0	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>1</u> 4	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	*	60	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>4</u>	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	<u>AR</u> R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	Тор	-20	+ 80	°C	
11	Frequency Variation with Drive Level	<u>∆</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	<u>AR</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	~	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	~		In the frequency range: $f_r = 10\%$ to $f_r + 10\%$
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Operating: 12 years
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		00	осхо		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	ıits	Unit	Remarks
	Ondi actoriatios	Jymoor	Min.	Max.	Oint	Homano
1	Resonance Frequency	, . fr	36.96	36.966600		AT Cut
2	Reference Temperature	То	+ 20	+30	°C	
3	Overtone Order	*	(	3		
4	Load Capacitance	CL	٥	O	pF	
5	Rated Drive Level	Po	0	.1	mW	
8	Frequency Adjustment Tolerance	<u>∆</u> <u>f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	+	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u> f	0 10 10	+ 10 + 10 0	10-6	From T = 20 to + 10°C From T + 10 to + 50°C From T + 50 to + 80°C
9	Resistance Variation with Temperature over Top	Δ <u>R</u> R	-20 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	∆ f f	- 0.5	+0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	AR R	-20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₁	3.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF.	
15	Static Capacitance	Co	~	7.0	pF	
16	Q Factor	Q	70 000	~	+	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r -10% to f _r +10%
18	Ageing	Δ <u>f</u>	-5.0	+5.0	10-6	Operating: 12 years
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		тсхо			



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

***************************************						1
No.	Characteristics	Symbol Limits		Unit	Remarks	
		7,,,,,,,,,	Min.	Max.		
1	Resonance Frequency	f _r	101.13	36363	MHz	AT Cut
2	Reference Temperature	To	+ 70	+ 80	°C	
3	Overtone Order	~		ŝ		
4	Load Capacitance	CL	Ç	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	Rr	~	80	Ω	At To °C
8	Frequency Variation with Temperature over T _{op}	<u>Δ f</u> f	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	<u>AR</u> R	- 20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>Δ1</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 <b>0</b> 00	+	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Storage: 5 years Operating: 15 years
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		00	OXO		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		·····	E VALUATA	<u></u>			
h.i.	Ohnunataviatiaa	C.,	Lin	iíts	f tunia	Remarks	
No.	Characteristics	Symbol	Min.	Max.	Unit	Hemoras	
1	Resonance Frequency	fr	20	20.0			
2	Reference Temperature	То	+ 20	+30	°C		
3	Overtone Order	~	Funda	mental			
4	Load Capacitance	CL	٥	o	pF		
5	Rated Drive Level	Po	0.	2	mW		
6	Frequency Adjustment Tolerance	<u>Δ t</u>	- 10	+ 10	10-6	At To °C	
7	Resonance Resistance	Rr	*	40	Ω	At To °C	
8	Frequency Variation with Temperature over Top	Δf	- 10	+10	10-6	From frequency measured at T _o °C	
9	Resistance Variation	Δ <u>B</u>	- 20	+20	%	From resistance	
	with Temperature over Top	R	-2.0	r   +2.0	Ω	measured at To °C	
10	Operating Temperature Range	Тор	- 20	+ 80	°C		
11	Frequency Variation with Drive Level	∆ f f	-0.5	+ 0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW	
12	Resistance Variation with Drive Level	AR R	-20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW	
13	Motional Inductance	L ₁	3.0	~	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	ſF		
15	Static Capacitance	C _o	-	5.0	pF		
16	Q Factor	Q	70 000	~	-		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	3:1			In the frequency range: f _r = 10% to f _r + 10%	
18	Ageing	$\frac{\Delta f}{f}$	-10	+ 10	10-6	Over 12 years after 240 hours Burn-in	
19	Physical Dimensions		Figure 2(a)				
20	Intended Application		>	O			

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			T AVLINIA	<u></u>		
No.	Ohannindation	Limits		Unit	Remarks	
NO.	Characteristics	Symbol	Min.	Max.	UIIIL	rteiliaiks
1	Resonance Frequency	fr	36.91	6667	MHz	AT Cut
2	Reference Temperature	Τ _a	+ 20	+30	°C	
3	Overtone Order	~	(	3		
4	Load Capacitance	CL	C	<b>o</b>	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	, R _r	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u>	0 10 10	+ 10 + 10 0	10~6	From T - 20 to +10°C From T + 10 to +50°C From T + 50 to +80°C
9	Resistance Variation with Temperature over Top	ΔR R	-20 -2.0	+20 or   +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	- 0.5	+0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	ΔR R	- 20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₁	3.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	C _o	-	7.0	ρF	
16	Q Factor	Q	70 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	-5.0	+5.0	10-6	Operating: 12 years
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		тсхо		<b>*</b>	

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin		Unit	Remarks
		-	Min.	Max.		
1	Resonance Frequency	f _L	16	.0	MHz	
2	Reference Temperature	То	+ 23	+27	°C	
3	Overtone Order	*	Funda	mental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0	.2	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	RL	~	10	Ω	At T₀ °C
8	Frequency Variation with Temperature over T _{op}	<u>∆ f</u> f	- 15	+ 15	10-6	From frequency measured at To °C
9	Resistance Variation with Temperature over Top	ΔR	-2.0	+2.0	Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Top	- 40	+90	°C	
11	Frequency Variation with Drive Level	<u>Δ f</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	50 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _L - 200kHz to f _L + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	- 10	+10	10-6	Over 10 years after Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		>	O		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

				······································			
No.	Characteristics	Symbol	Lin	ıits	Unit	Remarks	
IVO.	Orial actoristics	- Symbon	Min.	Max.	Oint	remarks	
1	Resonance Frequency	f _r	56.28	56.288799		AT Cut	
2	Reference Temperature	То	+ 65	+ 75	°C		
3	Overtone Order	~	, ,	3			
4	Load Capacitance	G _L	Ç	ø	pF		
5	Rated Drive Level	Po	0	.1	mW		
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At T _o °C	
7	Resonance Resistance	R _r	#	40	Ω	At To °C	
8	Frequency Variation with Temperature over Top	Δf f	Not ap	plicable	10-8		
9	Resistance Variation	ΔR R	- 20	+20	%	From resistance	
	with Temperature over T _{op}	H	-2.0	r   +2.0	Ω	measured at To °C	
10	Operating Temperature Range	Тор	- 20	+ 80	°C		
11	Frequency Variation with Drive Level	<u>∆t</u> f	-0.5	+0.5	10-6	From $P_{S1} = 0.01$ mW to $P_{S2} = 0.1$ mW	
12	Resistance Variation with Drive Level	ΔR R	- 20	+20	%	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$	
13	Motional Inductance	L ₁	3.0	-	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	ſF		
15	Static Capacitance	C ₀	~	5.0	pF		
16	Q Factor	Q	70 000	-	*		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%	
18	Ageing	Δ f	-3.0	+3.0	10-6	Operating: 12 years	
19	Physical Dimensions		Figure 2(a)				
20	Intended Application		T(	тсхо			

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characterístics	Symbol	Lin	nits	Unit	Remarks
IVO.	Oriaracionistics	Symbol	Min.	Max.	Oint	rigiliaiks
1	Resonance Frequency	f _r	56.29	56.298413		AT Cut
2	Reference Temperature	Τo	+ 65	+ 75	°C	
3	Overtone Order	*		3		
4	Load Capacitance	CL	C	ø.	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u> f	- 10	+10	10-6	At To °C
7	Resonance Resistance	Rr	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>4</u>	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Too	<u>∆R</u> R	-20 -2.0	+20 x   +2.0	% Ω	From resistance measured at T _o *C
10	Operating Temperature Range	Тор	-20	+ 80	°C	
11	Frequency Variation with Drive Level	∆ f f	- 0.5	+0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	ΔR R	- 20	+20	%	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
13	Motional Inductance	L ₁	3.0		mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	*	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>∆f</u>	-3.0	+ 3.0	10-6	Operating: 12 years
19	Physical Dimensions		Figur	re 2(a)		
20	Intended Application		T(	CXO		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

