

Page i

CRYSTAL UNITS IN METAL HOLDER, BASED ON TYPE T1507, FREQUENCY RANGE 2.5 - 50MHZ ESCC Detail Specification No. 3501/002

ISSUE 1 October 2002





ESCC Detail Specification

PAGE	ii
ISSUE	1

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Pages 1 to 121

CRYSTAL UNITS IN METAL HOLDER, BASED ON TYPE T1507,

FREQUENCY RANGE 2.5 - 20MHZ

ESA/SCC Detail Specification No. 3501/002



space components coordination group

		Appr	Approved by		
lssue/Rev.	Date	SCCG Chairman	ESA Director General or his Deputy		
Issue 4	February 1998	Sannott			
Revision 'A'	April 1999	Sannot	- John		
Revision 'B'	May 2000	Sa mit	Hom		
			200		



Rev. 'B'

PAGE 2

ISSUE 4

DOCUMENTATION CHANGE NOTICE

Rev. Letter	Rev. Date	CHANGE Reference Item	Approved DCR No.
		This Issue supersedes Issue 3 and incorporates all modifications defined in Revisions 'A' and 'B' to Issue 3 and the changes agreed in the following DCRs:- Cover Page DCN Table 1(a) : Storage Temperature Range column deleted	None None 221336 221336 221336 221336 221336 221337 221337 221337 221337 221337 221337 221341 221465 221465 221465 221465 221341 221341 23799/ 221341/ 221380/ 221366 221337 221337 221336 221405 221405
'A'	Apr. '99	P1. Cover Page : Frequency Range amended in Title P2. DCN P5. Para. 1.1 : Frequency Range amended in first sentence P60. Table 1(a) : Variant 38, No. 16 Limit amended	21115 None 21115 221506
'B'	May '00	P1. Cover Page P2. DCN P12. Figure 2 : In the Table, dimension 'C' max. amended	None None 221548



PAGE 3

ISSUE 4

TABLE OF CONTENTS

		Pag
1.	<u>GENERAL</u>	5
1.1	Scope	5
1.2	Type Variants	
1.3	Maximum Ratings	5
1.4	Physical Dimensions	5
1.5	Functional Diagram	5 5
2.	APPLICABLE DOCUMENTS	13
3.	TERMS, DEFINITIONS, ABBREVIATIONS, SYMBOLS AND UNITS	13
4.	REQUIREMENTS	13
4.1	General	
4.2	Deviations from Generic Specification	13
4.2.1	Deviations from Special In-process Controls	13
4.2.2	Deviations from Final Production Tests	13
4.2.3	Deviations from Burn-in Tests	13 13
4.2.4	Deviations from Qualification Tests	13
4.2.5	Deviations from Lot Acceptance Tests	13
4.3	Mechanical Requirements	14
4.3.1	Dimension Check	14
4.3.2	Weight	14
4.3.3	Robustness of Terminations	14
4.4	Materials and Finishes	14
4.4.1	Case	14
4.4.2	Lead Material and Finish	14
4.5	Marking	14
4.5.1	General	14
4.5.2	The SCC Component Number	15
4.5.3	Characteristics	15
4.5.4	Traceability Information	15
4.5.5	Manufacturer's Name, Symbol and Code	15
4.6 4.6.1	Electrical Measurements	15
4.6.2	Electrical Measurements at Reference Temperature	15
4.6.3	Electrical Measurements at High and Low Temperatures	15
4.7	Circuits for Electrical Measurements Burn-in Tests	15
4.7.1	Parameter Drift Values	15
4.7.2	Conditions for Burn-in	15
4.7.3	Electrical Circuits for Burn-in	15
4.8	Environmental and Endurance Tests	15
4.8.1	Measurements and Inspections on Completions (5)	18
4.8.2	Measurements and Inspections on Completion of Environmental Tests	18
4.8.3	Measurements and Inspections at Intermediate Points and on Completion of Endurance Tests Conditions for Operating Life Test	18
	Conditions for Operating Life Test	1Ω



