

Pages 1 to 122

CRYSTAL UNITS IN METAL HOLDER, BASED ON TYPE T807,

FREQUENCY RANGE 4.0 - 140MHZ

ESCC Detail Specification No. 3501/008

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

ISSUE 4 March 2010





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DOCUMENTATION CHANGE NOTICE

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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 807, Frequency Range 4.0 - 140MHz.

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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 No. 3501/001. ESCC 3501/001 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 COMPONENT TYPE VARIANTS

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).

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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.

	Resonance	Load	Reference	Operating Temp.	Lead L	
Variant	Frequency	Capacitance	Temp.	Range	(Dim. l	_ mm)
	(MHz)	(C _L pF)	(T _o °C)	(T _{op} °C)		
in the second of					Min.	Max.
01	83.102493	∞. ∞	+ 25	-25 to +70	12.7	-
02	85.412668	∞	+ 25	-20 to +70	12.7	-
03	90.833333	∞	+ 25	-20 to +70	12.7	-
04	90.857143	00	+25	-20 to +70	12.7	-
05	90.880952	00	+ 25	-20 to +70	12.7	-
06	50.0	00	+ 25	-20 to +70	12.7	-
07	85.412668	∞	+ 65	+59 to +71	12.7	-
08	93.988095	² constante l piece ∞	+ 25	-20 to +70	12.7	
09	94.0	∞	+ 25	-20 to +70	12.7	-
10	94.095238	∞	+25	-20 to +70	12.7	-
11	94.107143	00	+ 25	-20 to +70	12.7	-
12	18.8875	32	+ 25	-20 to +70	12.7	-
13	16.0	∞	+25	-40 to +85	12.7	-
14	24.6862	30	+ 25	-20 to +70	12.7	-
15	110.045	∞	+ 25	-25 to +70	12.7	-
16	110.765	∞	+ 25	-25 to +70	12.7	-
17	27.5	30	+ 25	-20 to +50	12.7	-
18	92.852381	∞	+ 25	-25 to +70	12.7	-
19	92.846032	∞	+ 25	-25 to +70	12.7	-
20	88.134921	∞	+ 25	-25 to +70	12.7	-
21	84.0	∞	+70	-20 to +80	12.7	-
22	15.0	25	+25	-55 to +105	12.7	-
23	40.0	∞	+40	0 to +90	12.7	-
24	29.629	. ∞	+40	0 to +90	12.7	-
25	32.0	∞	+25	-20 to +70	12.7	•
26	14.7456	. ∞	+ 25	-55 to +105	12.7	-
27	12.25	32	+ 25	-30 to +70	12.7	-
28	4.096	25	+25	-55 to +100	12.7	-
29	31.999305	∞	+25	-20 to +60	12.7	-
30	74.801912	∞	+ 25	-25 to +70	12.7	_
31	78.217213	00	+ 25	-25 to +70	12.7	-
32	81.66667	∞	+ 70	-20 to + 70	12.7	-
33	81.00766	00	+ 70	-20 to + 80	12.7	-
34	90.869921	00	+ 25	-25 to +70	12.7	-
35	85.412668	- 00	+ 65	+59 to +71	12.7	-
36	140.0	. ∞	+ 25	-20 to +70	12.7	-

NOTES: See Page 8.

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

		1			A		
Variant	Resonance Frequency	Load Capacitance	Reference Temp.	Operating Temp. Range	Intend. Applica-	Lead I (Dim.	
variant	(MHz)	(C _L pF)	(T _o °C)	(T _{op} °C)	tion	Min.	Max.
37	81.544502	00	+ 67	-20 to +80	-	12.7	-
38	81.632635	00 :	+ 65	-20 to +80		12.7	-
39	20.0	32	+ 25	-30 to +70	-	12.7	
40	83.133333	∞	+ 65	-20 to +80	-	12.7	-
41	16.0	30	+ 25	-22 to +90	-	12.7	-
42	20.0	∞	+ 25	-30 to +95	-	12.7	-
43	83.312841	∞	+ 25	-25 to +70	-	12.7	-
44	83.316257	∞	+ 25	-25 to +70	-	12.7	-
45	83.319672		+ 25	-25 to +70	igo i rasmolia∰que maso q =	.12.7	4
46	83.362503	∞	+ 25	-25 to +70	-	12.7	-
47	83.340164	00	+ 25	-25 to +70	-	12.7	-
48	83.346994	00	+ 25	-25 to +70	-	12.7	-
49	83.353825	∞	+ 25	-25 to +70	-	12.7	-
50	83.360656	8	+ 25	-25 to +70	-	12.7	-
51	45.056	∞	+ 25	-25 to +70	-	12.7	-
52	78.247951	∞	+ 25	-25 to +70	-	12.7	-
53	78.213798	∞	+ 25	-25 to +70	-	12.7	-
54	78.227459	x	+ 25	-25 to +70	- 1 1-	12.7	-
55	78.220628	∞	+ 25	-25 to +70	-	12.7	-
56	81.666667	,∞	+ 67	-20 to +80	-	12.7	-
57	121.714286	∞	+ 25	-20 to +70	-	12.7	-
58	116.471429	∞	+ 25	-20 to +70	-	12.7	-
59	4.194304	22	+ 60	-20 to +70	-	12.7	-
60	16.0	30	+ 25	-30 to +70	, •	12.7	-
61	10.0	30	+30	-30 to +70	-	12.7	-
62	25.0	30	+ 25	-30 to +80	X0	12.7	-
63	90.0	12	+ 25	-20 to +85	-	12.7	-
64	83.366142	∞	+ 67	-20 to +80	-	12.7	-
65	70.975328	∞	+ 25	-25 to +70	-	12.7	-
66	79.93306	∞	+ 65	-20 to +80	-	12.7	-
67	79.941257	.∞	+ 65	-20 to +80	-	12.7	-
68	9.2	30	+ 30	-30 to +70	X0	12.7	-
69	24.0	30	+ 27	-55 to +100	-	12.7	-
70	76.8315	∞	+ 25	-25 to +80	-	12.7	-
71	20.0	30	+ 25	-30 to +80	-	12.7	-
72	20.0	30	+ 25	-55 to +105		12.7	-

NOTES: See Page 8.

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

Variant	Resonance Frequency	Load Capacitance	Reference Temp.	Operating Temp. Range	Intend. Applica-	Lead Length (Dim. L mm)	
(MHz)		(C _L pF)	(T _o °C)	(T _{op} °C)	tion	Min.	Max.
73	40.960	8	+ 25	-25 to +70	-	12.7	-
74	70.965082	œ	+ 25	-25 to +70	-	12.7	
75	79.937158	∞	+ 65	-20 to +80	· -	12.7	-
76	79.945355	œ	+ 65	-20 to +80	- .	12.7	-
77	59.356136	00	+ 25	-25 to +70	-	12.7	-
78	18.0	30	+ 25	-25 to +100	-	12.7	-
79	81.576923	∞,	+ 67	-20 to +80	OCXO	12.7	-
80	86.024590	∞	+ 25	-20 to +80	TCXO	12.7	-
81	85.983607	∞	+ 25	-20 to +80	TCXO	, 12.7	-
82	79.949453	.00	+ 65	-20 to +80	осхо	12.7	-
83	79.957650	∞	+ 65	-20 to +80	OCXO	12.7	-
84	70.970205	∞·	+ 25	-25 to +70	TCXO	12.7	-
85	101.936620	12	+ 25	-20 to +80	VCXO	12.7	-
86	75.0	12	+ 25	-20 to +80	VCXO	12.7	-
87	80.0	12	+ 25	-20 to +80	VCXO	12.7	-
88	74.626318	∞	+ 25	-20 to +80	TCXO	12.7	-
89	64.791785	∞	+ 25	-20 to +80	TCXO	12.7	-
90	64.990091	∞ ∞	+ 25	-20 to +80	TCXO	12.7	-
91	64.995773	∞	+ 25	-20 to +80	TCXO	12.7	-
92	74.677455	∞-	+ 25	-20 to +80	TCXO	12.7	-
93	66.638308	∞.	+ 25	-20 to +80	TCXO	12.7	-
94	66.628692	∞	+ 25	-20 to +80	TCXO	12.7	-
95	60.091346	∞	+ 25	-20 to +80	TCXO	12.7	-
96	60.086538		+ 25	-20 to +80	TCXO	12.7	-
97	37.083333	co .	+ 25	-20 to +80	TCXO	12.7	-
98	66.612423	∞	+ 25	-25 to +70	TCXO	12.7	-
99	79.924863	00	+ 65	-20 to +80	OCXO	12.7	-

NOTES1. 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	
3	Operating Temperature Range	T _{op}	-> ->	°C	Note 2
4	Storage Temperature Range	T _{stg}	-65 to +125	°C	Note 3
5	Soldering Temperature	T _{sol}	+ 260	°C	Note 4

NOTES

1

Fundamental and Overtone Order	Approx. Frequency Range (MHz)	Drive Level Range (mW)
Fundamental	4 - 35	0.05 to 0.2
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.

11.			Lim	nits		
No.	Characteristic	Symbol			Unit	Remarks
			Min.	Max		
11	Resonance Frequency	f _r or f∟			MHz	Note 1
2	Reference Temperature	To			°C	Note 2
3	Overtone Order	-		in Chyllan		
4	Load Capacitance	CL			pF	Note 3
5	Rated Drive Level	P _o		,	mW	Note 4
6	Frequency Adjustment Tolerance	Δ f f		معمداتها يبواشا	10 ⁻⁶	At T _o °C Note 5
7	Resonance Resistance	R _r or R _L			Ω	At T _o °C Note 6
8	Frequency Variation with Temperature over Top	<u>Δ</u> f			10 ⁻⁹	From frequency measured at T _o °C Note 7
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R			%	From resistance measured at T _o °C Note 7
10	Operating Temperature Range	T _{op}			°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$			sed y 1,0-6 y a	From P _{S1} = mW to
	With Drive Level				e grangtagale. T	P _{S2} = mW Note 8
12	Resistance variation with Drive Level	<u>∆ R</u> R			%	From $P_{S1} = mW$ to $P_{S2} = mW$
	1 1 1					Note 8
13	Motional Inductance	L ₁			mH	Notes 9 and 10
14	Motional Capacitance	C ₁			fF	Note 9
15	Static Capacitance	C _o			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 ıZ _p i/R				In the frequency range: f - kHz to f + kHz
18	Ageing	Δf f			10-6	Note 13
19	Terminal length	L	:		mm	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, C_L 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 T_0 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 (P_{S1} to P_{S2}) 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 L_1 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. Terminal Lengths

To be specified if different from Figure 2 dimensions. If dimensions are as per Figure 2 then "Figure 2" to be entered in the Limits column.

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

Symbol	Millim	etres	Remarks
Зушоог	Min.	Max.	Remarks
ØA	erik 🚅 🖫	10.70	
С	-	6.80	•
Н	4.83	5.33	Pitch 5.08mm
ØK	0.40	0.48	And the second of the second o
L	12.70	-	•
Р	-	0.90	Note 2
Q		0.95	Note 2

NOTES

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

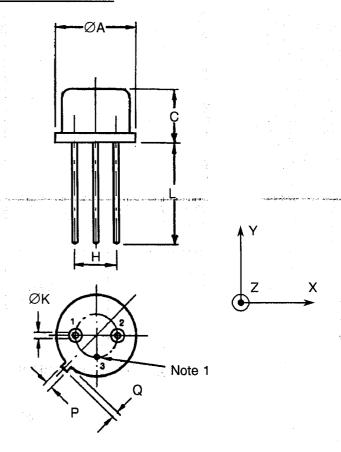
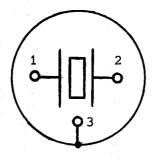


FIGURE 3 - FUNCTIONAL DIAGRAM



(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	= fL
Reference Temperature	= T _o
Resonance Resistance	$= R_r$
Load Resonance Resistance	$= R_L$
Rated Drive Level	= Po
Static Capacitance	$= C_o$
Load Capacitance	= CL
Motional Capacitance	= C ₁
Motional Inductance	$= L_1$
Response Resistance	$= R_P$
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 Deviations from Qualification Tests (Chart IV)

None.

4.2.5 Deviations from Lot Acceptance Tests (Chart V)

None.