······································			** X * 10 * 10 * 10 * 10 * 10 * 10 * 10			<del>-</del>
No.	Characteristics	Symbol Limits		Unit	Remarks	
. • • •	Or an about the board	0,,,,,,,,	Min.	Max.	V	
1	Resonance Frequency	fr	6	).0	MHz	
2	Reference Temperature	То	+ 23	+27	۰C	
3	Overtone Order	~		3		
4	Load Capacitance	CL	,	xo	pF	
5	Rated Drive Level	Po		1.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R,	~	35	Ω	Over Top °C
8	Frequency Variation with Temperature over T _{op}	<u>\$</u>	-30	+30	10-6	From frequency measured at To °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	Not applicable		%	
10	Operating Temperature Range	Тор	-50	+ 100	°C	
11	Frequency Variation with Drive Level	∆f f	Not applicable		10-6	
12	Resistance Variation with Drive Level	AR R	Not ap	pplicable	%	
13	Motional Inductance	L ₁	2.5	3.2	mH	
14	Motional Capacitance	C ₁	2.2	2.8	ſF	
15	Static Capacitance	Co	~	7.0	pF	
16	Q Factor	Q	Not a	oplicable	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 500kHz to f _r + 500kHz
18	Ageing	Δ f			10-6	Over 10 years after Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application			XO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	iits	* * *	
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _L	89.06	6666	MHz	
2	Reference Temperature	T _O	+ 23	+ 27	°C	
3	Overtone Order	: <b>#</b>	3	3	44.4 E	
4	Load Capacitance	CL	1	2	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-2.0	+ 2.0	10-6	At To °C
7	Resonance Resistance	RL	~	25	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u>	- 5.0 - 10	-5.0 -10	10-6	From T = 20 to +70°C From T = 20 to +80°C
9	Resistance Variation with Temperature over Top	<u>AR</u> R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	1.7	*	fF	
15	Static Capacitance	Co	~	6.0	pF	
16	Q Factor	Q	50 000	~	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2.5:1	*		In the frequency range: f _L - 100kHz to f _L + 100kHz
18	Ageing	<u>_1^1</u>	- 6.0	+ 6.0	10-6	Over 10 years at 100µW drive level
19	Physical Dimensions		Figur	e 2(b)		
20	Intended Application		VC	vcxo		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Cumbal	Lin	nits	Unit	Remarks
NO.	Characteristics	Symbol	Min.	Max.	UIIIL	Memarks
1	Resonance Frequency	fr	56.28	3991	MHz	AT Cut
2	Reference Temperature	То	+ 60	+ 70	°C	
3	Overtone Order	-	\$	3		
4	Load Capacitance	CL	٥	e.	ρF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	2 Δ <u>f</u> 1 f	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R,	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u>	- 18	+18	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-20 -2.0	+20 or   +2.0	%	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	Δf	-0.5	+0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	AR R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L1	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	a	70 000	~	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1			In the frequency range: f _r – 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-1.0	+ 1.0	10-6	Over 15 years after 1704 hours ageing
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	OXO		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

I			Lin			
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
					<b>A 4</b> 1 5	
1	Resonance Frequency	t _r	56.26		MHz	AT Cut
2	Reference Temperature	To	+60	+ 70	°C	
3	Overtone Order	*		3		
4	Load Capacitance	CL	•	o .	ρF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u> f	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f f	- 18	+18	10-5	From frequency measured at T _o °C
9	Resistance Variation	ΔR R	- 20	+20	%	From resistance
1 2	with Temperature over T _{op}	H	-2.0	r   +2.0	Ω	measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆f</u> f	0.5	+ 0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	+	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δf f	- 1.0	+ 1.0	10-6	Over 15 years after 1704 hours ageing
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		00	OXO		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	<b>~</b>		Limits		8 5 . *s	Damodo
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	t _r t _r	49.7	760	MHz	AT Cut
2	Reference Temperature	То	+ 70	+80	°C	
3	Overtone Order	-		5		
4	Load Capacitance	r C _L	٥		рF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	<b>.</b>	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆t f	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	<u>∆</u> <u>f</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	<u>∆ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0		mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C ₀	~	5.0	pF	
16	Q Factor	Q	100 000	-		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δf	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	CXO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	iits	Unit	Remarks
190.	Orlandorensitos	Symbol	Min.	Max.	Orm	nemarks
1	Resonance Frequency	- f _r	83.33	3333	MHz	AT Cut
2	Reference Temperature	То	+ 65	+ 75	*C	
3	Overtone Order	*	5	\$		
4	Load Capacitance	CL	۵	Ö	ρF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r		50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> <u>f</u>	Not app	plicable	10-6	
9	Resistance Variation with Temperature over Too	<u>Δ R</u> R	-20 -2.0	+20 r l +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+ 80	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	-0.5	+0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	ΔR R	- 20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L-1	8.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	80 000	*	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>\( \Delta \frac{1}{t} \) \]</u>	- 1.0	+1.0	10-6	Over 15 years
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		00	CXO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Límits			
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	43.21	4457	MHz	AT Cut
2	Reference Temperature	То	+ 60	+ 70	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	٥	٥	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆f</u>	- 10	+ 10	10-6	At T _a °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	- 18	+ 18	10-6	From frequency measured at T _o °C
9	Resistance Variation	Δ <u>R</u> R	- 20	+ 20	%	From resistance
	with Temperature over Top	H	-2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆f</u>	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	*	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	Δ f f	- 3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	re 2(a)		
20	Intended Application		00	CXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			C VARIAIN	<u> </u>		
No.	Characteristics	Limits		Unit	Remarks	
INO.	Onaraciensucs	Symbol	Min.	Max.	Ont	nemarks
1	Resonance Frequency	i i f _r	49.98	2342	MHz	AT Cut
2	Reference Temperature	To	+ 60	+ 70	°C	
3	Overtone Order	1 :: <b></b>		3		
4	Load Capacitance	C _L	٥	o	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10~6	At To °C
7	Resonance Resistance	R _r	<b></b>	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	¹ <u>Δ f</u> f	18	+18	10-6	From frequency measured at T ₀ °C
9	Resistance Variation	ΔR R	- 20	+ 20	%	From resistance
	with Temperature over Top	H	-2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	-20	+ 80	°C	
11	Frequency Variation with Drive Level	Δf f	- 0.5	+ 0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	<u>Δ R</u> R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OCXO			

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	56.24		MHz	AT Cut
2	Reference Temperature	T _o	+ 60	+70	°C	7. 000
3	Overtone Order	- '0		}	<u> </u>	
4	Load Capacitance	CL			ρF	
5	Rated Drive Level	Po	0	1	mW	
6	Frequency Adjustment Tolerance	Δ <u>t</u>	10	+10	10-6	At To °C
7	Resonance Resistance	Rr	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>A</u> 1	- 18	+18	10-6	From frequency measured at To °C
9	Resistance Variation	ΔR R	- 20	+ 20	%	From resistance
	with Temperature over Top	R	-2.0	)r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	∆ f f	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	∆R R	-10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	70 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	-		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	Δf	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	OCXO		