PAGE 4

		<u>Page</u>	<u>e</u>
TABLES	<u>s</u>		
1(a)	Type Variant Summary	6	
	Type Variant Detailed Information	22	
1(b)	Maximum Ratings	8	
1(c)	Format for Individual Tables 1(a)	9	
2	Electrical Measurements at Reference Temperature	16	
3	Electrical Measurements at High and Low Temperatures	17	
4	Parameter Drift Values	17	
5	Conditions for Burn-in and Life Test	17	
6	Measurements and Inspections on Completion of Environmental Tests and at Intermediate Points and on Completion of Endurance Testing		
FIGURE	<u>es</u>		
1	Parameter Derating Information	N1/A	
2	Physical Dimensions	N/A	
3	Functional Diagram	12	
4	Circuits for Electrical Measurements	12 N/A	
5	Electrical Circuit for Burn-in and Life Test	N/A N/A	

APPENDICES (Applicable to specific Manufacturers only)

None.



Rev, 'A'

PAGE

ISSUE 4

5

1. GENERAL

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 T1507, Frequency Range 2.5 - 50MHz.

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

1.2 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 ESA/SCC 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 Qualifying Space Agency (QSA).

1.3 MAXIMUM RATINGS

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

1.4 PHYSICAL DIMENSIONS

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

1.5 FUNCTIONAL DIAGRAM

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

PAGE 6

ISSUE 4

TABLE 1(a) - TYPE VARIANT SUMMARY

Variant	Resonance Frequency	I I		Operating Temp. Range	Lead
Variant	(MHz)	(C _L pF)	(T _o °C)	(T _{op} °C)	Finish
01	3.317	19	+ 25	-20 to +60	2
02	2.496 & 2.5344	30	+ 25	-20 to +50	2
03	2.8	20	+ 25	-30 to +60	2
04	2.7 to 5.0	30	+ 25	-40 to +80	2
05	3.2768	8	+ 25	-20 to +70	2
06	4.095	8	+ 25	-30 to +60	2
07	5.0	30	+ 40	-10 to +70	2
08	5.105555	30	+ 25	-55 to +105	2
09	5.333 to 5.334	140	+ 15	-20 to +60	2
10	5.661448	22 to 33	+ 25	-30 to +60	2
11	8.7 to 10.7	8	+ 25	-40 to +80	2
12	10.0	22	+60	-20 to +70	2
13	10.0	50	+ 25	-10 to +80	2
14	10.7	30	+ 25	-55 to +105	2
15	11.0	30	+ 25	-55 to +105	2
16	11.433333	20	+ 25	-20 to +80	2
17	12.8	30	+ 25	-55 to +105	2
18	14.7456	8	+ 25	-20 to +70	2
19	12.0	8	+ 25	-20 to +70	2
20	12.288	20 to 50	+ 60	-30 to +70	2
21	15.0	25	+ 25	-30 to +80	2
22	4.096	50	+ 25	-20 to +80	2
22	4.096	50	+ 25	-20 to +80	3 or 4
23	19.109567	8	+ 25	-30 to +60	2
24	6.4	8	+ 25	-20 to +60	2
25	7.0	∞	+ 25	-20 to +60	2
26	12.0	30	+ 25	-20 to +60	2
27	15.0	20 to 50	+ 25	-20 to +70	2
28	6.4	30	+ 25	-20 to +60	2
29	7.0	30	+ 25	-20 to +60	2
30	12.0	50	+ 40	-20 to +80	2
31	4.608	30	+ 25	-35 to +70	2
32	10.0	50	+ 40	-20 to +80	2
33	13.3	30	+ 25	-35 to +70	2
34	3.2768	27 to 33	+ 27	-20 to +50	2
35	8.0	30	+27	-20 to +50	2
36	6.0	16	+ 25	-20 to +70	2
37	4.608	27 to 33	+ 25	-25 to +70	2
38	4.608	30	+ 25	-40 to +70	2
39	5.0	27	+ 25	-40 to +70	2
40	3.2768	20 to 50	+ 25	-20 to +70	2