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4.3 MECHANICAL REQUIREMENTS

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 Case

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 SCC Component Number, which shall be constituted and marked as follows:
350100801B

Detail Specification Number	T
Type variant, (see Table 1(a))	 ال
Testing level (B or C, as applicable)	



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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 Traceability Information

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 <u>ELECTRICAL MEASUREMENTS</u>

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 Circuits for Electrical Measurements (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 $T_{amb} = T_0 \pm 2$ °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 <u>Electrical Circuits for Burn-in (Figure 5)</u>

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 , ΔP)	Para. 9.2.1.1	Table 1(a), Item 11	10 ⁻⁶
4	Resistance variation with Drive Level	$\frac{\Delta R}{R}$ (T _o , ΔP)	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	Co	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	$\frac{\Delta f}{f} (\Delta T, P_0)$	Para. 9.2.1.2	Table 1(a) Item 8	10 ⁻⁶
10	Resistance variation with Temperature over Top	<u>Δ R</u> (ΔT, 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	Δ f f	As per Table 2	As per Table 2	± 2.0	10-6
2	Resonance resistance drift	<u>Δ R</u> R	As per Table 2	As per Table 2	± 10 or (1) ± 1.0	% Ω

NOTES

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.

^{1.} Whichever is the highest value.



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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 Measurements and Inspections at Intermediate Points and on Completion of Endurance Tests

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

	The second secon			<u> </u>		10		
10 - 20 - 10 - 10 - 10 - 10 - 10 - 10 -	ESCC GENERIC SP	EC. NO. 3501	MEASUREMENTS A	ND INSPECTIONS		LIN	IITS	1
NO.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL.	Min.	Мах.	UNIT.
01	Electrical Measurements at Reference Temperature	Para. 9.2.4	Electrical Measurements	Table 2		Tabl	e 1(a)	
02	Shock	Para. 9.3	Initial Measurements Resonance Frequency Resonance Resistance Final Measurements	Table 2 Item 1 Table 2 Item 2	f R	1.7	2 Item 1 2 Item 2	
			Resonance Frequency Drift	Table 2 Item 1	<u>∆ f</u>	- 1.0	+ 1.0	10-6
			Resonance Resistance Drift	Table 2 Item 2	<u>Δ R</u> R ΔR	- 10 or (2) - 1.0	+ 10 + 1.0	%
03	Vibration	Para. 9.4	Initial Measurements Resonance Frequency Resonance Resistance Final Measurements	Table 2 Item 1 Table 2 Item 2	f R		2 Item 1 2 Item 2	
. vi			Resonance Frequency Drift Resonance Resistance	Table 2 Item 1	Δf f	-1.0	+1.0	10-6
			Drift	Table 2 Item 2	<u>Δ R</u> R ΔR	- 10 or (2) - 1.0	+10	% Ω
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	(新文)(新文) (新文)(新文)		-	•
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.)

			· · · · · · · · · · · · · · · · · · ·					
	ESCC GENERIC SP	EC. NO. 3501	MEASUREMENTS A	ND INSPECTIONS		LIM	IITS	
NO.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL	Min.	Max.	UNIT
	Climatic Sequence	Para. 9.14	1 1 1	4				
08	Dry Heat	Para. 9.14.1	Initial Measurements			:		
			Resonance Frequency	Table 2 Item 1	f	Table :	2 Item 1	
			Resonance Resistance	Table 2 Item 2	R	Table :	2 Item 2	
			Final Measurements					
			Resonance Frequency Drift	Table 2 Item 1	<u>Δ f</u> f	-2.0	+ 2.0	10 ⁻⁶
			Resonance Resistance	Table 2 Item 2	<u>Δ R</u>	-10	+10	%
			Drift		R	or (2)		
00	Cold	Dave 0440	Initial Magazza		ΔR	- 1.0	+1.0	Ω
09	Cold	Para. 9.14.3	Initial Measurements Resonance Frequency	Toble 2 Item 4		Boro (1 11 1 2	
	The Array of the dash to the end of the decimal sequences of the second	and pure grant of contract of the contract of	Resonance Frequency	Table 2 Item 1 Table 2 Item 2	f A	Final Mag	9.14.1.3 asurements	أربين دو مرسيس
	·		Final Measurements	Table 2 ftcill 2	''	I I III WIGO	l	
			Resonance Frequency	Table 2 Item 1	<u>Δ f</u>	- 2.0	+ 2.0	10-6
		10.00	Drift	a tanage	f			
			Resonance Resistance	Table 2 Item 2	<u>∆ R</u>	-10	+10	%
			Drift		R	or (2)		
10	Damp Heat (Acclerated)	Para. 9.14.4	Initial Measurements		ΔR	-1.0	+ 1.0	Ω
100	Remaining Cycles	Fara. 9.14.4	Resonance Frequency		f	Para	9.14.3.2	
1		r e	Resonance Resistance		Ŕ		asurements	
			Final Measurements					
	·	*	Resonance Frequency	Table 2 Item 1	Δf	- 2.0	+ 2.0	10-6
		The second of the	Drift	MEREN ELLE	f	1.		
			Resonance Resistance	Table 2 Item 2	Δ <u>R</u>	- 10	+10	%
1			Drift		R ΔR	or (2) - 1.0	+ 1.0	Ω
Ė		* *	Insulation Resistance	Table 2 Item 8	Ri	500	- 1.0	MΩ
					- '''		L	
11	Rapid Change of	Para. 9.15	Initial Measurements		l .			
i	Temperature		Resonance Frequency Resonance Resistance		l f		9.14.4.2 asurements	
			Final Measurements	After minimum	"	וייייייייייייייייייייייייייייייייייייי	1501611161115	
				Recovery of 2 hours				
			Resonance Frequency	Table 2 Item 1	<u>∆ f</u>	- 2.0	+ 2.0	10-6
		2	Drift		f f			
			Resonance Resistance	Table 2 Item 2	ΔR	- 10	+10	%
			Drift	1	R	or (2)	1.40	
<u></u>					ΔR	-1.0	+1.0	Ω
12	Robustness of	Para. 9.16	Tensile Strength	Gen. 3501	, i			
	Terminations		\\C	Para. 9.16.1		1		
			Visual Examination Bending	No visible damage				
			Delicing	Gen. 3501 Para. 9.16.2				
		4 A	Visual Examination	No visible damage				
L			1	L	<u> </u>	1	L	<u> </u>

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	ISPECTIONS		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 Resonance Frequency Resonance Resistance Intermediate Measurements Resonance Frequency Drift Resonance Resistance Drift Intermediate Measurements	Table 2 Item 1 Table 2 Item 2	f R Δf f ΔR R ΔR	Table 2 Table 2 - 2.0 - 10 or (2) - 1.0	+ 2.0 + 10 + 1.0	10 ⁻⁶ % Ω
Company of the compan			(Chart IV) and Final Measurements (Chart V) Resonance Frequency Drift Resonance Resitance Drift Final Measurements (Chart IV) Resonance Frequency Drift	Table 2 Item 1 Table 2 Item 2 At 2000 hours Table 2 Item 1	Δ f f Δ R R ΔR Δ f f	-2.5 -10 or (2) -1.0	+2.5 +10 +1.0 +3.0	10-6 % Ω
			Resonance Resistance Drift	Table 2 Item 2	<u>Δ R</u> R ΔR	- 10 or (2) - 1.0	+10	%

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 1(a) - TYPE VARIANT DETAILED INFORMATION

			-	· · · · · ·	:	
No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	83.10	2493	MHz	Swept
2	Reference Temperature	T _o	+24	+26	°C	
3	Overtone Order	•	3	3		
4	Load Capacitance	CL	•	•	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-5.0	+ 5.0	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 over Top	∆R R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	<u>∆ f</u> f	Not app	olicable	10-6	: 1
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	plicable	%	
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	Not ap	plicable	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	Not applicable			
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	+3.0 +5.0	10-6	After burn-in, first year. Over 10 years.
19	Terminal Length	L	Figu	ire 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	<u> </u>			- 1		
No.	Characteristics	Symbol	Limit Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	· f _r	84.412668		MHz	Swept
2	Reference Temperature	To	+ 24	+26	°C	*10
3	Overtone Order	-	3			
4	Load Capacitance	CL	∞		pF	* : :
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-5.0	+5.0	10-6	At T _o °C
7	Resonance Resistance	R _r	-	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-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	%	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+70	°C	
11	Frequency variation with Drive Level	Δf f	Not app	licable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not app	licable	%	
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not app	olicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	Not app	olicable	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	+3.0 +5.0	E .	After burn-in, first year. Over 10 years.
19	Terminal Length	L	Figu	ire 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	90.83	3333	MHz	Swept
2	Reference Temperature	To	+ 24	+ 26	°C	
3	Overtone Order	. -	3			
4	Load Capacitance	CL	α		pF	4.5
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	At T _o °C
7	Resonance Resistance	R _r	-	19	Ω	At T _o °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 Top	<u>∆ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	•
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not app	olicable	10-6	as de la companya de
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	olicable	%	
13	Motional Inductance	L ₁	2.3	_	mH	
14	Motional Capacitance	- C ₁	Not ap	olicable	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	Rp/R IZpI/R	2:1	_		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	+3.0 +5.0	10-6	After burn-in, first year. Over 10 years.
19	Terminal Length	L	Figu	ıre 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