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#### TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	nits	Unit	Remarks
.,,,,	Ondebotonous	Gyrrioor	Min.	Max.	Oin	nemarks
1	Resonance Frequency	fr	58.91	3814	MHz	AT Cut
2	Reference Temperature	То	+ 60	+ 70	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	O	Ω	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δf	- 10	+10	10-6	At To °C
7	Resonance Resistance	R,	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	- 18	+ 18	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature	<u>∆ R</u> R	- 20 c		%	From resistance measured at To °C
	over T _{op}		-2.0	+2.0	Ω	
10	Operating Temperature Range	Top	-20	+80	°C	***************************************
11	Frequency Variation with Drive Level	<u>∆</u> 1	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	Δ <u>R</u> R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	+	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	-	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _b /R or IZ _p I/R	3:1	*		In the frequency range: $f_r = 10\%$ to $f_r + 10\%$
18	Ageing	∆ f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	<b>O</b>		Limits			
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	47.02	3950	MHz	AT Cut
2	Reference Temperature	То	+60	+ 70	*C	
3	Overtone Order	~		3		
4	Load Capacitance	CL	: 0	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r		40	Ω	At To °C
8	Frequency Variation with Temperature over Top	° <u>∆f</u> f	- 18	+18	10~6	From frequency measured at T ₀ °C
9	Resistance Variation	<u>∆ R</u> R	- 20	+ 20	%	From resistance
·	with Temperature over Top	H	-2.0	r   +2.0	Ω	measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	-0.5	+ 0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	Δ <u>R</u> R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	1F	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	-		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>Δ1</u>	- 3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Characteristics Sumbal Limits		11	Remarks	
140.	Criaracieristics	Symbol	Min.	Max.	Unit	Hemarks
1	Resonance Frequency	f _r	49.97	74902	MHz	AT Cut
2	Reference Temperature	Τo	+60	+ 70	°C	
3	Overtone Order	*		3		
4	Load Capacitance	CL	C	×	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+ 10	10-6	At To °C
7	Resonance Resistance	Rr	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> <u>f</u>	- 18	+ 18	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20 -2.0	+20 r +2.0	%	From resistance measured at To °C
10	Operating Temperature	<b>~</b>			Ω	
10	Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	∆f f	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	ρF	
16	Q Factor	Q	70 000	#	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u> </u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		T	······································			
No.	Characteristics	Symbol	Limits		Unit	Remarks
		·	Min.	Max.		
1	Resonance Frequency	fr	49.99	49.998712		AT Cut
2	Reference Temperature	To	+60	+ 70	°C	
3	Overtone Order	~		3		
4	Load Capacitance	CL	٥	c	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10~6	At To °C
7	Resonance Resistance	R,	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	- 18	+ 18	10-6	From frequency measured at T _o °C
9	Resistance Variation	ΔR R	- 20	+20	%	From resistance
	with Temperature over Too	R	-2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	∆f f	-0.5	+0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	AR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	ρF	
16	Q Factor	Q	70 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆ f f	- 3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.		0	Lim	iits	* * . * .	<b>m</b>
IVO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	60.38	60.388308		AT Cut
2	Reference Temperature	То	+ 20	+30	°C	
3	Overtone Order	~	3	}		
4	Load Capacitance	CL	٥	9	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf	- 9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20 0 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆f</u> f	- 0.5	+0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	ΔR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L-1	2.0	+	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	*	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆ f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	C	Lin	nits	3 X.o. 54	<b>5</b>
IVO.	Criaracteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	64.85	0955	MHz	AT Cut
2	Reference Temperature	То	+20	+30	°C	
3	Overtone Order	~	Ş	3		
4	Load Capacitance	CL	٥	0	pF	
5	Rated Drive Level	P _o	0.	.1	mW	
6	Frequency Adjustment Tolerance	: <u>Δ f</u> f	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf	- 9.0	+9.0	10-8	From frequency measured at T _o °C
9	Resistance Variation with Temperature	<u>Δ R</u> R	-20 0		%	From resistance measured at T _o °C
	over T _{op}		-2.0	+2.0	Ω	
10	Operating Temperature Range	Top	-20	+80	°C	**
11	Frequency Variation with Drive Level	∆ f f	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	<u>∆R</u> R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L,	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	*	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		



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#### TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Cumbal	Lin	nits	) fue (a	Remarks
IVO.	Characteristics	Symbol	Min.	Max.	Unit	
1	Resonance Frequency	f _r	74.	632	MHz	AT Cut
2	Reference Temperature	То	+20	+ 30	°C	
3	Overtone Order	~	(	3		
4	Load Capacitance	CL	Ç	o .	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r		40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆f</u> f	-9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature	ΔR R	- 20	+ 20	%	From resistance
	over T _{op}		-2.0	+2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>Δ f</u>	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	<u>∆R</u> R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L-1	2.0	÷	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆t f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Observation	0	Lin	Limits		<b>—</b>
IVO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	65.703227		MHz	AT Cut
2	Reference Temperature	То	+ 20	+30	*C	
3	Overtone Order	. ~		3		
4	Load Capacitance	CL	O	ø	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u> 1	- 10	+10	10-6	At To °C
7	Resonance Resistance	Rr	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-9.0	+9.0	10-6	From frequency measured at T _o *C
9	Resistance Variation	<u>Δ</u> .Β	- 20	+ 20	%	From resistance
	with Temperature over Top	R	-2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	<u>Δ f</u>	-0.5	+ 0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	ΔR R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	aracteristics Symbol Limits Unit	Lin	nits	Heit	Remarks
	V.W.WOW.		Min.	Max.	CARC	, , , , , , , , , , , , , , , , , , , ,
1	Resonance Frequency	. fr	<b>6</b> 5.00	5242	MHz	AT Cut
2	Reference Temperature	То	+20	+30	*C	
3	Overtone Order	~		3		
4	Load Capacitance	CL	٥	o	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	Rr	+	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δf</u>	- 9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature	ΔR R	- 20 o	+ 20 r	%	From resistance measured at T _o *C
	over T _{op}		-2.0	+2.0	Ω	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
10	Operating Temperature Range	Top	-20	+80	°C	
11	Frequency Variation with Drive Level	Δf f	-0.5	+ 0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	AR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L-1	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C ₀	~	5.0	pF	
16	Q Factor	Q	70 000	+	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>Δf</u> f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		