PAGE 7

ISSUE 4

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

Variant	Resonance Frequency (MHz)	Load Capacitance (C _L pF)	Reference Temp. (T _o °C)	Operating Temp. Range (T _{op} °C)	Lead Finish
41	4.096	50	+ 25	-10 to +80	2
42	5.0	30	+ 40	-20 to +80	2
43	5.0	30	+ 40	-10 to +70	2
44	10.0	50	+ 25	-10 to +80	2
45	12.0	∞	+ 25	-20 to +70	2
46	12.0	∞	+ 25	-40 to +85	2
47	13.332	50	+ 40	-20 to +80	2
48	5.24288	22	+60	-40 to +85	2
49	3.2	30	+ 27	-20 to +70	2
50	4.0	30	+ 25	-40 to +80	2
51	4.194304	30	+ 30	-10 to +80	2
52	12.25	32	+ 25	-20 to +70	2
53	6.0	30	+ 25	-40 to +70	2
54	9.66 to 10.65	50	+ 25	-20 to +70	2
55	4.096	50	+ 25	-10 to +80	2
56	4.194304	22	+60	-20 to +70	2
57	5.24288	22	+ 60	-20 to +70	2
58	8.0	22	+ 60	-20 to +70	2
59	13.332	50	+ 40	-20 to +80	2
60	4.194304	30	+ 25	-30 to +70	2
61	12.25	32	+ 25	-20 to +70	2
62	4.096	∞	+ 25	-30 to +80	2
63	4.194304	∞	+25 -30 to +80		2
64	5.24288	22	+25 -20 to +		2
65	12.25	32	+ 25	-20 to +70	2
66	5.0	20 to 40	+ 25	-10 to +40	2
67	5.0	30	+ 27	-20 to +70	2
68	12.0	30	+ 27	-20 to +70	2
69	11.0	8	+ 25	-20 to +80	2
70	12.0	32	+ 25	-25 to +90	2
71	4.9152	30	+ 25	-20 to +60	2
72	15.0	30	+ 25	-40 to +85	2
73	7.5	30	+ 25	-20 to +50	2
74	8.194442	30	+ 25	-20 to +50	2
75	10.0	30	+ 25	-40 to +70	2
76	4.0	50	+ 25	-55 to + 125	2
77	8.388	30	+ 25	-10 to +50	2
78	4.194304	30	+ 25	-30 to +70	2
79	3.2768	30	+ 25	-30 to +70	2
80	16.0	30	+ 25	-30 to +70	2



PAGE

ISSUE 4

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

Variant	Resonance Frequency (MHz)	Load Capacitance (C _L pF)	Reference Temp. (T _o °C)	Operating Temp. Range (T _{op} °C)	Lead Finish
81	15.0	30	+ 25	-30 to +70	2
82	4.096	∞	+ 25	-30 to +80	2
83	10.0	30	+ 25	-55 to +100	2
84	18.0	30	+ 25	-10 to +70	2
85	25.0	∞	+ 25	-25 to +75	2
86	3.6864	∞	+ 25	-25 to +80	2
87	5.24288	22	+ 60	-20 to +70	2
88	12.0	30	+ 25	-10 to +80	2
89	3.6864	30	+ 25	-10 to +80	2
90	12.136285	∞	+ 25	-30 to +65	2
91	18.0	50	+ 40	-20 to +80	2
92	8.388608	∞	+ 25	-40 to +75	2
93	10.0	30	+ 40	-20 to +90	2
94	6.0	30	+ 25	-45 to +75	2
95	12.5	30	+ 25	-40 to +85	2
96	11.059	50	+ 25	-35 to +70	2
97	7.3728	30	+ 25	-30 to +80	2
98	5.12	30	+ 40	-40 to +80	2
99	10.0	18 to 30	+ 72	-25 to +80	2

NOTES

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

TABLE 1(b) - MAXIMUM RATINGS

No.	Characteristic	Symbol	Values	Unit	Remarks
1	Nominal Frequency Range	f	2.5 to 20	MHz	Note 1
2	Drive Level Range	Р	0.01 to 0.2	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

1.	Fundamental and Overtone Order	Approx. Frequency Range (MHz)
	Fundamental	2.5 to 20
	3	10 to 30
	5	15 to 50

- 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.



PAGE 9

ISSUE 4

TABLE 1(c) - FORMAT FOR INDIVIDUAL TABLES 1(a)

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

TYPE VARIANT NO.