				······································	1	
No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	90.85	7143	MHz	Swept
2	Reference Temperature	- T _o	+ 24	+26	°C	
3	Overtone Order		3	3		
4	Load Capacitance	CL	•	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_{r}	-	19	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> 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	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	2.3	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	Mary Mary Comments of the Comm
15	Static Capacitance	Co	.=	7.0	pF	
16	Q Factor	Q	70 000	<u>-</u>	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R iZpi/R	2:1	-		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	1	4	After burn-in, first year. Over 10 years.
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	· f _r	90.88	0952	MHz	Swept
2	Reference Temperature	To	+24	+26	°C	
3	Overtone Order	-	3			
4	Load Capacitance	C _L	- A)	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+5.0	10-6	At T _o °C
7	Resonance Resistance	R _r	•	19	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 Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	and the second s
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	olicable	10 ⁻⁶	:
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	2.3	_	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	.Rp/R IZpI/R	2:1	. <u>-</u>		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	Δ f	-3.0 -5.0	1	10-6	After burn-in, first year. Over 10 years.
19	Terminal Length	L	Figi	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	The second secon	1				the state of the s
No.	Characteristics	Symbol -	Limi Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	50.	0	MHz	Swept
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	· .	3			
4	Load Capacitance	CL	∞) ;	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	At T _o °C
7	Resonance Resistance	R _r	e the se, where we se	23	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 over Top	<u>∆R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not app	olicable	10-6	N .
12	Resistance variation with Drive Level	ΔR R	Not app	olicable	%	
13	Motional Inductance	L ₁	8.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	110 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	2:1	-		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	∆ f f	-3.0	+3.0	10-6	After burn-in and per year
19	Terminal Length	L	Figu	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		·			·····	
No.	Characteristics	Symbol	Limi Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	f _r	85.412	2668	MHz	Swept, AT cut
2	Reference Temperature	To	+ 59	+ 71	°C	Maria de la Calendaria de Calendaria de la Calendaria de
3	Overtone Order	· _	5	14 - 1	1	
4	Load Capacitance	CL	· · · · · · · · · · · · · · · · · · ·		pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	At T _o °C
7	Resonance Resistance	R _r		50	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	-2.0	+2.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	+ 59	+ 71	°C	
11	Frequency variation with Drive Level	<u>Δ 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 app	olicable	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	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	∆ f f	-1.0	+1.0	10-6	After burn-in and over 10 years
19	Terminal Length	L	Figu	ire 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No. Characteristics Symbol limits Max. Unit Remarks 1. Resonance Frequency f _r 93,888095 MHz Swept 2. Reference Temperature T ₀ +23 +27 °C 3. Overtone Order - 3 - - 4. Load Capacitance C _L ∞ pF - 5. Rated Drive Level P ₀ 0.1 mW - - 6. Frequency Adjustment Tolerance Δf -5.0 +5.0 10-6 At T ₀ °C 7. Resonance Resistance R _r 17 Ω At T ₀ °C 8. Frequency Variation with Temperature over T _{0p} Δf -9.0 +9.0 10-6 From frequency measured at T ₀ °C 9. Resistance Variation with Temperature over T _{0p} To -20 +20 % From resistance measured at T ₀ °C 10. Operating Temperature Range To Not applicable 10-6 W 11.			18	g la			
2 Reference Temperature T₀ +23 +27 °C 3 Övertone Order - 3 - 4 Load Capacitance CL ∞ pF 5 Rated Drive Level P₀ 0.1 mW 6 Frequency Adjustment Tolerance Δf -5.0 +5.0 10-6 At T₀ °C 7 Resonance Resistance Rr -9.0 +9.0 10-6 From frequency measured at T₀ °C 8 Frequency Variation with Temperature over T₀₀ ΔR -20 +20 % From resistance measured at T₀ °C 9 Resistance Variation with Drive Level Δf Not applicable 10-6 Too °C 11 Frequency variation with Drive Level Δf Not applicable 10-6 with Drive Level Mr 12 Resistance variation with Drive Level AR Not applicable % with Drive Level Rr 13 Motional Inductance C₁ Not applicable % From the prequency range for the present of the present of the prese	No.	Characteristics	Symbol			Unit	Remarks
3 Overtone Order 4 Load Capacitance CL ∞ pF 5 Rated Drive Level P ₀ 6 Frequency Adjustment Tolerance 7 Resonance Resistance R _r 8 Frequency Variation with Temperature over T _{0p} 9 Resistance Variation with Temperature Pange 10 Operating Temperature Range 11 Prequency Variation with Drive Level 12 Resistance variation with Drive Level 13 Motional Inductance L ₁ 2.0 - mH 14 Motional Capacitance C ₀ R _E Not applicable Frequency Variation with Drive Level R _R Not applicable Frequency Variation with Drive Level R _R R _R Not applicable Frequency Variation with Drive Level R _R Not applicable Frequency Variation with Drive Level R _R Not applicable Frequency Variation with Drive Level R _R Not applicable Frequency Variation with Drive Level R _R Not applicable Frequency Variation with Drive Level R _R Not applicable Frequency Frequency From resistance measured at T ₀ °C C Top Pop Po Po Po Po Po Po Po Po	1	Resonance Frequency	f _r	93.988	3095	MHz	Swept
4 Load Capacitance C _L ∞ pF 5 Rated Drive Level P _O 0.1 mW 6 Frequency Adjustment Tolerance Δf -5.0 +5.0 10-6 At T _O °C 7 Resonance Resistance R _r 17 Ω At T _O °C 8 Frequency Variation with Temperature over T _{Op} -9.0 +9.0 10-6 From frequency measured at T _O °C 9 Resistance Variation with Temperature over T _{Op} -20 +20 % From resistance measured at T _O °C 10 Operating Temperature Range T _{Op} -20 +70 °C 11 Frequency variation with Drive Level ΔR Not applicable 10-6 12 Resistance variation with Drive Level ΔR Not applicable % 13 Motional Inductance L ₁ 2.0 mH 14 Motional Capacitance C ₁ Not applicable fF 15 Static Capacitance C ₁ Not applicable fF 15 Static Capacitance C ₁ Not applicable fF 16 Q Factor Q 70 000 - 17 Ratio of Unwanted: Response Resistance to Resonance Resistance Resista	2	Reference Temperature	T _o	+ 23	+27	°C	
Rated Drive Level Po 0.1 mW	3	Overtone Order	-	3			
6 Frequency Adjustment Tolerance Δf f -6.0 +5.0 10-6 At To °C 7 Resonance Resistance Rr 17 Ω At To °C 8 Frequency Variation with Temperature over Top Δf f -9.0 +9.0 10-6 From frequency measured at To °C 9 Resistance Variation with Temperature over Top ΔR R -20 +20 % From resistance measured at To °C 10 Operating Temperature Range Top -20 +70 °C °C 11 Frequency variation with Drive Level Δf f Not applicable 10-6 12 Resistance variation with Drive Level ΔR R Not applicable % 13 Motional Inductance L1 2.0 - mH 2.0 - mH 14 Motional Capacitance C1 Not applicable fF 15 Static Capacitance C0 - 3.0 pF In the frequency range: fr -50kHz to measured at To °C 17 Ratio of Unwanted: Response Resistance or Resistance or Resistance or Resistance or Resistance Resistance or Resistance Resistance or Resistance Resistance or Resistance or Resistance Resistance or Resis	4	Load Capacitance	C _L	8		pF	
Tolerance 7 Resonance Resistance R _r 17 Q At T _o °C 8 Frequency Variation with Temperature over T _{op} 9 Resistance Variation with Temperature over T _{op} 10 Operating Temperature Range 11 Frequency variation with Drive Level 12 Resistance variation with Drive Level 13 Motional Inductance 14 Motional Capacitance 15 Static Capacitance 16 Q Factor 17 Ratio of Unwanted: Response Resistance to Resonance Resistance 0	5	Rated Drive Level	Po	0.	1	mW	
8 Frequency Variation with Temperature over Top Δ f f -9.0 + 9.0 10-6 From frequency measured at To °C 9 Resistance Variation with Temperature over Top Δ R R -20 + 20 % From resistance measured at To °C 10 Operating Temperature Range Top -20 + 70 °C °C 11 Frequency variation with Drive Level Δ f f Not applicable 10-6 12 Resistance variation with Drive Level Δ R R Not applicable % 13 Motional Inductance L₁ 2.0 - mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 3.0 pF 16 Q Factor Q 70 000 17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Resonance Resistance Rp/R 2:1	6		<u>Δ f</u> f		+ 5.0	10-6	At To °C
with Temperature over Top f measured at To °C 9 Resistance Variation with Temperature over Top ΔR/R -20 +20 % From resistance measured at To °C 10 Operating Temperature Range Top -20 +70 °C 11 Frequency variation with Drive Level Δf/f Not applicable 10-6 12 Resistance variation with Drive Level ΔR/R Not applicable % 13 Motional Inductance L₁ 2.0 - mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 3.0 pF 16 Q Factor Q 70 000 - - 17 Ratio of Unwanted: Response Resistance or Response Resistance or Response Impedance to Resonance Resistance Rp/R 2:1 - In the frequency range: f _r -50kHz to fr, +50kHz 18 Ageing Δf/f -3.0 +3.0 10-6 After burn-in, first year. Over 10 years.	7	Resonance Resistance	R _r		17	Ω	At To °C
with Temperature over Top R measured at T₀ °C 10 Operating Temperature Range Top -20 +70 °C 11 Frequency variation with Drive Level Δ f f Not applicable 10-6 12 Resistance variation with Drive Level Δ R R Not applicable % 13 Motional Inductance L₁ 2.0 - mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 3.0 pF 16 Q Factor Q 70 000 - - 17 Ratio of Unwanted: Response Resistance or Resistance or Resonance Resistance or Resonance Resistance or Resonance Resistance Resistance or Resonance Resistance 2:1 - - 18 Ageing Δ f f f -3.0 +3.0 10-6 After burn-in, first year. Over 10 years.	8	with Temperature	<u>Δ f</u> f	-9.0	+ 9.0	10-6	
Range	9	with Temperature	ΔR R	-20	+20	%	1
with Drive Level f 12 Resistance variation with Drive Level ΔR/R Not applicable % 13 Motional Inductance L₁ 2.0 - mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 3.0 pF 16 Q Factor Q 70 000 - - 17 Ratio of Unwanted: Response Resistance or Resistance or Resonance Resistance or Resonance Resistance Rp/R 2:1 - In the frequency range: f _r -50kHz to f _r +50kHz 18 Ageing Δf / f -3.0 +3.0 10-6 After burn-in, first year. Over 10 years.	10		T _{op}	-20	+ 70	°C	en e
with Drive Level R	11		$\frac{\Delta f}{f}$	Not app	olicable	10 ⁻⁶	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	12		<u>Δ R</u> R	Not app	olicable	%	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	13	Motional Inductance	L ₁	2.0	-	mH	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14	Motional Capacitance	C ₁	Not app	olicable	fF	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	15	Static Capacitance	Co	-	3.0	pF	
Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	16	Q Factor	Q	70 000		-	
f -5.0 +5.0 Over 10 years.	17	Response Resistance to Resonance Resistance or Response Impedance to	1	2:1			range: f _r -50kHz to
19 Terminal Length L Figure 2 mm	18	Ageing	$\frac{\Delta f}{f}$		i	10-6	
	19	Terminal Length	L	Figu	ire 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	94.	.0	MHz	Swept
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	_	3			
4	Load Capacitance	CL	α) , ·	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-5.0	+ 5.0	10 ⁻⁶	At To °C
7	Resonance Resistance	R _r	-	17	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 over Top	<u>Δ R</u>	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°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	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co		3.0	pF	
16	Q Factor	Q	70 000	-		
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1			In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0			After burn-in, first year. Over 10 years.
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	, f _r	94.09	5238	MHz	Swept
2	Reference Temperature	T _o	+23	+ 27	°C	
3	Overtone Order	-	3			
4	Load Capacitance	CL	α)	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-5.0	+5.0	10 ⁻⁶	At To °C
7	Resonance Resistance	R _r		17	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	-9.0	+ 9.0	10-6	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	ΔR R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not app	olicable	10-6	
12	Resistance variation with Drive Level	ΔR 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	-	3.0	pF	
16	Q Factor	Q	70 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	_		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	1	10-6	After burn-in, first year. Over 10 years.
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		4.14				
No.	Characteristics	Symbol -	Limi Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	f _r	94.10	7143	MHz	Swept
2	Reference Temperature	To	+23	+27	°C	
3	Overtone Order		3			
4	Load Capacitance	CL	∞		pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u>	-5.0	+ 5.0	10-6	At To °C
7	Resonance Resistance	R _r	<u>-</u>	17	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-9.0	+ 9.0	10 ⁻⁶	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	10-6	
12	Resistance variation with Drive Level	<u>Δ 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	-	3.5	pF	
16	Q Factor	Q	70 000		-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -50kHz to f _r +50kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	1		After burn-in. Over 10 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limi Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	fL	18.88	375	MHz	
2	Reference Temperature	T _o	+ 2	25	°C	18.00
3	Overtone Order	- -	Fundan	nental		
4	Load Capacitance	CL	32	2	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-5.0	+ 5.0	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_{L}	-	21	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-7.0	+7.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not app	olicable	%	
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	. et
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not app	olicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	olicable	%	
13	Motional Inductance	L ₁	-	6.93	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	3.0	pF	
16	Q Factor	Q	60 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpi/R	3:1	_		In the frequency range: f _L -200kHz to f _L + 200kHz
18	Ageing	∆ f f	-5.0	+5.0	10-6	After:burn-in, per year
19	Terminal Length	L	Figu	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

					·	
No.	Characteristics	Symbol -	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	fr	16.	.0	MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	· •	Fundan	nental	t	
4	Load Capacitance	C _L	α)	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	-	18	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-15	+ 15	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10 o -1.5		% Ω	From resistance measured at T_0 °C If R < 10 Ω
10	Operating Temperature Range	T _{op}	-40	+ 85	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	.%	
13	Motional Inductance	L ₁	7.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	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 IZpI/R	2:1	-		In the frequency range: f _r -200kHz to f _r + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	After burn-in, per year
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	fL	24.6862		MHz	
2	Reference Temperature	T _o	+23	+ 27	°C	
3	Overtone Order	- - -	Fundar	nental		
4	Load Capacitance	CL	. 3	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_L	•	10	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-10	+10	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	Δ <u>R</u> R	Not ap	plicable	%	
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	2.7	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	40 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	4:1 5:1	-		In the frequency range: fL -50kHz to fL + 50kHz Overtones 3 and 5
18	Ageing	$\frac{\Delta f}{f}$	-2.9	+ 2.9	10-6	After burn-in, over 4 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

						1
No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	110.0	110.045		Swept.
2	Reference Temperature	T _o	+ 23	+ 27	°C	
3	Overtone Order	: -	5			AT cut.
4	Load Capacitance	C _L	α) .	pF.	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10 ⁻⁶	At To °C
7	Resonance Resistance	R _r	· -	45	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	-10	+10	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-10	+ 10	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	4.5	5.5	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	3.0	pF	
16	Q Factor	Q	80 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	2:1	-		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	Δ f f	-0.5 -1.0	1	10-6	First year after burn-in. Over 5 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	fL	110.765		MHz	Swept
2	Reference Temperature	То	+ 23	+ 27	"C	
3	Overtone Order	· -	5			AT cut
4	Load Capacitance	CL	α) :	pF	
5	Rated Drive Level	P _o	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-5.0	+5.0	10 ⁻⁶	At To °C
7.	Resonance Resistance	R _r	_	45	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 with Temperature over Top	ΔR R	-10	+10	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	4.5	5.5	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	•	3.0	pF	
16	Q Factor	Q	80 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -50kHz to f _r + 50kHz
18	Ageing	Δ f	-0.5 -1.0		1	First year after burn-in. Over 5 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