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#### TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	ıits	Unit	Remarks
140.	Orial acteristics	Symbol	Min.	Max.	Unit	Hemarks
1	Resonance Frequency	f _L	21	.0	MHz	AT Cut
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	RL	*	25	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-6.0 0 -14 -10 -14	+ 14 + 14 + 14 0 + 6.0	10-6	From T - 40 to - 20°C From T - 20 to + 10°C From T + 10 to + 50°C From T + 50 to + 70°C From T + 70 to + 85°C
9	Resistance Variation with Temperature over Top	<u>∆R</u> R	-20 0 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-40	+ 85	°C	
11	Frequency Variation with Drive Level	∆ f f	-0.5	+ 0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	AR R	- 20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	100 000	*	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	•		In the frequency range: f _L - 10% to f _L + 10%
18	Ageing	$\frac{\Delta_{\mathbf{f}}}{\mathbf{f}}$	-5.0	+5.0	10-6	Over 10 years
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		тс	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		**********	w vainav			
N.i.a.	Čka na stanica i	0	Lin	nits	11	<b>5</b>
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	82.40	7407	MHz	AT Cut
2	Reference Temperature	То	+ 65	+ 75	°C	
3	Overtone Order	-		5		
4	Load Capacitance	CL		0	ρF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ1</u>	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	*	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u> f	Not ap	plicable	10-6	
9	Resistance Variation with Temperature	∆R R	- 20 c	+20 r	%	From resistance measured at To °C
	over T _{op}		- 2.0	+2.0	Ω	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	<u>∆</u> t f	-0.5	+0.5	10~6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	ΔR R	-20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₁	8.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	a	80 000	-	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	- 1.0	+1.0	10-6	Over 15 years
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	CXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Committee of	Limits		1 5 24	Onmarka
IVO.	Unaracteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	83.33	3333	MHz	AT Cut
2	Reference Temperature	To	+ 65	+ 75	°C	
3	Overtone Order	*		5		
4	Load Capacitance	CL	· ·	c c	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	R,	*	50	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	∆f f	Not ap	olicable	10-6	
9	Resistance Variation with Temperature	∆R R	-20 o	+20 r	%	From resistance measured at To °C
	over T _{op}		- 2.0	+2.0	Ω	
10	Operating Temperature Range	Top	- 20	+80	*C	
11	Frequency Variation with Drive Level	∆ f	<b>-0.</b> 5	+0.5	10-6	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
12	Resistance Variation with Drive Level	∆R R	- 20	+20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₁	8.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF .	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	80 000	~	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	-6.0	+6.0	10-6	Over 15 years
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application	1	00	XO	:	

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Oh. n i	Lin	Limits Limits		<b></b>
INO.	Orialacteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	82.407407		MHz	AT Cut
2	Reference Temperature	То	+ 65	+ 75	°C	
3	Overtone Order	-		5		
4	Load Capacitance	CL	i e	0	ρF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	~	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u> f	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Too	ΔR R	-20 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta t}{t}$	- 0.5	+ 0.5	10-6	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
12	Resistance Variation with Drive Level	ΔR R	- 20	+ 20	%	From P _{S1} = 0.01mW to P _{S2} = 0.1mW
13	Motional Inductance	L ₁	8.0	•	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	80 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆</u> f	-6.0	+6.0	10-6	Over 15 years
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO .		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		T				
No.	Characteristics	Symbol	Lin	iits	Unit	Remarks
		7,777	Min.	Max.	7/11	
1 :	Resonance Frequency	fr	44.806526		MHz	AT Cut
2	Reference Temperature	To	+ 20	+30	°C	
3	Overtone Order	~		3		
4	Load Capacitance	CL	C	O	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u> f	-10	+10	10-6	At To °C
7	Resonance Resistance	R _r	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	9.0	+9.0	10~6	From frequency measured at To °C
9	Resistance Variation	ΔR R	- 20	+20	%	From resistance
	with Temperature over Too	H	- 2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	-20	+ 80	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	- 0.5	+0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	AR R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 <b>0</b> 00	*	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Combai	Lin	nits	Unit	Remarks
NO.	Unaraciensiics	Symbol	Min.	Max.	Unit	Hemarks
1	Resonance Frequency	f _r	59.71	59.717665		AT Cut
2	Reference Temperature	То	+ 60	+ 70	°C.	
3	Overtone Order			}		
4	Load Capacitance	CL	a	o ·	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta_{\cdot} f}{f}$	- 18	+18	10-6	From frequency measured at T _o °C
9	Resistance Variation	<u>∆_B</u>	-20	+20	%	From resistance
	with Temperature over Top	R	-2.0°	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	Δf f	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	-	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆f</u> f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	<b>0</b> 1		Limits			<b>_</b>
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f,	100	0.0	MHz	AT Cut
2	Reference Temperature	То	+ 70	+80	°C	
3	Overtone Order			ŝ		
4	Load Capacitance	CL	٥	o ,	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	*	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u>	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	Тор	-20	+ 80	*C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	olicable	ſF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	100 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	•		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>∆</u> f f	-3.0	+3.0	10~6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Al		Lim	nits		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	103	3.5	MHz	AT Cut
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order			Š		
4	Load Capacitance	CL	٥	0	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ</u> <u>f</u>	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r		80	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δ <u>f</u> f	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	Δ <u>†</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	<u>∆ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	4.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	рF	
16	Q Factor	Q	70 000	+	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	H _p /R or IZ _p I/R	2:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δf	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	· · · · · · · · · · · · · · · · · · ·		L. VAINAIN			
No.	Characterístics	Symbol	Lin	ıits	Unit	Remarks
140.	Granacieristics	Эуппоот	Min.	Max.	Unit	nemarks
1	Resonance Frequency	fr	99.02	3438	MHz	AT Cut
2	Reference Temperature	То	+70	+ 80	°C	
3	Overtone Order	~		5		
4	Load Capacitance	CL	•	O	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ1</u>	- 10	+10	10-6	At To *C
7	Resonance Resistance	R _r	~	80	Ω	At To *C
8	Frequency Variation with Temperature over Top	<u>Af</u> f	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	<u>∆B</u> R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₋₁	6.0	. *	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	100 000	*	+	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _b /R or IZ _p I/R	2:1			In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆t</u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Limits			
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	76	.0	MHz	AT Cut
2	Reference Temperature	То	+ 70	+ 80	*C	
3	Overtone Order	; ; ;		ş		
4	Load Capacitance	C _L	C	o	pF	
5	Rated Drive Level	P _o	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	~	80	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u>	Not ap	olicable	10-6	
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	Δ <u>†</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	+	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	·	5.0	pF	
16	Q Factor	Q	100 000	-	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δf f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		00	OXO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

T				•••••		
No.	Characteristics	Symbol Limits		Unit	Remarks	
			Min.	Max.	<b>3</b> ,,,,	
1	Resonance Frequency	fr	55.05	7968	MHz	AT Cut
2	Reference Temperature	То	+ 60	+70	°C	
3	Overtone Order	~	Ž	3		
4	Load Capacitance	CL	٥	O	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u>	- 18	+ 18	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature	$\frac{\Delta R}{R}$	-20 o		%	From resistance measured at T _o °C
	over T _{op}		-2.0	+2.0	Ω	
10	Operating Temperature Range	Top	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆</u>	-0.5	+0.5	10-6	From $P_{S1} = 0.005 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	10	+ 10	%	From P _{S1} = 0.005mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C _o	~	5.0	ρF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	3:1	~		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	Δ <u>f</u>	- 1.0	+ 1.0	10-6	Over 15 years after 1704 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		OCXO			

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		······································				
No.	Characteristics	Limits		8 1 74	Domerko	
IVO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	t _r	53.83	6808	MHz	AT Cut
2	Reference Temperature	То	+60	+ 70	°C	
3	Overtone Order	*		3		
4	Load Capacitance	CL	C	Ø.	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ</u> <u>f</u>	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆f</u> f	18	+18	10-6	From frequency measured at To °C
9	Resistance Variation	Δ <u>R</u> R	- 20	+20	%	From resistance
	with Temperature over Top	H	- 2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	*C	
11	Frequency Variation with Drive Level	∆ f f	-0.5	+0.5	10-6	From $P_{S1} = 0.005 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	Δ <u>R</u> R	- 10	+10	%	From $P_{S1} = 0.005 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	Li	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C ₀	-	5.0	pF	
16	Q Factor	Q	70 000	*	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>A</u> #	-1.0	+1.0	10-6	Over 15 years after 1704 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	CXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	iits	Unit	Remarks
IVO.	Onaraciensiics	Symbol	Min.	Max.	Offic	rigingiks
1	Resonance Frequency	f _r	65.70	8909	MHz	AT Cut
2	Reference Temperature	То	+ 20	+30	*C	
3	Overtone Order	*	5	3		
4	Load Capacitance	CL	٥	0	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ</u> <u>t</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	•	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-9.0	+9.0	10-6	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature	ΔR R	-20	+ 20 r	%	From resistance measured at To *C
*************	over T _{op}		-2.0	+2.0	Ω	
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>Δ f</u> f	- 0.5	+0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	∆R R	10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δf f	-3.0	+3.0	10~6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	CXO		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