			Lir	nits		B	
No.	Characteristic	Symbol	Min.	Max	Unit	Remarks	
1	Resonance Frequency	f _r or f _L			MHz	Note 1	
2	Reference Temperature	To			°C	Note 2	
3	Overtone Order	-					
4	Load Capacitance	C _L			рF	Note 3	
5	Rated Drive Level	Po			mW	Note 4	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f			10-6	At To °C Note 5	
7	Resonance Resistance	R _r or R _L			Ω	At To °C Note 6	
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f			10 ⁻⁹	From frequency measured at T _o °C Note 7	
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R			%	From resistance measured at T _o °C Note 7	
10	Operating Temperature Range	T _{op}			°C		
11	Frequency variation with Drive Level	<u>∆ f</u> f			10 ⁻⁶	From $P_{S1} = mW$ to $P_{S2} = mW$ Note 8	
12	Resistance variation with Drive Level	<u>∆ R</u> R			%	From $P_{S1} = mW$ to $P_{S2} = mW$ Note 8	
13	Motional Inductance	L ₁			mH	Notes 9 and 10	
14	Motional Capacitance	C ₁			fF	Note 9	
15	Static Capacitance	Co			pF	Note 9	
16	Q Factor	Q			_	Notes 9 and 11	
17	Ratio of unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	R _p /R or ıZ _p i/R				In the frequency range: f - kHz to f + kHz	
18	Ageing	<u>Δ f</u>			10 ⁻⁶	Note 13	
19	Lead Finish	-			-		
20	Intended Application					Note 15	

NOTES: See Pages 10 and 11.



PAGE 10

ISSUE 4

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



PAGE 11

ISSUE 4

NOTES TO TABLE 1(c) (Continued)

7. Frequency and Resistance Variation with Temperature

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

8. Frequency and Resistance Variation with Drive Level

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

9. Electrical Values

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

10. Motional Inductance L₁

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

11. 'Q' Factor

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

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

12. Ratio of Unwanted Response Resistance to Resonance Resistance

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

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

13. Ageing

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

14. Not applicable Items

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

15. Intended Application

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



Rev. 'B'

PAGE 12

ISSUE 4

FIGURE 1 - PARAMETER DERATING INFORMATION

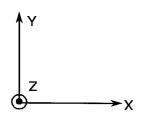
Not applicable.

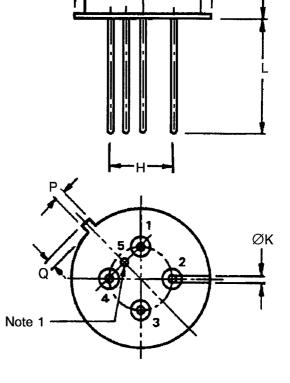
FIGURE 2 - PHYSICAL DIMENSIONS

SYMBOL	MILLIM	ETRES	DEMARKO
STIVIBUL	MIN.	MAX.	REMARKS
⊘A	_	15.75	
С	-	6.80	
Н	6.90	7.40	Pitch 7.16mm
⊘K	0.40	0.48	
L	12.70		
Р	-	0.90	Note 2
Q	_	0.95	Note 2

NOTES

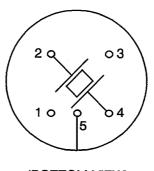
- 1. Lead No. 5 is grounded to case.
- 2. The tag's position or presence is optional.





ØA -

FIGURE 3 - FUNCTIONAL DIAGRAM



(BOTTOM VIEW)



PAGE 13

ISSUE 4

2. APPLICABLE DOCUMENTS

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

(a) ESA/SCC 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 ESA/SCC Basic Specification No. 21300 shall apply. In addition, the following symbols are used:-

Resonance Frequency $= f_r$ Load Resonance Frequency $= f_L$ Reference Temperature $= T_0$ Resonance Resistance $= R_r$ Load Resonance Resistance $= R_L$ Rated Drive Level $= P_0$ Static Capacitance $= C_o$ $= C_L$ Load Capacitance 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 ESA/SCC 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 ESA/SCC requirements and do not affect the components' reliability, are listed in the appendices attached to this specification.

4.2 DEVIATIONS FROM GENERIC SPECIFICATION

4.2.1 Deviations from Special In-process Controls

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.



PAGE 14

ISSUE 4

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 3.0 grammes.

4.3.3 Robustness of Terminations

The requirements for robustness of termination testing are specified in Section 9 of ESA/SCC 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 or nickel and gold plated.

4.4.2 Lead Material and Finish

The lead material shall be Type 'D' with either Type '2' or Type '3 or 4' finish in accordance with the requirements of ESA/SCC Basic Specification No. 23500. (See Tables 1(a) for Type Variants).