					:	
No.	Characteristics	Symbol	Limi Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	fL	27.	5	MHz	
2	Reference Temperature	To	+ 23	+ 27	°C;	
3	Overtone Order	_	Fundan	nental		
4	Load Capacitance	C _L	: , 30)	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δf f	-10	+10	10 ⁻⁶	At T _o °C
. 7	Resonance Resistance	R _r		20	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-10	+10	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-10	+10	%	From resistance measured at T _o °C
10	Operating Temperature Range	Тор	-20	+ 50	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not app	olicable	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	80 000	-	-	4
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	_		In the frequency range: f _L -10% to f _L + 10%
18	Ageing	<u>Δ f</u>	-10	+10	10-6	Over 10 years
19	Terminal Length	L	Fig	ure 2	mm	
-						

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		111				
No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	98.85	2381	MHz	
2	Reference Temperature	T _o	+ 20	+30	°C	
3	Overtone Order	_	\$ 5			
4	Load Capacitance	CL	α		pF	100
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	At To °C
7	Resonance Resistance	R _r		50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> 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	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-25	+ 70	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not ap	olicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u>	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C _o	- /	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 IZpI/R	2:1	-		In the frequency range: f _r -10% to f _r + 10%
18	Ageing	Δf f	-3.0 -5.0	+3.0 +5.0	10-6	After burn-in, first year. Over 10 years
19	Terminal Length	L	Figi	ure 2	mm	
						

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

_		* .					*
	No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
	1	Resonance Frequency	f _r	92.84	6032	MHz	
Ī	2	Reference Temperature	To	+ 20	+30	°C	
ſ	3	Overtone Order	_	5	11.		
	4	Load Capacitance	CL	α		pF	
	5	Rated Drive Level	P _o	0.	1	mW	
	6	Frequency Adjustment Tolerance	Δ <u>f</u>	-5.0	+5.0	10 ⁻⁶	At To °C
	7	Resonance Resistance	R _r	-	50	Ω	At To °C
F1-6	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 Top	ΔR R	-20	+20	%	From resistance measured at T _o °C
	10	Operating Temperature Range	T _{op}	-25	+ 70	°C	
	11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	10 ⁻⁶	
	12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	olicable	%	
	13	Motional Inductance	L ₁	6.5	<u>-</u>	mH	
	14	Motional Capacitance	C ₁	Not ap	plicable	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	2:1	<u>-</u>		In the frequency range: f _r -10% to f _r + 10%
	18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	+3.0 +5.0	10-6	After burn-in, first year. Over 10 years
	19	Terminal Length	L	Figu	ıre 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		·····				
No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	88.134921		MHz	PQ swept
2	Reference Temperature	То	+ 20	+30	°C	
3	Overtone Order	-	5			
4	Load Capacitance	CL	∞ ∞		pF	1.00
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-5.0	+ 5.0	10 ⁻⁶	At To °C
7	Resonance Resistance	R _r	-	50	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-9.0	+ 9.0	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	<u>-</u>	7.0	pF	
16	Q Factor	Q	70 000	_	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -8 000kHz to f _r +8 000kHz
18	Ageing	<u>Δ f</u>	-3.0 -5.0	1	10-6	After burn-in, first year. Over 10 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

				<u> </u>		
No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	84	.0	MHz	
2	Reference Temperature	T _o	+ 65	+ 75	°C	Turn-on Point
3	Overtone Order	- -	3			
4	Load Capacitance	CL	α) . i.	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-5.0	+ 5.0	10-6	At T _o °C
7	Resonance Resistance	R _r	•	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	Not ap	plicable	10 ⁻⁶	
9	Resistance Variation with Temperature over Top	ΔR R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 80	°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	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	Rp/R	2:1	-		In the frequency range: f _r -8 000kHz to f _r + 8 000kHz
18	Ageing	Δf f	-5.0	+5.0	10-6	After burn-in and over 10 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	15	.0	MHz	
2	Reference Temperature	To	+ 23	+27	°C	
3	Overtone Order	_	Funda	mental		
4	Load Capacitance	CL	18	32	pF	
5	Rated Drive Level	Po	0.	1	mW .	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	Not app	olicable	10 ⁻⁶	
7	Resonance Resistance	R _r	-	100	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	Δf f	-40	+ 40	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	Not ap	plicable	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-55	+ 105	°C	
11	Frequency variation with Drive Level	∆ f f	Not ap	plicable	1.10-6	
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	-	7.0	pF	
16	Q Factor	Q	80 000	-	<u>-</u>	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _L -200kHz to f _L + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	-2.0	+2.0	10-6	After burn-in, per year
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	40.	.0	MHz	Swept
2	Reference Temperature	T _o	+36	+ 44	۰C	
3	Overtone Order	-	3			
4	Load Capacitance	CL	α)	pF	
5	Rated Drive Level	Po	o.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-10	+10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R _r	10	25	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	-15	+ 15	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10	+10	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	0	+ 90	°C	1 1 1
11	Frequency variation with Drive Level	<u>∆ f</u>	-1.0	+ 1.0	10 ⁻⁶	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.2 \text{mW}$
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	5.0	-	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	Rp/R	4:1	-	- -	In the frequency range: f _r -50kHz to f _r + 50kHz
	Response Resistance Response Resistance	Rp Rp	2.5 25	-	Ω Ω	Fundamental Overtone 5
18	B Ageing	Δf f	-5.0	+5.0	10-6	After burn-in over 5 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

1						
No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	29.6296		MHz	
2	Reference Temperature	T _o	+ 36	+ 44	°C	
3	Overtone Order	-	Fundan	nental		
4	Load Capacitance	CL	8		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	2.5	15	Ω 1	Over T _{op} °C and drive level
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-30	+30	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	Δ <u>R</u> R	-10 o -1.5	+10 r +1.5	% Ω	From resistance measured at T _o °C If R < 10Ω
10	Operating Temperature Range	T _{op}	0	+ 90	°C	
11	Frequency variation with Drive Level	Δ f	-1.0	+ 1.0	10 ⁻⁶	From $P_{S1} = 0.025 \text{mW}$ to $P_{S2} = 0.2 \text{mW}$
12	Resistance variation with Drive Level	ΔR R	Not app	olicable	%	
13	Motional Inductance	L ₁	2.8	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	60 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or	Rp/R	4:1	_	· .	In the frequency range: f _r -50kHz to f _r + 50kHz
	Response Resistance	Rp	30	-	Ω	Overtone 3
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Per year after burn-in
19	Terminal Length	L	Figi	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

						the state of the s
No.	Characteristics	Symbol	Lim Min.	iits Max.	Unit	Remarks
1	Resonance Frequency	f _r	32	.0	MHz	Synthetic swept, Premium Q
2	Reference Temperature	T _o	+ 23	+ 27	.c	Inflection temp. point
3	Overtone Order		3	3		A/T cut
4	Load Capacitance	CL	α	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	45	30	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-10	+10	10 ⁻⁶	From frequency measured at T _o °C One measurement each 2.5°C
9	Resistance Variation with Temperature over Top	ΔR R	-10	+10	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	Not ap	plicable	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	-5.0	+5.0	10-6	After burn-in and per year
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol -	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	14.7456		MHz	
2	Reference Temperature	T _o	+23	+27	°C	
3	Overtone Order	-	Fundan	nental		A/T cut
4	Load Capacitance	CL	00	,	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	3.0	15	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	∆ f f	-25	+ 25	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-1.0	+ 1.0	Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-55	+ 105	°C	
11	Frequency variation with Drive Level	Δ <u>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	-	7.0	pF	
16	Q Factor	Q	80 000		-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -200kHz to f _r + 200kHz
18	Ageing	- <u>Δ f</u>	-2.0	+2.0	10-6	Per year after burn-in
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limi Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	fL	12.2	25	MHz	Parallel resonance
2	Reference Temperature	To	+ 23	+27	°C	
3	Overtone Order	-	Fundan	nental		A/T cut
4	Load Capacitance	C _L	32	2	pF	
5	Rated Drive Level	Po	0.	5	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-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	<u>∆ f</u> f	-10	+ 10	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-50	+50	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-30	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10-6	
12	Resistance variation with Drive Level	ΔR R	-25	+ 25	%	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.2$ mW
13	Motional Inductance	L ₁	27	33	mH	
14	Motional Capacitance	C ₁	5.04	6.16	fF	
15	Static Capacitance	Co	-	4.0	pF	
16	Q Factor	Q	30 000	_	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpi/R	2:1	-		In the frequency range: f _L -500kHz to f _L + 500kHz
18	Ageing	$\frac{\Delta f}{f}$	-10	+10	10-6	After burn-in over 10 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limi Min.	ts Max.	Unit	Remarks
Time I was	Resonance Frequency	j∷ f∟	4.09	96	MHz	
2	Reference Temperature	T _o	+ 22	+ 28	°C	
3	Overtone Order		Fundan	nental	1	
4	Load Capacitance	CL	25		pF	
5	Rated Drive Level	Po	0.2	2	mW	
6	Frequency Adjustment Tolerance	Δ f	-10	+10	10 ⁻⁶	At To °C
7	Resonance Resistance	R _r	-	75	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-50	+ 50	10 ⁻⁶	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-55	+ 100	°C	er p _e
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10 ⁻⁶	1
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not applicable		%	
13	Motional Inductance	L ₁	313	348	mH	
14	Motional Capacitance	C ₁	4.34	4.82	fF	
15	Static Capacitance	Co	1.5	2.0	pF	
16	Q Factor	Q	130 000		•	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	10:1	.		In the frequency range: f _L -100kHz to f _L + 100kHz
18	Ageing	<u>∆ f</u>	-10	+10	10 ⁻⁶	2 years at rated drive level
19	Terminal Length	L	Figi	ure 2	mm .	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	31.99	31.999305		
2	Reference Temperature	T _o	+23	+ 27	°C	
3	Overtone Order	-	3			
4	Load Capacitance	C _L	α).	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	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	-10	+10	10 ⁻⁶	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10	+ 10	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+60	°C	
11	Frequency variation with Drive Level	<u>∆ f</u>	Not ap	olicable	10-6	
12	Resistance variation with Drive Level	Δ <u>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	-	7.0	pF	
16	Q Factor	Q	50 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	2:1	<u>-</u>		In the frequency range: f _r -200kHz to f _r + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	-1.0	+1.0	10-6	After burn-in per year.
19	Terminal Length	L	Figu	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	74.80	1912	MHz	
2	Reference Temperature	T _o	+ 20	+ 30	°C,	in the second se
3	Overtone Order	-	3	1 4.1		
4	Load Capacitance	CL	α	3	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}	-	50	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 over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	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	2:1	-		In the frequency range: f _r -7482kHz to f _r + 7482kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	1	10 ⁻⁶	After burn-in, first year. Over 10 years
19	Terminal Length	L	Figi	ure 2	mm	
						

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	fr	78.21	7213	MHz	
2	Reference Temperature	T _o	+ 20	+ 30	°C	
3	Overtone Order		3			
4	Load Capacitance	CL	α		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	-	50	Ω	At T _o °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 Top	<u>∆R</u> R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	Δ <u>f</u>	Not ap	olicable	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 ap	plicable	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	2:1	_		In the frequency range: f _r -7822kHz to f _r + 7822kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	+3.0 +5.0	10-6	After burn-in, first year. Over 10 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

						1
No.	Characteristics	Symbol	Limi Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	f _r	81.66	667	MHz	
2	Reference Temperature	To	+ 65	+ 75	°C	
3	Overtone Order	-	3			
4	Load Capacitance	CL	00		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 T _o °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	Not app	olicable	10 ⁻⁶	
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not app	olicable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not ap	olicable	%	
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	2:1	. <u>-</u>		In the frequency range: f _r -8166kHz to f _r +8166kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0	1	10-6	After burn-in, first year. Over 10 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limi Min.	ts Max.	Unit	Remarks
1	Resonance Frequency	f _r	81.800	0766	MHz	
2	Reference Temperature	To	+ 65	+ 75	°C	
3	Overtone Order	-	3			
4	Load Capacitance	C_L	00		pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δf f	-10	+10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R _r	- .	40	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	∆ f f	Not app	olicable	10-6	
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 80	°C	·.
11	Frequency variation with Drive Level	<u>Δ f</u> f	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 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 IZpI/R	2:1			In the frequency range: f _r -8180kHz to f _r + 8180kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0 -5.0		10-6	After burn-in, first year. Over 10 years
19	Terminal Length	L	Fig	ure 2	mm	
						

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	90.869921		MHz	
2	Reference Temperature	T _o	+20	+ 30	° C	
3	Overtone Order	_	5			
4	Load Capacitance	CL	ox) ig	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 _r	- -	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-9.0	+ 9.0	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	3.0	. pF	
16	Q Factor	Q	90 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	2:1	_		In the frequency range: f _r -9000kHz to f _r + 9000kHz
18	Ageing	$\frac{\Delta f}{f}$	-5.0	+5.0	10-6	After burn-in and 10 years
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