6.1	<b>^</b>		Lim	its	£ 1?x	S
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	10	1.5	MHz	AT Cut
2	Reference Temperature	То	+ 70	<b>+</b> 80	°C	
3	Overtone Order	~		)		
4	Load Capacitance	CL	٥	٥.	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	*	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> <u>f</u>	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	<u>∆</u> B R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	Not ap	plicable	10-6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	4.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	~	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	2:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	Δf f	- 3.0	+3.0	10-6	Over 5 years storage + 15 years operating after 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	OXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	***************************************	······································		······	,	
No.	Characteristics	Symbol	Lin	Limits		Remarks
140.	Orial actoristics	Oymuor	Min.	Max.	Unit	nemarks
1	Resonance Frequency	f _r	5	0	MHz	AT Cut
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order	~		5		
4	Load Capacitance	CL	S	κ	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u> 4</u>	- 10	+10	10~6	At To *C
7	Resonance Resistance	Rr	+	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆f</u> f	-30	+30	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆.B</u> R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	∆f f	Not applicable		10-6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	20	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF.	
15	Static Capacitance	Co	*	7.0	pF	
16	Q Factor	Q	100 000	~	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or iZ _p l/R	2:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆ f</u>	-2.0	+2.0	10-6	Storage: 5 years. Operating: 10 years.
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		тс	XO		

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#### TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	vits	Unit	Remarks
140.	On an action falles	Gyrnoor	Min.	Max.	Oint	nemarks
1	Resonance Frequency	fr	<b>83</b> .35	3825	MHz	AT Cut
2	Reference Temperature	Τ _o	+ 20	+30	*C	
3	Overtone Order	. • <b>.</b>	5	}		
4	Load Capacitance	C _L	. 0	0	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf	- 9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature	<u>∆ R</u> R	-20 0 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	over T _{op} Operating Temperature	Top	- 2.0 - 20	+ 80	°C	
	Range	' op		, 00		***************************************
11	Frequency Variation with Drive Level	≜ţ	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0		mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	, C _o	*	5.0	pF	
16	Q Factor	Q	70 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: $f_r = 10\%$ to $f_r + 10\%$
18	Ageing	<u>∆1</u>	-3.0	+3.0	10~6	Storage 5 years. Operating 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		



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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	·····	Limits				
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r		83.360656		AT Cut
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order	-		}		
4	Load Capacitance	C _L	Ç	<u> </u>	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	-10	+10	10-6	At To °C
7	Resonance Resistance	Rr	+	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆1</u> f	-9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation	∆ R R	- 20	+20	%	From resistance
	with Temperature over Top	H	- 2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	-0.5	+ 0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	ΔR R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆ f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	iits	Unit	Remarks
1401	Orial actoricus	Oymoor	Min.	Max.	Çin.	
1	Resonance Frequency	fr	66.03	66.034769		AT Cut
2	Reference Temperature	То	+20	+ 30	°C	
3	Overtone Order	~	S	}		
4	Load Capacitance	G _L	٥	0	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	- R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆f</u>	-9.0	+9.0	10-6	From frequency measured at To °C
9	Resistance Variation with Temperature over Too	ΔR R	-20 0 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	∆f f	-0.5	+ 0.5	10-6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	<u>∆ R</u> R	- 10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	+	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	+	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	O	Lim	iits	Unit	Remarks
INO.	Orlanacianstics	Symbol	Min.	Max.	Oliit	nemaiks
1	Resonance Frequency	fr	70.35	8731	MHz	AT Cut
2	Reference Temperature	Τ _O	+ 20	+ 30	°C	
3	Overtone Order	. *	3	3		
4	Load Capacitance	CL	٥	o	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆f f	- 9.0	+ 9.0	10-6	From frequency measured at T _o *C
9	Resistance Variation with Temperature	<u>Δ R</u> R	-20 o		%	From resistance measured at To *C
***************************************	over T _{op}		-2.0	+2.0	Ω	
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	<u>∆f</u> f	- 0.5	+ 0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	<u>∆ R</u> R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	ρF	
16	Q Factor	Q	70 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>∆ †</u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application	1	00	XO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	iits	Unit	Remarks
140.	Orial actoristics	Cymoor	Min.	Max.	Orne	
1	Resonance Frequency	₹r	37.83	37.833333		AT Cut
2	Reference Temperature	То	+20	+30	°C	
3	Overtone Order	*	3			
4	Load Capacitance	CL	Ö	0	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At To *C
7	Resonance Resistance	Rr	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf	-9.0	+ 9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature	∆R R	-20	. 3	%	From resistance measured at T _o °C
	over T _{op}		-2.0	+2.0	Ω	
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	Δf f	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	∆R R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	ρF	
16	Q Factor	Q	70 000	+	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	3:1	~		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>A</u> f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-ir
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	XO	***************************************	

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			<u>-E VADIAIN</u>	· · · · · · · · · · · · · · · · · · ·		
No.	Characteristics	Cymakai	Lin	nits	11.00	
NO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	37.48	33333	MHz	AT Cut
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order			3		
4	Load Capacitance	C _L	0	X)	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+10	10-6	At To °C
7	Resonance Resistance	Pl _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20 -20	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	Δf	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	∆R R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	1F	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	-	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δf	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		OC	XO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lin	nits		Remarks
No.	Characteristics	Symbol	Min.	Max.	Unit	
1	Resonance Frequency	f,	37.	37.950		AT Cut
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order	~	3	3		
4	Load Capacitance	CL	C	٥	ρF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-10	+ 10	10-6	At To °C
7	Resonance Resistance	R,	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	- 9.0	+9.0	10-6	From frequency measured at T ₀ °C
9	Resistance Variation	<u>Δ R</u> R	-20	+20	%	From resistance
	with Temperature over Top	*	- 2.0	+ 2.0	Ω	measured at To °C
10	Operating Temperature Range	T _{op}	-20	+80	°C	
11	Frequency Variation with Drive Level	Δf f	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L-1	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r – 10% to f _r + 10%
18	Ageing	Δ f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		00	CXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Chanalanialia	Limits				m
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	16	32	.0	MHz	
2	Reference Temperature	То	+ 23	+ 27	°C	
3	Overtone Order		Funda	nental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	RL		15	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	Δf f	- 30	+30	10-6	From frequency measured at T _a °C
9	Resistance Variation with Temperature over Top	ΔR	-2.0	+2.0	Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 55	+ 105	*C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	10-6	
12	Resistance Variation with Drive Level	ΔR R	Not ap	olicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	Cı	Not ap	plicable	fF	
15	Static Capacitance	Co	: 1 1 1	7.0	pF	
16	Q Factor	Q	60 000	,	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _L − 200kHz to f _L + 200kHz
18	Ageing	<u>1</u> 4	-2.0	+2.0	10-6	Per year after Burn-in at To
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		X	O		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		<u></u>	C VANIAIY	<u></u>			
No.	Characteristics	Symbol Limits		Unit	Remarks		
NO.	Characteristics	ayınıdı r	Min.	Max.	Offic	Hemarks	
1	Resonance Frequency	. fr	74.63	7682	MHz	AT Cut	
2	Reference Temperature	То	+ 20	+30	°C		
3	Overtone Order	~		3			
4	Load Capacitance	CL	•	0	ρF		
5	Rated Drive Level	Po	0	.1	mW		
6	Frequency Adjustment Tolerance	<u>Δ f</u>	- 10	+ 10	10-6	At To °C	
7	Resonance Resistance	R _r	~	40	Ω	At To °C	
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	9.0	+9.0	10~6	From frequency measured at T _o °C	
9	Resistance Variation with Temperature	ΔR R	- 20	+20	%	From resistance measured at To °C	
	over T _{op}	* *	- 2.0	+2.0	Ω	measured at 10 C	
10	Operating Temperature Range	Тор	- 20	+ 80	°C		
11	Frequency Variation with Drive Level	∆f f	-0.5	+0.5	10-6	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.25$ mW	
12	Resistance Variation with Drive Level	ΔR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW	
13	Motional Inductance	L ₁	2.0	*	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	fF.		
15	Static Capacitance	C _o	-	5.0	pF		
16	Q Factor	Q	70 000	*	*		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	-		In the frequency range: f _r - 10% to f _r + 10%	
18	Ageing	Δ f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in	
19	Physical Dimensions		Figure 2(a)				
20	Intended Application		ocxo				