4.5 MARKING

4.5.1 General

The marking of all components delivered to this specification shall be in accordance with the requirements of ESA/SCC 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 SCC Component Number.
- (b) Characteristics.
- (c) Traceability Information.



PAGE 15

ISSUE 4

4.5.2 The SCC Component Number

Each component shall bear the SCC Component Number, which shall be constituted and marked as follows:-

	1	
Detail Specification Number]	
Type Variant (See Table 1(a))		
Testing Level (B or C, as applicable)		

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 ESA/SCC 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 ESA/SCC Basic Specification No. 21700.

4.6 ELECTRICAL MEASUREMENTS

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

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

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

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

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

Not applicable.

4.7 BURN-IN TESTS

4.7.1 Parameter Drift Values

The parameter drift values applicable to burn-in are specified in Table 4 of this specification. Unless otherwise stated, measurements shall be performed at $T_{amb} = T_0 \pm 2$ °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 <u>Conditions for Burn-in</u>

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

4.7.3 Electrical Circuits for Burn-in (Figure 5)

Not applicable.

PAGE 16

ISSUE 4

TABLE 2 - ELECTRICAL MEASUREMENTS AT REFERENCE TEMPERATURE

No.	Characteristics	Symbol	ESA/SCC 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



PAGE 17

ISSUE 4

TABLE 3 - ELECTRICAL MEASUREMENTS AT HIGH AND LOW TEMPERATURES

No.	Characteristics	Symbol	ESA/SCC 3501 Test Method	Limits	Unit
9	Frequency variation with Temperature over Top	$\frac{\Delta f}{f}$ (ΔT , P_0)	Para. 9.2.1.2	Table 1(a) Item 8	10-6
10	Resistance variation with Temperature over Top	Δ <u>R</u> (ΔΤ, P _o)	Para. 9.2.1.2	Table 1(a) Item 9	%

FIGURE 4 - CIRCUITS FOR ELECTRICAL MEASUREMENTS

Not applicable.

TABLE 4 - PARAMETER DRIFT VALUES

No.	Characteristics	Symbol	Spec. and/or Test Method	Test Conditions	Change Limits (Δ)	Unit
1	Resonance frequency drift	$\frac{\Delta f}{f}$	As per Table 2	As per Table 2	± 2.0	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 1. Whichever is the highest value.

TABLE 5 - CONDITIONS FOR BURN-IN AND LIFE TEST

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

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

Not applicable.



PAGE 18

ISSUE 4

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

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

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

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

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

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

The requirements for the operating life test are specified in Section 9 of ESA/SCC 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.



PAGE 19

ISSUE 4

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

	ESA/SCC GENERIC S	SPEC NO 3501	MEASUREMENTS A	AND INSPECTIONS		1.18	/ITS	
	EU/VOOO GENERIO C		WEAGOTEMENTO	110 1101 20110110		GIN.		
NO.	ENVIRONMENTAL AND TEST METHOD ENDURANCE TESTS (1) 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 Resonance Frequency Drift Resonance Resistance Drift	Table 2 Item 1 Table 2 Item 2 Table 2 Item 1	f R <u>Δf</u> f <u>ΔR</u> R ΔR	t .	2 Item 1 2 Item 2 +1.0 +10 +1.0	10 ⁻⁶ % Ω
03	Vibration	Para. 9.4	Initial Measurements Resonance Frequency Resonance Resistance Final Measurements Resonance Frequency Drift Resonance Resistance Drift	Table 2 Item 1	f R <u>Δf</u> f <u>ΔR</u> R ΔR		2 Item 1 2 Item 2 +1.0 +10 +1.0	10 ⁻⁶ % 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	-	-	-	-
06	External Visual Inspection	Para. 9.9	Final Measurements Visual Inspection	ESA/SCC No. 20500	-	-	_	-
07	Solderability	Para. 9.13	-	-	-	-	•	-

- 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.