						
No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	85.41	2668	MHz	
2	Reference Temperature	T _o	+ 59	+ 71	°C	to the state of th
3	Overtone Order	-	5	5		
4	Load Capacitance	CL	٥	0	pF	
5	Rated Drive Level	Po	0.	1	mW	:
6	Frequency Adjustment Tolerance	Δf f	-5.0	+ 5.0	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R _r		45	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	-2.0	+2.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	∆R R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-59	+ 71	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	10 ⁻⁶	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	plicable	%	
13	Motional Inductance	L ₁	2.0	-	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	Rp/R IZpI/R	2:1	-		
18	Ageing	∆ f f	-1.0	+1.0	10-6	After burn-in and 10 years
19	Terminal Length	L	Figu	ıre 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	140	0.0	MHz	
2	Reference Temperature	T _o	+ 23	+ 27	°C	
3	Overtone Order		5	5		
4	Load Capacitance	CL	•	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	0	70	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf f	-15	+ 15	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	: · · · · · · ·
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	0	7.0	рF	
16	Q Factor	Q	70 000	•	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	2:1	· •		In the frequency range: f _r -200kHz to f _r + 200kHz
18	Ageing	∆ f f	-3.0	+3.0	10 ⁻⁶	After burn-in, per year
19	Terminal Length	L	Figi	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

						1
No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	81.54	81.544502		
2	Reference Temperature	T _o	+62	+ 72	°C	
3	Overtone Order	<u>-</u>	4 · 3			
4	Load Capacitance	CL	(₁))	pF	
5	Rated Drive Level	Po	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	<u>∆ f</u> f	Not app	olicable	10 ⁻⁶	
9	Resistance Variation with Temperature over Top	ΔR R	-20 c -2.0	+ 20 er + 2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not app	olicable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not ap	olicable	%	
13	Motional Inductance	L ₁	2.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	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	Rp/R IZpI/R	2:1			In the frequency range: f _r -8100kHz to f _r + 8100kHz
18	Ageing	<u>∆ f</u>	-3.0	+ 3.0	10-6	After burn-in, over 10 years
19	Terminal Length	L	Figu	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

1		-	i Bi			
No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	f _r	81.63	2653	MHz	
2	Reference Temperature	T _o	+ 60	+ 70	°C	
3	Overtone Order	- -	3			
4	Load Capacitance	CL	α)	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>Δ f</u> f	Not app	olicable	10-6	
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	T _{op}	-20	+ 80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	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 ap	olicable	fF	
15	Static Capacitance	Co	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	Rp/R	2:1	-		In the frequency range: f _r -8163kHz to f _r + 8163kHz
18	3 Ageing	<u>∆ f</u>	-3.0 -5.0	+ 3.0 + 5.0	10-6	After burn-in, first year. Over 10 years
19	Terminal Length	L	Figu	ıre 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
1	Resonance Frequency	fլ	2	0	MHz	
2	Reference Temperature	T _o	+ 23	+ 27	°C,	
3	Overtone Order	* -	Fundar	mental		
4	Load Capacitance	CL	3:	2	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	RL	-	30	Ω	Over T _{op}
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-20	+20	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10 or -20	+10 or +20	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-30	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q 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	2:1	-		In the frequency range: f _L -200kHz to f _L + 200kHz
18	Ageing	<u>∆ f</u>	-2.0	+2.0	10-6	Per year after Burn-in.
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		· · · · · · · · · · · · · · · · · · ·					
	No.	Characteristics	Symbol	Lim Min.	its Max.	Unit	Remarks
l	1	Resonance Frequency	f _r	83.13	3333	MHz	
Ī	2	Reference Temperature	T _o	+ 60	+ 70	°C,	
Ī	3	Overtone Order	-	3			
	4	Load Capacitance	CL	α	o į	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 T _o °C
	8	Frequency Variation with Temperature over Top	<u>∆</u> f	Not ap	olicable	10-6	
	9	Resistance Variation with Temperature over Top	ΔR R	-20	+20	%	From resistance measured at T _o °C
	10	Operating Temperature Range	T _{op}	-25	+80	°C	
	11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
	12	Resistance variation with Drive Level	ΔR 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	2:1	-		In the frequency range: f _r -500kHz to f _r + 500kHz
	18	Ageing	- <u>Δ f</u>	-5.0	+5.0	10-6	13 years after Burn-in - Exterpolated
	19	Terminal Length	L	Figi	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			1			
No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	հ ք լ	16	.0	MHz	
2	Reference Temperature	T _o	+ 23	+ 27	°C	
3	Overtone Order	-	Fundar	mental		
4	Load Capacitance	CL	3	0	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_{L}		20	Ω	Over T _{op}
8	Frequency Variation with Temperature over Top	<u>∆</u> f f	-30	+30	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-22	+ 90	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	pF	
16	Q Factor	Q	Not a	pplicable	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	Not ap	plicable		
18	Ageing	<u>∆ f</u>	-30	+30	10-6	Per year after Burn-in
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

Na	Charactariatica	Cumbal	Lim	its	Unit	Remarks
No.	Characteristics	Symbol -	Min.	Max.	Onit	nemarks
1	Resonance Frequency	f _r	20	20.0		
2	Reference Temperature	То	+ 23	+ 27	°C	10 10 10 10 10 10 10 10 10 10 10 10 10 1
3	Overtone Order	-	Fundar	nental		
4	Load Capacitance	CL	·)	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	-	30	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	- 100	+ 100	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20 or -2.0	+20 or +2.0	%	From resistance measured at T_0 °C If $R \le 10\Omega$
10	Operating Temperature Range	T _{op}	-30	+ 95	°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	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	·
16	Q Factor	Q	100 000	- :-	-	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
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 - 200kHz to f _r + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	-2.0	+ 2.0	10-6	Per year after Burn-in
19	Terminal Length	L	Fig	ure 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	.					1 2
No.	Characteristics	Symbol	Lim	its	Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	f _r	83.31	2841	MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	-	3			
4	Load Capacitance	CL	α)	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	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f f	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	¹ / ₂ °C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	olicable	10-6	1 N 1
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 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 - 8331kHz to f _r + 8331kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Figu	ıre 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		·	L VALUATIV			
No.	Characteristics	Symbol Limits		Unit	Remarks	
NO.	Characteristics	Symbol	Min.	Max.	Offic	nemarks
1	Resonance Frequency	f _r	83.31	6257	MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	t 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	-	50	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f f	0 -9.0 -9.0	+9.0 +9.0 0	10-6	From T - 25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	, °C	
11	Frequency variation with Drive Level	<u>∆ 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	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	2:1	-		In the frequency range: f _r - 8331kHz to f _r + 8331kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Fig	ure 2	mm	
				· · · · · · · · · · · · · · · · · · ·	·	·• · · · · · · · · · · · · · · · · · ·

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

				1		
Nia	Characteristics	Company of	Lim	its	11-2	Domorko
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	83.31	9672	MHz	
2	Reference Temperature	To	+ 20	+30	۰C	
3	Overtone Order	:- <u>-</u>	3	3		
4	Load Capacitance	CL	, 0	0	рF	
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	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf f	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	- 20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	e la
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	2.0	· <u>-</u> ·	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 - 8331kHz to f _r + 8331kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Figi	ıre 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r		83.326503		
2	Reference Temperature	To	+ 20	+30	MHz °C	
3	Overtone Order	•	1 3	3		
4	Load Capacitance	CL	α	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	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T -25 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	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	∆ f 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	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	2:1	<u>-</u>		In the frequency range: f _r - 8332kHz to f _r + 8332kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Figi	ure 2	mm	
	· · · · · · · · · · · · · · · · · · ·					

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	ito	· · · · · · · · · · · · · · · · · · ·	
No.	Characteristics	Symbol			Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	f _r	83.34	0164	MHz	
2	Reference Temperature	T _o	+ 20	+ 30	°C	
3	Overtone Order	-	. 3			
4	Load Capacitance	C _L	α		pF	ar vin de Side
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	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u>	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T - 25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	Δf f	Not ap	olicable	1076	la i
12	Resistance variation with Drive Level	<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	2:1	-		In the frequency range: f _r - 8334kHz to f _r + 8334kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Figu	ure 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

4		111	1.5	,		
Na	Characteristics	0	Lim	its	11	n
No.	Characteristics	Symbol -	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	83.34	6994	MHz	
2	Reference Temperature	T _o	+ 20	+ 30	°C	
3	Overtone Order	1,41 -	S			10.0
4	Load Capacitance	CL	ð) · .	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	- 10	+ 10	10-6	At To °C
7	Resonance Resistance	R_r	#M.J.	50	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	Δf f	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T - 25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	∆R R	- 20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	olicable	.;i.10⊤6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	,
13	Motional Inductance	L ₁	2.0	- <u>-</u>	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 - 8334kHz to f _r + 8334kHz
18	Ageing	∆ f f	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Figu	ıre 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

]			Lim	nits		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	83.35	3825	MHz	
2	Reference Temperature	To	+ 20	+30	°C	
3	Overtone Order	· · ·	3	3		.44 Jan
4	Load Capacitance	CL	•	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 T _o °C
7	Resonance Resistance	R _r	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T - 25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	∆R R	-20	+ 20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	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	2:1	-		In the frequency range: f _r - 8335kHz to f _r + 8335kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Fig	ure 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Limits					
No.	Characteristics	Symbol	Υ		Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	f _r	83.36	0656	MHz	
2.	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	· -	3			
4	Load Capacitance	CL	∝)	pF	S
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	_	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf f	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T - 25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	- 20	+ 20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	a : 4
12	Resistance variation with Drive Level	<u>Δ 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	2:1	-		In the frequency range: f _r - 8336kHz to f _r + 8336kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 720 hours
19	Terminal Length	L	Figu	ure 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

						1 - 1
No.	Characteristics	Cymphol	Lim	its	1 1-4	Remarks
NO.	Characteristics	Symbol	Min.	Max.	Unit	Hemarks
1	Resonance Frequency	f _r	45.0)56	MHz	
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order	-	3	,		
4	Load Capacitance	CL	α)	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u> f	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	- ,	23	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	olicable	10-6	ed :
12	Resistance variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	8.0	· -	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	_	7.0	pF	
16	Q Factor	,Q	110 000	-	-	
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 - 4500kHz to f _r + 4500kHz
18	Ageing	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	10 years after Burn-in
19	Terminal Length	L	Figu	ıre 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

NIa	Observatoristics	Cumbal	Lim	its	l lait	Domarko
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	78.24	7951	MHz	
2	Reference Temperature	T _o	+ 20	+ 30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	•	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	•	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>∆R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+70	°C	
11	Frequency variation with Drive Level	<u>Δ 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	6.5	-	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 - 7824kHz to f _r + 7824kHz
18	Ageing	$\frac{\Delta f}{f}$	-5.0	+5.0	10-6	10 years after Burn-in
19	Terminal Length	L	Fig	ure 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol Limits		Unit	Remarks		
NO.	Characteristics	Symbol	Min.	Max.	Offic	Hemans	
1	Resonance Frequency	f _r	78.21	3798	MHz		
2	Reference Temperature	T _o	+ 20	+ 30	°C		
3	Overtone Order	-	3	3			
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 T _o °C	
7	Resonance Resistance	R _r	-	50	Ω	At T _o °C	
8	Frequency Variation with Temperature over Top	Δf f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T - 25 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	+ 20	%	From resistance measured at T _o °C	
10	Operating Temperature Range	Тор	- 25	+ 70	°C	3 ¹ 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
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	6.5	-	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 !Z _p l/R	2:1			In the frequency range: f _r - 7821kHz to f _r + 7821kHz	
18	Ageing	Δf f	-5.0	+ 5.0	10-6	10 years after Burn-in	
19	Terminal Length	L	Figi	ure 2	mm		
							