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		T				
No.	Characteristics	Symbol	Limits		Unit	Remarks
		,	Min.	Max.		
1	Resonance Frequency	f,	74.	654	MHz	AT Cut
2	Reference Temperature	To	+20	+30	°C	
3	Overtone Order	~	(	3	,	
4	Load Capacitance	CL	C	ĸ	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+10	10-6	At T _o °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ</u> <u>f</u>	- 9.0	+9.0	10~6	From frequency measured at T _o °C
9	Resistance Variation	∆R R	- 20	+ 20	%	From resistance
	with Temperature over Top	H	-2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	- 10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co		5.0	pF	
16	Q Factor	Q	70 000	~	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ <u>f</u> f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		00	CXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	ıìts	Unit	Remarks
INO.	Orlandueristics	Syllibol	Min.	Max.	Omt	nemarks
1	Resonance Frequency	f,	75	.0	MHz	AT Cut
2	Reference Temperature	To	+ 70	+ 80	°C	
3	Overtone Order	*	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	š		
4	Load Capacitance	CL	¢	c .	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10~6	At T _o °C
7	Resonance Resistance	R _r	*	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ </u>	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	∆R R	Not applicable		%	
10	Operating Temperature Range	Тор	- 20	+ 80	*C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10~6	
12	Resistance Variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF.	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	100 000	*	+	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>∆ f</u> f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	осхо		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		3.3.3	C VARIAIN	1 3 X W 1 W 2			
No.	Characteristics	Cumbai	Lin	nits	Unit	Remarks	
IVO.	Characteristics	Symbol	Min.	Max.	Unit	nemarks	
1	Resonance Frequency	f _Y	45.23	8276	MHz	AT Cut	
2	Reference Temperature	To	+60	+ 70	°C		
3	Overtone Order			3			
4	Load Capacitance	CL	0	0	pF		
5	Rated Drive Level	Po	0.	.1	mW		
6	Frequency Adjustment Tolerance	Δf f	-10	+ 10	10-6	At To °C	
7	Resonance Resistance	R _r		40	Ω	At To °C	
8	Frequency Variation with Temperature over Top	<u>Δ1</u>	- 18	+ 18	10-6	From frequency measured at T ₀ °C	
9	Resistance Variation	ΔR R	-20	+20	%	From resistance	
	with Temperature over Top	H	-2.0	r   +2.0	Ω	measured at To °C	
10	Operating Temperature Range	Тор	- 20	+ 80	°C		
11	Frequency Variation with Drive Level	<u>∆</u> <u>f</u>	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$	
12	Resistance Variation with Drive Level	∆R R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW	
13	Motional Inductance	L ₁	2.0	-	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	fF		
15	Static Capacitance	C _o	-	5.0	pF		
16	Q Factor	Q	70 000				
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	<b>"</b>		In the frequency range: f _r - 10% to f _r + 10%	
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-	
19	Physical Dimensions		Figur	e 2(a)			
20	Intended Application		1 00	CXO			

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		1	**********			
No.	Characteristics	Symbol Limits		Unit	Remarks	
			Min.	Max.		
1	Resonance Frequency	f _r	54.80	54.807966		AT Cut
2	Reference Temperature	Τo	+ 60	+ 70	°C	
3	Overtone Order		:	}		
4	Load Capacitance	CL	٥	Ö	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ.f</u>	- 10	+ 10	10-6	At To *C
7	Resonance Resistance	R _r		40	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	- 18	+ 18	10-6	From frequency measured at T _o *C
9	Resistance Variation	ΔR R	- 20	+ 20	%	From resistance
	with Temperature over Top	H	-2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	∆f f	- 0.5	+ 0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	ρF	
16	Q Factor	Q	70 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1			In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δ f ·	- 3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Burn-in
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		00	CXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limits		Unit	Remarks
INO.	Cridiacteristics	Symbor	Min.	Max.	Oint	nemarks
1	Resonance Frequency	f _r	60.340231		MHz	AT Cut
2	Reference Temperature	То	+20	+ 30	°C	
3	Overtone Order	~		3		
4	Load Capacitance	CL	¢	0	ρF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+10	10-6	At To °C
7	Resonance Resistance	Rr	•	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf f	- 9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation	AR R	- 20	+ 20	%	From resistance
	with Temperature over Top	l H	-2.0	r   +2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	~	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3;1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆ f</u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 hours Burn-ir
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		0	CXO	1	

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics Symbol —		Lim	Limits		Remarks
140,	One acterialics	Cymbol	Min.	Max.	Unit	Homans
1	Resonance Frequency	fr	100.08	100.084340		AT Cut
2	Reference Temperature	τ _σ	+ 23	+ 27	°C	
3	Overtone Order			Š		
4	Load Capacitance	CL	٥	Ö	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>1</u>	- 10	+ 10	10~6	At To °C
7	Resonance Resistance	R _r		40	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆_f f	9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Too	<u>Δ R</u> R	-20 -2.0	+20 r l +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 25	+ 75	°C	
11	Frequency Variation with Drive Level	<u>∆ f</u>	Not applicable		10-6	
12	Resistance Variation with Drive Level	<u>∆ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	4.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	7.0	pF	
16	Q Factor	Q	70 000	~	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p l/R	2:1	~		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>Δ</u> <u>f</u>	- 3.0	+3.0	10-6	Over 10 years after 500 hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		TC	XO		