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		·				
No.	Ob avanta vintina	O. mah al	Lim	its		
NO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	78.22	78.227459		, ristr
2	Reference Temperature	T _o	+20	+ 30	°C	
3	Overtone Order	<u>-</u>		B		
4	Load Capacitance	CL	٥	ָם. יי	pF	
5	Rated Drive Level	Po	· 0.	1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u> f	- 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>∆ f</u> f	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	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 - 7822kHz to f _r + 7822kHz
18	Ageing	$\frac{\Delta f}{f}$	- 5.0	+5.0	10-6	10 years after Burn-in
19	Terminal Length	L	Figu	re 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its			
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks	
1	Resonance Frequency	f _r	78.220628		MHz	100	
2	Reference Temperature	To	+ 20	+30	°C		
3	Overtone Order	· -	. 3				
4	Load Capacitance	CL	α)	pF		
5	Rated Drive Level	Po	0.	1	mW	1. No. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At T _o °C	
7	Resonance Resistance	R _r	-	50	Ω	At To °C	
8	Frequency Variation with Temperature over Top	Δf f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T - 25 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	+20	%	From resistance measured at T _o °C	
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C		
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	olicable	10-6		
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	olicable	%		
13	Motional Inductance	L ₁	6.5	· <u>-</u> .	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 - 7822kHz to f _r + 7822kHz	
18	Ageing	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	10 years after Burn-in	
19	Terminal Length	L	Figu	ire 2	mm		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			· · · · · · · · · · · · · · · · · · ·			
NI-	Ohavaataviatiaa	Cymahal	Lim	its	Unit	Remarks
No.	Characteristics	Symbol -	Min.	Max.	Offic	Nemarks
1	Resonance Frequency	f _r	81.66	6667	MHz	
2	Reference Temperature	To	+ 62	+ 72	°C	
3	Overtone Order	-	5			
4	Load Capacitance	CL	00	· ·	рF	
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	-	45	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	Not app	olicable	10-6	Action of Congress
9	Resistance Variation with Temperature over Top	ΔR R	- 20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	
11	Frequency variation with Drive Level	<u>Δ 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	8.0	-	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	2:1	- -		In the frequency range: f _r - 8166kHz to f _r + 8166kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L	Figu	ure 2	mm	·

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Limits			T		
No.	Characteristics	Symbol			Unit	Remarks
		.4	Min.	Max.		
1	Resonance Frequency	f _r	121.71	4286	MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	34. 注意:
3	Overtone Order	-	5			
4	Load Capacitance	CL	, α		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	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf f	- 8.0	+8.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 20	+ 70	°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	plicable	%	1 N
13	Motional Inductance	L ₁	Not ap	plicable	mH	'
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	3.5	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 _r - 500kHz to f _r + 500kHz
18	Ageing	$\frac{\Delta f}{f}$	- 1.0	+ 1.0	10-6	Over 5 years after Burn-in
19	Terminal Length	L	Figi	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		1 10 1				
NA	Characteristics	Limits			1 1	D1
No.	Gnaracteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	116.47	71429	MHz	
2	Reference Temperature	T _o	+ 23	+ 27	°C	
3	Overtone Order	8 -	5			
4	Load Capacitance	□ C _L	α		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}	<u>.</u>	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	-8.0	+8.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	-20	+ 20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	<u>Δ 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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	3.5	pF	
16	Q Factor	Q	50 000	<u>-</u>	-	
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	$\frac{\Delta f}{f}$	-1.0	+1.0	10-6	Over 5 years after Burn-in
19	Terminal Length	L	Figu	re 2	mm	



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Limi	ts		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f∟	4.194	304	MHz	
2	Reference Temperature	То	+ 6	0	°C	*
3	Overtone Order		Fundan	nental	·	
4	Load Capacitance	C _L	22	2	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	RL	-	75	Ω	Over T _{op}
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	- 15	+ 15	10-6	From frequency measured at +25 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not app	olicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	olicable	%	
13	Motional Inductance	L ₁	25	. •	mH	
14	Motional Capacitance	C ₁	Not app	olicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	1 000 000	-	-	
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 - 420kHz to f _L + 420kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Per year after Burn-in
19	Terminal Length	L	Figu	ire 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	· fL	16.0		MHz	. :
2	Reference Temperature	T _o	+ 23	+ 27	°C	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
3	Overtone Order		Fundar	nental	. :	
4	Load Capacitance	CL	30	0	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δf f	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R_{L}	_	30	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	∆ f f	- 15	+ 15	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	- 20 or 1.0	+ 20 or 1.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 30	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not app	olicable	10-6	
12	Resistance variation with Drive Level	<u>∆ R</u> R	Not ap	olicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	_	7.0	pF	
16	Q Factor	Q	65 000	-	- .	
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	∆ f	- 1.0	+1.0	10-6	Per year after Burn-in
19	Terminal Length	L	Figu	ıre 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

Ma	01	O male al	Lim	nits	11-11	Barrata
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	10	10.0		
2	Reference Temperature	To	+ 27	+ 33	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	25	35	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	RL	-	30	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	- 15	+ 15	10-6	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	- 30	+ 70	°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	-	7.0	pF	
16	Q Factor	Q	Not ap	plicable	-	·
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	Not ap	plicable		
18	Ageing	$\frac{\Delta f}{f}$	- 1.0	+1.0	10-6	Per year after Burn-in
19	Terminal Length	L	Fig	ure 2	mm	

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		Domarko
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	25	25.0		
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	· •	Fundar	nental		
4	Load Capacitance	C _L	3	0	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	RŁ		10	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 with Temperature over Top	<u>Δ</u> R R	Not applicable		%	
10	Operating Temperature Range	T _{op}	- 30	+ 80	°C	
11	Frequency variation with Drive Level	<u>∆ f</u> f	Not applicable		10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	2.7	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	40 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or	R _p /R or	4:1	_		In the frequency range: f _L - 50kHz to f _L + 50kHz
	Response Impedance to Resonance Resistance	IZ _p I/R	5:1	-		Overtones 3 and 5
18	Ageing	$\frac{\Delta f}{f}$	- 2.0	+2.0	10-6	1 year after Burn-in at To
19	Terminal Length	L	Figu	ure 2	mm	
20	Intended Application		,	KO		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

Na	Ohavastaviatiaa	Cymalaal	Lim	its	1.1-2	Remarks
No.	Characteristics	Symbol	Min.	Max.	Unit	nemarks
1	Resonance Frequency	f	90	.0	MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	-	ģ	3		建在警 一点一点
4	Load Capacitance	CL	11.9	12.1	рF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u> f	- 5.0	+5.0	10-6	At To °C
7	Resonance Resistance	RL	-	20	Ω	At To °C
8	Frequency Variation	$\frac{\Delta f}{f}$	- 5.0	+ 5.0	10-6	At $T_{op} = -20 \text{ to } +70 \text{ °C}$
	with Temperature over Top	f	- 10	+ 10		At $T_{op} = -20 \text{ to } +85 \text{ °C}$
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	- 20	+ 85	°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	- /	1 . <u>.</u>	mH	
14	Motional Capacitance	C ₁	1.7	. -	fF	1
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	3.16:1	-		In the frequency range: f _L - 100kHz to f _L + 100kHz
18	Ageing	Δf f	- 6.0	+6.0	10-6	Over 20 years at rated drive level
19	Terminal Length	·L	Fig	ure 2	mm	
20	Intended Application			-		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol Limits		Unit	Remarks	
INO.	Onalacteristics	Symbol	Min.	Max.	Offic	Hemains
1	Resonance Frequency	fr	83.36	6142	MHz	
2	Reference Temperature	To	+ 62	+ 72	°C	
3	Overtone Order	-		3		
4	Load Capacitance	CL	Ç	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	<u>∆ f</u> f	Not ap	plicable	10-6	e de de la companya d
9	Resistance Variation with Temperature over Top	<u>Δ</u> R R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 20	+80	°C	
11	Frequency variation with Drive Level	<u>∆ 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	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	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	10 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application			-		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	the state of the s					
No.	Characteristics	Symbol	Lim	its	Unit	Remarks
NO.	Characteristics	Symbol	Min.	Max.	Offic	
1	Resonance Frequency	f _r	70.97	5328	MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	· -	3	3		
4	Load Capacitance	CL		0 .	pF	
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	R _r	-	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	Not applicable		
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	_	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	2:1	-		In the frequency range: f _r - 7100kHz to f _r + 7100kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	12 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application			_		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	79.93	3306	MHz	
2	Reference Temperature	To	+ 60	+ 70	°C	
3	Overtone Order		3	}		
4	Load Capacitance	CL	α)	pF	
5	Rated Drive Level	Po	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	<u>∆</u> f	Not applicable		10-6	
9	Resistance Variation with Temperature over Top	ΔR R	- 20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 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	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	2:1			In the frequency range: f _r - 8000kHz to f _r + 8000kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+ 3.0	10-6	12 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application			-		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		· · · · · · · · · · · · · · · · · · ·	Lim	Limits		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	79.94	79.941257		
2	Reference Temperature	To	+ 60	+ 70	°C	
3	Overtone Order	-		3		
4	Load Capacitance	CL		x 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	<u>∆</u> f f	Not applicable		10-6	and the constraint
9	Resistance Variation with Temperature over Top	ΔR R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR 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	2:1	-		In the frequency range: f _r - 8000kHz to f _r + 8000kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	12 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L.	Fig	jure 2	mm	
20	Intended Application			<u>.</u>		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

i Nia		Cumb of	Limi	ts	Unit	Domorko
No.	Characteristics	Symbol -	Min.	Max.		Remarks
1	Resonance Frequency	fL	9.2	2	MHz	
2	Reference Temperature	. To	+ 27	+ 33	°C	
3	Overtone Order	:	Fundan	nental		
4	Load Capacitance	CL	25	35	ρĒ	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δf f	– 10	+ 10	10-6	At To °C
7	Resonance Resistance	RL	<u>.</u>	30	Ω	At T₀ °C
8	Frequency Variation with Temperature over Top	Δf f	- 15	+ 15	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-20 or -2.0	+ 20 or + 2.0	ω Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-30	+ 70	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not app	olicable	10-6	er Charles And Charles And Charles
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	olicable	%	
13	Motional Inductance	L ₁	Not app	olicable	mH	
14	Motional Capacitance	C ₁	Not ap	olicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	Not ap	olicable	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or IZ _p I/R	Not applicable			
18	Ageing	$\frac{\Delta f}{f}$	-1.0	+1.0	10-6	Per year after Burn-in
19	Terminal Length	L	Figu	ire 2	mm	
20	Intended Application		>	(O		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	24	.0	MHz	
2	Reference Temperature	To	+ 25	+ 29	°C	
3	Overtone Order	-	Fundar	nental		
4	Load Capacitance	CL	30)	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_L	-	120	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	- 40	+ 40	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	+ 20 or - 2.0	+ 20 or + 2.0	% Ω	From resistance measured at T_0 °C If $R \le 10\Omega$
10	Operating Temperature Range	T _{op}	- 55	+ 100	°C	
11	Frequency variation with Drive Level	Δ <u>f</u>	Not applicable		10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	olicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	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	R _p /R or IZ _p I/R	2:1	-		In the frequency range: f _L - 200kHz to f _L + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Per year after Burn-in
19	Terminal Length	L	Figu	ıre 2	mm	
20	Intended Application			•		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			C VALUATA			
No.	Characteristics	Symbol	Lim	nits	Unit	Remarks
140.	Onaracteristics	Cymbol	Min.	Max.	Offic	3.
1	Resonance Frequency	· f _r	76.8	315	MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	-	- 3	3		
4	Load Capacitance	C_L		0	pF	
5	Rated Drive Level	Po	0	.2	mW	N
6	Frequency Adjustment Tolerance	Δf f	- 10	+10	10-6	At To °C
7	Resonance Resistance	R _r	-	50	Ω	At T _o °C
8 Section (1888) 11	Frequency Variation with Temperature over Top	<u>Δ f</u> f	- 10	+ 10	10-6	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	+ 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+80	°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	-	3.5	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 _r = 5000kHz to f _r + 5000kHz
18	Ageing	∆ f f	-2.0	+2.0	10-6	Over 5 years after Burn-in
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application			-		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f∟	20	.0	MHz	
2	Reference Temperature	To	+ 24	+ 26	°C	
3	Overtone Order		Fundar	nental		en en
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 20	+ 20	10-6	At To °C
7	Resonance Resistance	RL	_	20	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf f	- 50	+ 50	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-30	+ 80	°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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	4.5	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 l/R	3:1	-		In the frequency range: f _L - 200kHz to f _L + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Per year after Burn-in
19	Terminal Length	L	Figi	ire 2	mm	
20	Intended Application			- :		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		Domorko
No.	Characteristics	Symbol -	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	20	.0	MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	-	Fundar	nental		Na di
4	Load Capacitance	C _L	29.7	30.3	pF	
5	Rated Drive Level	Po	0.	2	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 50	+ 50	10-6	At To °C
7	Resonance Resistance	RL	-	20	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	- 50	+ 50	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	Not applicable		%	
10	Operating Temperature Range	Тор	- 55	+ 105	°C	
11	Frequency variation with Drive Level	<u>∆</u> 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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	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	7:1	-		In the frequency range: f _L - 500kHz to f _L + 500kHz
18	Ageing	$\frac{\Delta f}{f}$	- 15	+ 15	10-6	After Burn-in over 5 years
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application			_		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

				i.e.	:	
No.	Characteristics	Symbol	Lim		Unit	Remarks
	· · · · · · · · · · · · · · · · · · ·		Min.	Max.		
1	Resonance Frequency	f _r	40.9	960	MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order		. 3			
4	Load Capacitance	CL	α	o	pF	
5	Rated Drive Level	Po	0.	1.	mW	the state of the s
6	Frequency Adjustment Tolerance	<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	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	Тор	- 25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	- 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	ΔR R	-20	+ 20	%	From $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
13	Motional Inductance	L ₁	5.0	-	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	4:1	- -		In the frequency range: f _r - 4000kHz to f _r + 4000kHz
18	Ageing	$\frac{\Delta f}{f}$	- 10	+10	10-6	10 years after Burn-in
19	Terminal Length	L	Figu	ure 2	mm	* .
20	Intended Application			-		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

1 1						100
No.	Characteristics	Symbol Limits		Unit	Remarks	
INO.	Oridiacteristics	Syllibol	Min.	Max.	Office	Homano
1	Resonance Frequency	f _r	70.96	5082	MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	٥	0	pF	10.00
5	Rated Drive Level	Po	0.	.1	mW	10
6	Frequency Adjustment Tolerance	Δf 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>Δ f</u> f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T -25 to +10 °C From T +10 to +50 °C From T +50 to +70 °C
9	Resistance Variation with Temperature over Top	∆R R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°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	4.5	•	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 - 7000kHz to f _r + 7000kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	10 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application			-		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	0	0	Lim	its	11-11	Demonto
No.	Characteristics	Symbol -	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	79.93	79.937158		
2	Reference Temperature	To	+ 60	+ 70	°C	
3	Overtone Order	. -	3	}		
4	Load Capacitance	C _L	۵	9	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δf f	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	-	40	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	Not ap	olicable	10-6	g galage
9	Resistance Variation with Temperature over Top	ΔR R	-20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	:
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	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	2:1	_		In the frequency range: f _r - 7993kHz to f _r + 7993kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	12 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application			-		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		_
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	79.74	5355	MHz	
2	Reference Temperature	To	+ 60	+ 70	°C	
3	Overtone Order	-	. 3	3		
4	Load Capacitance	CL)	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>Δ f</u> f	Not applicable		10-6	Transfer of the control of the contr
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	- 20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 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	olicable	%	
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	2:1			In the frequency range: f _r - 7994kHz to f _r + 7994kHz
18	Ageing	∆ f f	-3.0	+3.0	10-6	12 years after Burn-in + Ageing of 500 hours
19	Terminal Length	L	Figu	ıre 2	mm	
20	Intended Application			-		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

-			Lim	its		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	59.35	6136	MHz	
2	Reference Temperature	T _o	+ 20	+30	°C	
3	Overtone Order	-	3	,		
4	Load Capacitance	· C _L	α)	pF	de de
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	$\frac{\Delta f}{f}$	0 - 9.0 - 9.0	+ 9.0 + 9.0 0	10-6	From T - 25 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	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	:
11	Frequency variation with Drive Level	Δf 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	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	4:1			In the frequency range: f _r = 5800kHz to f _r + 5800kHz
18	Ageing	$\frac{\Delta f}{f}$	-10	+10	10-6	10 years after Burn-in
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application			_		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	:		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	18		MHz	
2	Reference Temperature	T _o	+ 23	+27	°C	
3	Overtone Order	-	Fundar			
4	Load Capacitance	CL	3(a i	pΕ	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δf f	- 10	+10	10-6	At To °C
7	Resonance Resistance	RL	<u> </u>	20	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ</u> f f	- 25	+ 25	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	Not applicable		%	
10	Operating Temperature Range	- T _{op}	- 55	+ 100	°C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not app	Not applicable		
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not app	olicable	%	
13	Motional Inductance	L ₁	Not ap	olicable	mH	
14	Motional Capacitance	C ₁	Not ap	olicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	90 000		-	
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 - 500kHz to f _L + 500kHz
18	Ageing	Δf f	-5.0	+ 5.0	10-6	Per year after Burn-in
19	Terminal Length	L	Figu	ıre 2	mm	
20	Intended Application			-		·

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

Ma	Ohavastaviation	O mala al	Lim	nits	1124	D
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	81.57	81.576923		
2	Reference Temperature	To	+ 62	+ 72	°C	
3	Overtone Order	-	. 3	3		
4	Load Capacitance	CL	Ö	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	-	40	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	-20	+ 20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10-6	. : · ·
. 12	Resistance variation with Drive Level	$\frac{\Delta R}{R}$	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	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	10 years after 500 hours Burn-in
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application		00	CXO		7



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. 1

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim		Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	f _r	86.02	4590	MHz	
2	Reference Temperature	To	+ 20	+30	°C	. 1
3	Overtone Order	-		3		1 d
4	Load Capacitance	CL	. 0	o 1	pF	1
5	Rated Drive Level	Po	0	.1	mW	1 .'
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	- :	40	Ω	At T _o °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 + 80 °C
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 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	2.0	1 . .	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	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	Over 12 years after Burn-in
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application		ТС	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

						r
No.	Characteristics	Symbol	Lim	nits	Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	f _r	85.98	3607	MHz	
2	Reference Temperature	T _o	+ 20	+30	°C	
3	Overtone Order	-	3	3	·	
4	Load Capacitance	CL	0	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	- 2	40	Ω	At To°C
8	Frequency Variation with Temperature over Top	<u>Δ f</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 +80 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR 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	2:1			In the frequency range: f _r - 10% to f _r + 10%
18	Ageing	$\frac{\Delta f}{f}$	- 5.0	+5.0	10-6	Over 12 years after Burn-in
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application		TO	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	nits		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	79.94	9453	MHz	
2	Reference Temperature	To	+ 60	+ 70	°C	
3	Overtone Order	<u>-</u>	3	3		
4	Load Capacitance	CL	C	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	<u>Δ</u> f	Not applicable		10-6	A september of the sept
9	Resistance Variation with Temperature over Top	ΔR R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 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	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	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	Over 12 years after 500 hours Burn-in
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application		00	CXO		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

					,	
No.	Characteristics	Symbol -	Lim	its	Unit	Remarks
110.	Onal dotonotion	- Cymicon	Min.	Max.	J.,,,	
1	Resonance Frequency	f _r	79.95	7650	MHz	
2	Reference Temperature	To	+ 60	+ 70	°C	
3	Overtone Order	-	3	3°		
4	Load Capacitance	CL	α)	pF	1
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>Δ f</u> f	Not app	olicable	10-6	Section 1997
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	- 20	+ 20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 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	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	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	Over 12 years after 500 hours Burn-in
19	Terminal Length	L	Figu	ure 2	mm	
20	Intended Application		00	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Charactariation	Sumbol	Limits	its	Unit	Remarks
INO.	Characteristics	Symbol	Min.	Max.	Offic	nemarks
1	Resonance Frequency	f _r	70.97	0205	MHz	
2	Reference Temperature	To	+ 20	+30	°C	
3	Overtone Order	-	3			
4	Load Capacitance	CL	α	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 T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ</u> 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 +80 °C
9	Resistance Variation with Temperature over Top	∆R R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	Not applicable		
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	4.5	-	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	Over 12 years after 500 hours Burn-in
19	Terminal Length	L	Figu	ıre 2	mm	
20	Intended Application		тс	OXO		:



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	its		Domesto
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	101.936620		MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	i vi
3	Overtone Order	-	5			
4	Load Capacitance	CL	11.9	12.1	pF	
5	Rated Drive Level	Po	0.	1	mW	
6	Frequency Adjustment Tolerance	Δf f	- 5.0	+5.0	10-4	At T _o °C
7	Resonance Resistance	RL	-	70	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-5.0 -10	+5.0 +10	10-4	From T = 20°C to +70°C From T = 20°C to +80°C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 80	°C	. 3
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10-4	
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	0.37	-	fF	
15	Static Capacitance	Co	-	5.0	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	2.5:1	-		In the frequency range: f _L - 100kHz to f _L + 100kHz
18	Ageing	$\frac{\Delta f}{f}$	- 6.0	+6.0	10-4	Over 5 years
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application		VC	CXO		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Cymahal	Limits		1 1 - 14	Domouko
INO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	75	75.0		
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	C _L	11.9	12.1	pF	:
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-2.0	+2.0	10-4	At T _o °C
7	Resonance Resistance	RL	-	25	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	- 5.0 - 10	+5.0 +10	10-4	From T - 20°C to +70°C From T - 20°C to +80°C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 80	°C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	plicable	10-4	
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	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	<u>-</u>		In the frequency range: f _L - 100kHz to f _L + 100kHz
18	Ageing	$\frac{\Delta f}{f}$	-6.0	+6.0	10-4	Over 5 years
19	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application		V	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim	nits	Unit	Remarks
140.	Onalacteristics	Symbol	Min.	Max.	Offic	Hemains
1	Resonance Frequency	fL	80	.0	MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	11.9	12.1	pF	i ·
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-2.0	+2.0	10-4	At T _o °C
7	Resonance Resistance	RL	-	25	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	-5.0 -10	+ 5.0 + 10	10-4	From T – 20°C to +70°C From T – 20°C to +80°C
9	Resistance Variation with Temperature over Top	∆R R	Not applicable		%	
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not applicable		10-4	
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	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	$\frac{\Delta f}{f}$	- 6.0	+6.0	10-4	Over 5 years
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application		V	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			L VARIAIN			
No.	Characteristics	Characteristics Symbol Limits		Unit	Remarks	
140.	Orial acteristics	Symbol	Min.	Max.		Tomano
1	Resonance Frequency	f _r	74.62	74.626318		
2	Reference Temperature	T _o	+ 20	+30	°C	
3	Overtone Order	: · -	3			
4	Load Capacitance	CL	α	Ò	рЕ	
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 f</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 +80 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 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	2:1	<u>.</u>		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	Terminal Length	L	Figu	ure 2	mm	
20	Intended Application		ТС	CXO		·

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Limits			
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r		64.791785		
2	Reference Temperature	T _o	+ 20	+ 30	MHz °C	
3	Overtone Order	-		3		
4	Load Capacitance	C _L	· · · · · · · · · · · · · · · · · · ·	0	pF	
5	Rated Drive Level	Po	0		mW	
6	Frequency Adjustment Tolerance	Δ f f	- 10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R _r	<u>-</u>	40	Ω	At To °C
8	Frequency Variation with Temperature over T _{op}	<u>∆</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 + 80 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	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	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	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application		TO	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			E VALUATA			
No.	Characteristics	Symbol		Unit	Remarks	
140.	Orial acteristics	Gymbol	Min.	Max.	Offic	Hemans
1	Resonance Frequency	. f _r	64.99	0091	MHz	
2	Reference Temperature	T _o	+ 20	+30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	0	0	pF	
5	Rated Drive Level	Po	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	∆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 +80 °C
9	Resistance Variation with Temperature over Top	ΔR R	-20	+ 20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 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	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	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	Over 12 years after 500 hours Burn-in
19	Terminal Length	L	Figure 2		mm	
20	Intended Application		то	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics		Lim	nits		
No.	Characteristics	Symbol -	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fr	64.995773		MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	C _L		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	<u>Δ f</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 + 80 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 20	+80	°C	:
11	Frequency variation with Drive Level	<u>∆</u> f	Not applicable		10-6	
12	Resistance variation with Drive Level	ΔR 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	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	Terminal Length	L	Figure 2		mm	
20	Intended Application		TO	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Lim	iits	11-1	Pomarko
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	. f _r	74.67	7455	MHz	
2	Reference Temperature	To	+ 20	+30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	0	0	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>Δ f</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 +80 °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	- 20	+ 20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	- 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	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	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	Terminal Length	L	Fig	ure 2	mm	
20	Intended Application		TO	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