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### TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	nite		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	r f _r	62.350		MHz	AT Cut
2	Reference Temperature	То	+ 70	+ 80	°C	
3	Overtone Order	: •		 δ		
4	Load Capacitance	CL	٥	<	pF	
5	Rated Drive Level	Pa	0.	.1	mW	
6	Frequency Adjustment Tolerance	- <u>Δ f</u>	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	~	80	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>∆_f</u> f	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		% Ω	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	<u>∆f</u> f	Not applicable		10-6	
12	Resistance Variation with Drive Level	Δ <u>R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	¹ Q	100 000		*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-in
19	Physical Dimensions		Figur	re 2(a)		
20	Intended Application		00	OXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lím	iits	Unit	Remarks
IVU.	Ondi dolensues		Min.	Max.	UIIII.	
1	Resonance Frequency	fr	67.99	8154	MHz	AT Cut
2	Reference Temperature	Τo	+ 20	+30	°C	
3	Overtone Order	* ************************************	9	3		
4	Load Capacitance	CL	· ·	ņ	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	-10	+10	10-6	At To °C
7	Resonance Resistance	R _r		40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>A_f</u>	- 9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature	ΔR R	-20 o	+ 20	%	From resistance measured at To °C
	over T _{op}		-2.0	+2.0	Ω	measured at 18 O
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	~	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>∆ f</u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-ir
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	CXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Combai	Lin	nits	Unit	Remarks
IVO.	Criaracieristics	Symbol	Min.	Max.	Oim	nemarks
1	Resonance Frequency	fr	61.29	61.290031		AT Cut
2	Reference Temperature	То	+ 55	+ 65	°C	
3	Overtone Order	. *	Ş	3		
4	Load Capacitance	CL		0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	Rr	*	40	Ω	At To °C
8	Frequency Variation with Temperature. Over Top. At To ± 5°C.	Δf f	- 12 0	+ 12 + 1.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	Δ <u>R</u> R	-20 -2.0	+20 or +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u>	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	-10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	~	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C _o	-	5.0	pF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r -10% to f _r +10%
18	Ageing	∆f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-in
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		0	CXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	iits	Unit	Remarks
INO.	Characteristics	J Jyrribor	Min.	Max.	Orac	remans
1	Resonance Frequency	fr	56.25	56.259952		AT Cut
2	Reference Temperature	Τ _O	+ 55	+ 65	°C	
3	Overtone Order	*	S	}		
4	Load Capacitance	CL	۵	ŗ.	ρF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u> f	10	+ 10	10-6	At T₀ °C
7	Resonance Resistance	R _r	. #	40	Ω	At T _o °C
8	Frequency Variation with Temperature. Over Top. At To±5°C.	∆f f	- 12 0	+ 12 + 1.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20 0 -2.0	+20 r +2.0	%	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	∆ f f	- 0.5	+0.5	10-6	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.25$ mW
12	Resistance Variation with Drive Level	ΔR R	- 10	+ 10	%	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.25$ mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	*	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	Δf f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-in
19	Physical Dimensions		Figur	re 2(a)		
20	Intended Application		00	CXO		

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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	its	Unit	Remarks	
		Oymoo.	Min.	Max.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7.0330	
1	Resonance Frequency	f _r	56.28	56.283270		AT Cut	
2	Reference Temperature	То	+ 55	+ 65	°C		
3	Overtone Order		3	}			
4	Load Capacitance	CL	٥	>	ρF		
5	Rated Drive Level	Po	0.	1	mW		
6	Frequency Adjustment Tolerance	<u>Δ.f</u>	- 10	+ 10	10-6	At To *C	
7	Resonance Resistance	R _r	*	40	Ω	At To °C	
8	Frequency Variation with Temperature. Over Top. At To ±5°C.	∆ f f	- 12 0	+12 +1.0	10-6	From frequency measured at T _o °C	
9	Resistance Variation with Temperature over Too	ΔR R	-20 0 -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C	
10	Operating Temperature Range	Тор	-20	+ 80	°C		
11	Frequency Variation with Drive Level	<u>Δ</u> f	-0.5	+0.5	10~6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$	
12	Resistance Variation with Drive Level	AR R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW	
13	Motional Inductance	L ₁	2.0	-	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	fF		
15	Static Capacitance	C _o	-	5.0	pF		
16	Q Factor	Q	70 000	-	-		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r = 10% to f _r + 10%	
18	Ageing	Af f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-i	
19	Physical Dimensions		Figur	e 2(a)			
20	Intended Application		00	CXO			

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lin	ıits	***************************************	
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	37.753122		MHz	AT Cut
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order		<	3		
4	Load Capacitance	CL	S	0	pF	
5	Rated Drive Level	P _o	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>A.f</u>	-9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation	<u>Δ R</u> R	- 20	+20	%	From resistance
	with Temperature over Top	H	-2.0	r   +2.0	Ω	measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 20	+80	°C	
11	Frequency Variation with Drive Level	∆ f f	- 0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	<u>Δ R</u> R	- 10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L-1	2.0	*	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	-	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	**		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	Δf f	- 3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-in
19	Physical Dimensions		Figu	e 2(a)		
20	Intended Application		00	CXO		



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## TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	its	Unit	Remarks
	On an action action	Oyoo.	Min.	Max.	J.,	
1	Resonance Frequency	f _r	37.14	37.140272		AT Cut
2	Reference Temperature	T _o	+20	+30	°C	
3	Overtone Order	-	3			
4	Load Capacitance	CL	ø	Þ	pF	
5	Rated Drive Level	Po	0.	1	Wm	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf	- 9.0	+ 9.0	10-6	From frequency measured at T _a °C
9	Resistance Variation	<u>∆_B</u>	- 20	+20	%	From resistance
	with Temperature over Top	R	- 2.0	r   +2.0	Ω	measured at T _o °C
10	Operating Temperature Range	Тор	-20	+80	°C	
11	Frequency Variation with Drive Level	∆ f f	- 0.5	+ 0.5	10~6	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
12	Resistance Variation with Drive Level	<u>Δ R</u> R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	70 000	~	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	~		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	<u>Δ.f.</u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-ir
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	OXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characterístics	Cumhal	Lin	nits	Unit	Remarks
INO.	Originacionistics	Symbol	Min.	Max.	Ome	riomoras
1	Resonance Frequency	f _r	47.37	47.373737		AT Cut
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order	~	, 4	3		
4	Load Capacitance	CL	Ç	×	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	∆ f f	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	~	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>4</u>	- 9.0	+9.0	10-6	From frequency measured at T _o °C
9	Resistance Variation	ΔR R	- 20	+ 20	%	From resistance
	with Temperature over Top	l K	- 2.0	r   +2.0	Ω	measured at T _a °C
10	Operating Temperature Range	Тор	- 20	+80	°C	
11	Frequency Variation with Drive Level	Δ <u>f</u> f	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	- 10	+10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C ₀	~	5.0	pF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	30		In the frequency range: f _r – 10% to f _r + 10%
18	Ageing	∆ f f	- 3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-in
19	Physical Dimensions		Figu	re 2(a)		
20	Intended Application		0	OXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characterístics	Symbol	Lim	nits	Unit	Remarks
(NO.	Orial actoristics	Symbol	Min.	Max.	Oim	Namarka
1	Resonance Frequency	fr	80.56	2500	MHz	AT Cut
2	Reference Temperature	T ₀	+ 70	+ 80	°C	
3	Overtone Order	~	5	ŏ		
4	Load Capacitance	CL	Q	o	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ1</u>	- 10	+10	10-6	At To *C
7	Resonance Resistance	P _r	~	80	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Ơ</u> 1	Not ap	plicable	10-6	
9	Resistance Variation with Temperature over Top	Δ <u>R</u> R	Not applicable		% Ω	
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10~6	
12	Resistance Variation with Drive Level	∆R R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.0	•	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	~	5.0	pF	
16	Q Factor	Q	100 000	~	~	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	∆f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-in
19	Physical Dimensions		Figur	e 2(a)		
20	Intended Application		00	CXO		