Na	Observatoristics	0	Lim	iits	1.1-29	
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	66.63	66.638308		
2	Reference Temperature	To	+ 20	+30	°C	. :
3	Overtone Order	-	3	3		
4	Load Capacitance	C _L	à	0	pF	
5	Rated Drive Level	Po	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	<u>∆ f</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 + 80 °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	- 20	+20	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 20	+ 80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	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	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	12 years after 500 hours Burn-in
19	Terminal Length	L	Figu	ıre 2	mm	
20	Intended Application		ТС	XO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Oh ava ata viatia a	Cls al	Lim	its	11-2	Describe
NO.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	66.628692		MHz	
2	Reference Temperature	T _o	+ 20	+30	°C	
3	Overtone Order	-	3			
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 T _o °C
7	Resonance Resistance	R _r	-	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</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 + 80 °C
9	Resistance Variation with Temperature over Top	<u>∆</u> R R	- 20	+20	%	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+ 80	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not applicable		10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	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	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	12 years after 500 hours Burn-in
19	Terminal Length	L	Figu	ıre 2	mm	
20	Intended Application	·	тс	XO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Observatoristica		Lim	its		
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	f _r	60.09	60.091346		
2	Reference Temperature	T _o	+ 20	+30	°C ,	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	0	D.	рF	
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>Δ</u> 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 +80 °C
9	Resistance Variation with Temperature over Top	ΔR R	-2.0	+2.0	Ω	From resistance measured at T _o °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 $P_{S1} = 0.01 \text{mW}$ 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 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	12 years after 500 hours Burn-in
19	Terminal Length	L	Figi	ıre 2	mm	
20	Intended Application		ТС	CXO		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

-	- h		L VALUATO		·	
No.	Characteristics	Symbol	Lim	nits	Unit	Remarks
NO.	Citaracteristics	Symbol	Min.	Max.	Offic	Hemarks
1	Resonance Frequency	f _r	60.08	6538	MHz	
2	Reference Temperature	То	+ 20	+ 30	°C	
3	Overtone Order	-	3	3		1
4	Load Capacitance	C _L	0	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	-	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>Δ f</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 + 80 °C
9	Resistance Variation with Temperature over Top	ΔR R	-2.0	+2.0	Ω	From resistance measured at T _o °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 $P_{S1} = 0.01 \text{mW}$ 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 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	12 years after 500 hours Burn-in
19	Terminal Length	L	Figi	ure 2	mm	
20	Intended Application		тс	CXO		



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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol -	Lim	nits	Unit	Remarks
140.	Ondi dotonotios	Cymbol	Min.	Max.	Offic	Remarks
1	Resonance Frequency	f _r	37.083333		MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	0	0	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 T _{op}	<u>Δ f</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 + 80 °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-2.0	+2.0	Ω	From resistance 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 $P_{S1} = 0.01 \text{mW}$ to $P_{S2} = 0.1 \text{mW}$
12	Resistance variation with Drive Level	∆R R	- 20	+20	%	From $P_{S1} = 0.01 \text{mW}$ 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	-	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	$\frac{\Delta f}{f}$	- 5.0	+5.0	10-6	12 years after Burn-in
19	Terminal Length	L	Figu	ure 2	mm	
20	Intended Application		тс	CXO		

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		r			<u> </u>	
No.	Characteristics	Symbol -	Limits		Unit	Remarks
			Min.	Max.	Offic	Hemaiks
1	Resonance Frequency	f _r	66.612423		MHz	
2	Reference Temperature	To	+ 20	+ 30	°C	
3	Overtone Order	-	3	3		
4	Load Capacitance	CL	∞		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 T _o °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	0 - 9.0 - 9.0	+9.0 +9.0 0	10-6	From T - 25 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	%	From resistance measured at T ₀ °C
10	Operating Temperature Range	T _{op}	- 25	+ 70	°C	
11	Frequency variation with Drive Level	∆ f f	Not applicable		10-6	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not applicable		%	
13	Motional Inductance	L ₁	6.5	-	mH	
14	Motional Capacitance	C ₁	Not applicable		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	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	12 years after 500 hours Burn-in
19	Terminal Length	L	Figure 2		mm	
20	Intended Application		TCXO			

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TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No. Characteristics Symbo Limits Min. Max. Max.	· · · · · · · · · · · · · · · · · · ·	<u>- 11 </u>						
Nin. Max. Min. Max.	No.	Characteristics	Symbol -	Limits		l loit	Remarks	
2 Reference Temperature T₀ +60 +70 °C 3 Overtone Order - 3 - 4 Load Capacitance CL ∞ pF 5 Rated Drive Level P₀ 0.1 mW 6 Frequency Adjustment Tolerance Δf -10 +10 10-6 At T₀ °C 7 Resonance Resistance R₂ - 40 Ω At T₀ °C 8 Frequency Variation with Temperature over T₀p Motion Tole Temperature over T₀p 10-6 From resistance measured at T₀ °C 9 Resistance Variation with Temperature Range T₀p -20 +20 % From resistance measured at T₀ °C 10 Operating Temperature Range T₀p -20 +80 °C 11 Frequency variation with Drive Level Δf Not applicable 10-6 12 Resistance variation with Drive Level Λ R Not applicable % 13 Motional Inductance L₁ 2.0 - mH </td <td>Min.</td> <td>Max.</td> <td>Offic</td> <td>nemarks</td>				Min.	Max.	Offic	nemarks	
3 Overtone Order 4 Load Capacitance CL ∞ pF 5 Rated Drive Level Po 0.1 mW 6 Frequency Adjustment Tolerance 7 Resonance Resistance Rr - 40 Ω At To °C 8 Frequency Variation with Temperature over Top 9 Resistance Variation with Temperature over Top 10 Operating Temperature Range 11 Frequency variation with Drive Level 12 Resistance variation with Drive Level 13 Motional Inductance 14 Motional Capacitance C1 Not applicable R Not applicable R Not applicable R Not applicable 10 - 6 11 Frequency variation with Drive Level 12 Resistance variation with Drive Level 13 Motional Inductance C1 Not applicable FF Trom resistance measured at To °C C The Product of Top	1	Resonance Frequency	f _r	79.924863		MHz		
4 Load Capacitance C _L ∞ pF 5 Rated Drive Level P ₀ 0.1 mW 6 Frequency Adjustment Tolerance Δf f −10 +10 10−6 At T ₀ °C 7 Resonance Resistance R _r − 40 Ω At T ₀ °C 8 Frequency Variation with Temperature over T _{op} Δf f Not applicable 10−6 with Temperature over T _{op} PResistance Variation with Temperature over T _{op} −2.0 +2.0 Ω From resistance measured at T ₀ °C 10 Operating Temperature Range T _{op} −20 +80 °C 11 Frequency variation with Drive Level f Not applicable 10−6 with Drive Level T Ω Not applicable 10−6 with Drive Level T Ω Ω Not applicable π Ω Ω Ω Ω Ω Ω Ω Ω Ω	2	Reference Temperature	To	+ 60	+ 70	°C		
5 Rated Drive Level P ₀ 0.1 mW 6 Frequency Adjustment Tolerance Δf f -10 +10 10 ⁻⁶ At T ₀ °C 7 Resonance Resistance R _r - 40 Ω At T ₀ °C 8 Frequency Variation with Temperature over T _{0p} Δf f Not applicable over T ₀ 10 ⁻⁶ From resistance measured at T ₀ °C 9 Resistance Variation with Temperature over T _{0p} T _{0p} -20 +20 % From resistance measured at T ₀ °C 10 Operating Temperature Range T _{0p} -20 +80 °C 11 Frequency variation with Drive Level Δf f Not applicable 10 ⁻⁶ 12 Resistance variation with Drive Level ΔR R Not applicable % 13 Motional Inductance L ₁ 2.0 mH 14 Motional Capacitance C ₁ Not applicable fF 15 Static Capacitance C ₀ - 5.0 pF 16 Q Factor Q 70 000 - <td>3</td> <td>Overtone Order</td> <td>-</td> <td>3</td> <td>3</td> <td></td> <td></td>	3	Overtone Order	-	3	3			
6 Frequency Adjustment Tolerance Δf 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 Not applicable 10-6 9 Resistance Variation with Temperature over Top AR -20 +20 % From resistance measured at To °C 10 Operating Temperature Range Top -20 +80 °C 11 Frequency variation with Drive Level Δf Not applicable 10-6 12 Resistance variation with Drive Level ΔR Not applicable % 13 Motional Inductance L1 2.0 - mH 14 Motional Capacitance C1 Not applicable fF 15 Static Capacitance C2 - 5.0 pF 16 Q Factor Q 70 000 - - 17 Ratio of Unwanted: Resistance or Resistance or Resistance almost and provided in the provi	4	Load Capacitance	CL	α	0	pF		
Tolerance	5	Rated Drive Level	Po	0.	1	mW	:	
8 Frequency Variation with Temperature over Top Δf Not applicable 10-6 9 Resistance Variation with Temperature over Top ΔR/R -20 +2.0 % From resistance measured at To °C 10 Operating Temperature Range Top -20 +80 °C 11 Frequency variation with Drive Level Δf/f Not applicable 10-6 12 Resistance variation with Drive Level ΔR/R Not applicable % 13 Motional Inductance L1 2.0 - mH 14 Motional Capacitance C1 Not applicable fF 15 Static Capacitance C2 - 5.0 pF 16 Q Factor Q 70 000 - - 17 Ratio of Unwanted: Response Resistance or Resistance or	6		Δ <u>f</u>	- 10	+ 10	10-6	At T _o °C	
with Temperature over Top f 9 Resistance Variation with Temperature over Top ΔR/R -20 +20 % From resistance measured at To °C 10 Operating Temperature Range Top -20 +80 °C °C 11 Frequency variation with Drive Level Δf/f Not applicable 10-6 12 Resistance variation with Drive Level ΔR/R Not applicable % 13 Motional Inductance L1 2.0 - mH mH 14 Motional Capacitance C1 Not applicable fF 15 Static Capacitance C0 - 5.0 pF pF 16 Q Factor Q 70 000 - 17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Resonance Resistance Resonance Resistance or Resonance Resistance Resonance Resistance Rp/R or L2:1 - Response Impedance to Resonance Resistance In the frequency range: fr - 10% to Top or	7	Resonance Resistance	R _r	-	40	Ω	At To °C	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	8	with Temperature	<u>Δ f</u> f	Not applicable		10-6		
10 Operating Temperature Range Top −20 +80 °C 11 Frequency variation with Drive Level Δ f f Not applicable 10−6 12 Resistance variation with Drive Level A R R Not applicable % 13 Motional Inductance L₁ 2.0 − mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ − 5.0 pF 16 Q Factor Q 70 000 − − − 17 Ratio of Unwanted: Response Resistance or Resonance Resistance or Resonance Resistance Resonance Resistance Resonance Resistance Resonance Resistance In the frequency range: f₁ −10% to f₂ +10% 18 Ageing Δ f −3.0 +3.0 10−6 12 years after 500 hour states 10	9	with Temperature	ΔR R	0	r			
with Drive Level f 12 Resistance variation with Drive Level Δ R/R Not applicable % 13 Motional Inductance L₁ 2.0 - mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 5.0 pF 16 Q Factor Q 70 000 - - 17 Ratio of Unwanted: Response Resistance or Resistance or Resonance Resistance or Resonance Resistance or Resonance Resistance or Resonance Resistance Rp/R or Z:1 - In the frequency range: f₂ − 10% to f₂ + 10% to f₂ + 10% 18 Ageing Δ f -3.0 +3.0 10 −6 12 years after 500 hou	10	Operating Temperature	T _{op}	-20	+ 80	°C		
with Drive Level R 13 Motional Inductance L₁ 2.0 - mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 5.0 pF 16 Q Factor Q 70 000 - - 17 Ratio of Unwanted: Response Resistance or Resonance Resistance Rp/R or IZpI/R In the frequency range: fr - 10% to fr + 10% to fr + 10% 18 Ageing Δf -3.0 +3.0 10 - 6 12 years after 500 hour	11		Δf f	Not applicable		10-6		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	12		<u>Δ R</u> R	Not applicable		%		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	13	Motional Inductance	L ₁	2.0	-	mH		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14	Motional Capacitance	C ₁	Not applicable		fF		
17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing In the frequency range: $f_r = 10\%$ to $f_r + 10\%$ 19 Ageing 10 Ageing 10 Ageing	15	Static Capacitance	Co	-	5.0	pF		
Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance $ Z_p /R$ or $ Z_p /R$ $ $	16	Q Factor	Q	70 000	-	-		
	17	Response Resistance to Resonance Resistance or Response Impedance to	or	2:1	-		range: f _r - 10% to	
	18	Ageing	<u>Δ f</u> f	-3.0	+3.0	10-6	12 years after 500 hours Burn-in	
19 Terminal Length L Figure 2 mm	19	Terminal Length	L	Figure 2		mm		
20 Intended Application OCXO	20	Intended Application		осхо				



Thinking.

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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.				