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### TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			C VARIAIN	140,00			
No. Characteristics				nits	Unit	Remarks	
INO.	Orlandoteristics	Symbol	Min.	Max.	OIII	Heliano	
1	Resonance Frequency	fr	100.6	46340	MHz	AT Cut	
2	Reference Temperature	Τo	+ 23	+ 27	*C		
3	Overtone Order	-		5			
4	Load Capacitance	CL	(	х	pF		
5	Rated Drive Level	Po	0	.1	mW		
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+10	10-6	At T₀ °C	
7	Resonance Resistance	Rr	•	40	Ω	At To °C	
8	Frequency Variation with Temperature over Top	4	-9.0	+9.0	10-6	From frequency measured at T _o °C	
9	Resistance Variation	ΔR R	- 20	+ 20	%	From resistance	
	with Temperature over Top	l K	-2.0	or   +2.0	Ω	measured at To °C	
10	Operating Temperature Range	Тор	- 25	+ 75	°C		
11	Frequency Variation with Drive Level	∆ f f	-0.5	+ 0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$	
12	Resistance Variation with Drive Level	ΔR R	- 1.0	+1.0	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$	
13	Motional Inductance	L-1	4.0	~	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	fF		
15	Static Capacitance	Co	-	7.0	pF		
16	Q Factor	Q	70 000	~	~		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1	*		In the frequency range: f _r - 10% to f _r + 10%	
18	Ageing	<u>∆f</u>	-3.0	+3.0	10-6	Over 10 years after 500 Hours Burn-in	
19	Physical Dimensions		Figu	re 2(a)			
20	Intended Application		т	CXO			

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		T T				
No.	Characteristics	Symbol	Lin		Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	f _r	100.7		MHz	AT Cut
2	Reference Temperature	То	+ 23	+27	°C	
3	Overtone Order	*		5		
4	Load Capacitance	C _L	ŭ	<b>C</b> -	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	*	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>1</u>	- 9.0	+9.0	10-6	From frequency measured at T _o *C
9	Resistance Variation	<u>AR</u> R	- 20	+20	%	From resistance
	with Temperature over Top	H	-2.0	+2.0	Ω	measured at To °C
10	Operating Temperature Range	Тор	- 25	+ 75	°C	
1.1	Frequency Variation with Drive Level	<u>∆</u> f f	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	~ 1.0	+1.0	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	4.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	ſF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	70 000	~	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	2:1			In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>1</u> 4	-3.0	+3.0	10-6	Over 10 years after 500 Hours Burn-in
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		T(	CXO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	Limits		Damada	
140.	O naracteristics	Symbol	Min.	Max.	Unit	Remarks	
1	Resonance Frequency	<b>t</b> g.::	60.28	60.281611		AT Cut	
2	Reference Temperature	То	+ 55	+ 65	°C		
3	Overtone Order	-		3	······································		
4	Load Capacitance	CL	٥	c	pF		
5	Rated Drive Level	Po	0	.1	mW		
6	Frequency Adjustment Tolerance	<u>∆1</u>	- 10	+10	10-6	At T _o °C	
7	Resonance Resistance	R _r	~	40	Ω	At To °C	
8	Frequency Variation with Temperature. Over Top. At To ±5°C.	Δf f	12 0	+ 12 + 1.0	10-6	From frequency measured at To °C	
9	Resistance Variation with Temperature over Too	<u>Д</u> В 1	-20 0 -20	+20 r +2.0	% Ω	From resistance measured at T _o °C	
10	Operating Temperature Range	Тор	-20	+80	°C		
11	Frequency Variation with Drive Level	Δ <u>f</u>	-0.5	+0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$	
12	Resistance Variation with Drive Level	Δ <u>R</u> R	- 10	+ 10	%	From P _{S1} = 0.05mW to P _{S2} = 0.25mW	
13	Motional Inductance	L ₁	2.0	*	mH		
14	Motional Capacitance	C ₁	Not ap	plicable	fF		
15	Static Capacitance	Co	***************************************	5.0	ρF		
16	Q Factor	Q	70 000				
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	•		In the frequency range: f _r = 10% to f _r + 10%	
18	Ageing	<u>∆1</u> f	- 3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-in	
19	Physical Dimensions		Figur	9 2(a)			
20	Intended Application		OC	:xo	•••••••••••••••••••••••••••••••••••••••		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limits		Unit	Remarks
			Min.	Max.	. <b></b>	nemaks Parak Parak
1	Resonance Frequency	f,	60.284015		MHz	AT Cut
2	Reference Temperature	То	+ 55	+ 65	°C	
3	Overtone Order	<u>.</u>	3			
4	Load Capacitance	CL			pF	
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	Δ <u>f</u>	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R,	~	40	Ω	At To °C
8	Frequency Variation with Temperature. Over Top. At To ±5°C.	Δ <u>f</u>	-12 0	+ 12 + 1.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Too	<u>Δ R</u> R	-20 o -2.0	+20 +2.0	%	From resistance measured at To °C
10	Operating Temperature Range	Тор	- 20	+ 80	°C	
11	Frequency Variation with Drive Level	$\frac{\Delta f}{f}$	- 0.5	+ 0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	ΔR R	- 10	+10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	Li	2.0	: , : <b>*</b> :	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C _o	*	5.0	pF	
16	Q Factor	Q	70 000	+		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1	***************************************		In the frequency range: $f_r = 10\%$ to $f_r + 10\%$
18	Ageing	∆ f f	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-
19	Physical Dimensions		Figure 2(a)			
20	Intended Application		oc	XO		

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# TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limits		Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	tr tr	55.85	0279	MHz	AT Cut
2	Reference Temperature	To	+ 55	+ 65	°C	
3	Overtone Order	-	3			
4	Load Capacitance	CL	<b>×</b> 1 <b>×</b> 1 <b>×</b> 1		pF	
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>∆f</u> f	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R _r	# # # # # # # # # # # # # # # # # # #	40	Ω	At To °C
8	Frequency Variation with Temperature. Over Top. At To ± 5°C.	<u>∆ f</u> f	- 12 0	+ 12 + 1.0	10-6	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	∆R R	-20 ° -2.0	+20 r +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	- 20	+ 80	»c	
11	Frequency Variation with Drive Level	∆f f	-0.5	+ 0.5	10-6	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
12	Resistance Variation with Drive Level	AR R	- 10	+ 10	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.25 \text{mW}$
13	Motional Inductance	L ₁	2.0	* · · · ·	mH	
14	Motional Capacitance	C ₁	Not applicable		fF 1	
15	Static Capacitance	Co	*	5.0	pF	
16	Q Factor	Q	70 000	-	*	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	3:1			In the frequency range: f _r = 10% to f _r + 10%
18	Ageing	<u>A1</u>	-3.0	+3.0	10-6	Storage: 5 years. Operating: 15 years. After 500 Hours Burn-i
19	Physical Dimensions		Figure 2(a)			<u> </u>
20	Intended Application	<b>†</b>	00	CXO		



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#### APPENDIX 'A'

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#### AGREED DEVIATIONS FOR RAKON (F)

ITEMS AFFECTED	DESCRIPTION OF DEVIATION				
Para. 4.2.2	Para. 9.3, Shock: Shall not be performed.				
Para. 4.2.3	Para. 9.11, Radiographic Inspection: Shall not be performed.				



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#### APPENDIX 'B'

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### AGREED DEVIATIONS FOR KVG Quartz Crystal Technology GmbH (D)

ITEMS AFFECTED	DESCRIPTION OF DEVIATION
Para. 4.2.2 Para. 4.2.3 Para. 4.2.4 Para. 4.2.5	Para. 9.5.1, Seal Test Fine Leak: The crystal units shall be subjected to MIL-STD-202, Method 112, Procedure IIIa.