PAGE 20

ISSUE 4

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

ESA/SCC GENERIC SPEC. NO. 3501 MEASU			MEASUREMENTS AI	ND INSPECTIONS		LIN	MITS	
NO.	ENVIRONMENTAL AND TEST METHOD AND CONDITIONS		IDENTIFICATION CONDITIONS		SYMBOL	Min.	Min. Max.	
	Climatic Sequence	Para. 9.14						
08	Dry Heat	Para. 9.14.1	Initial Measurements Resonance Frequency Resonance Resistance	Table 2 Item 1 Table 2 Item 2	f R		l 2 Item 1 2 Item 2	
			Final Measurements Resonance Frequency Drift	Table 2 Item 1	$\frac{\Delta f}{f}$	-2.0	+ 2.0	10-6
			Resonance Resistance Drift	Table 2 Item 2	<u>Δ R</u> R	-10 or (2)	+10	%
09	Cold	Para. 9.14.3	Initial Measurements		ΔR	-1.0	+1.0	Ω
			Resonance Frequency Resonance Resistance Final Measurements	Table 2 Item 1 Table 2 Item 2	f R		9.14.1.3 asurements	
			Resonance Frequency Drift	Table 2 Item 1	<u>∆ f</u> f	-2.0	+ 2.0	10 ⁻⁶
			Resonance Resistance	Table 2 Item 2	ΔR	-10	+10	%
			Drift		R ΔR	or (2) - 1.0	+1.0	Ω
10	Damp Heat (Acclerated) Remaining Cycles	Para. 9.14.4	Initial Measurements Resonance Frequency Resonance Resistance Final Measurements	Table 2 Item 1	f R		9.14.3.2 asurements	
	• 40		Resonance Frequency Drift	Table 2 Item 1	<u>Δ f</u> f	-2.0	+ 2.0	10 ⁻⁶
			Resonance Resistance Drift	Table 2 Item 2	ΔR R	-10 or (2)	+10	%
			Insulation Resistance	Table 2 Item 8	ΔR Ri	-1.0 500	+1.0	Ω Μ Ω
11	Rapid Change of Temperature	Para. 9.15	Initial Measurements Resonance Frequency Resonance Resistance Final Measurements	Table 2 Item 1 Table 2 Item 2 After minimum Recovery of 2 hours	f R	1	9.14.4.2 asurements	
			Resonance Frequency Drift	Table 2 Item 1	<u>∆ f</u>	-2.0	+ 2.0	10-6
			Resonance Resistance Drift	Table 2 Item 2	<u>Δ R</u> R ΔR	- 10 or (2) - 1.0	+ 10 - + 1.0	% Ω
12	Robustness of Terminations	Para. 9.16	Tensile Strength Visual Examination Bending Visual Examination	Gen. 3501 Para. 9.16.1 No visible damage Gen. 3501 Para. 9.16.2 No visible damage				

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



PAGE 21

ISSUE 4

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

	ESA/SCC GENERIC S	PEC. NO. 3501	MEASUREMENTS AND IN	ISPECTIONS		LIM		
NO.	ENVIRONMENTAL AND ENDURANCE TESTS (1)	TEST METHOD AND CONDITIONS	IDENTIFICATION	CONDITIONS	SYMBOL	Min.	Max.	UNIT
13	Life Test		Initial Measurements Resonance Frequency Resonance Resistance Intermediate Measurements Resonance Frequency Drift Resonance Resistance Drift Intermediate Measurements (Chart IV) and Final Measurements (Chart V) Resonance Frequency Drift Final Measurements (Chart IV) Resonance Resitance Drift Final Measurements (Chart IV) Resonance Frequency Drift Final Measurements (Chart IV) Resonance Frequency Drift Resonance Frequency Drift Resonance Resistance	Table 2 Item 1 Table 2 Item 2	$\begin{array}{c} f \\ R \\ \underline{\Delta f} \\ f \\ \underline{AR} \\ R \\ \underline{AR} $	Table 2 Table 2 -2.0 -10 or (2) -1.0 -2.5 -10 or (2) -1.0 -3.0 -10 or (2)	2 Item 1 2 Item 2 +2.0 +10 +1.0 +2.5 +10 +3.0 +10	10-6 % Ω 10-6 % 10-6 %
					ΔR	- 1 .0	+ 1.0	Ω

- 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.

PAGE 22

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f∟	3.3	3.317		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order		Funda	mental		
4	Load Capacitance	CL	-	19	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆</u> f	-1000	+1000	10-6	At To °C
7	Resonance Resistance	R_L		50	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	∆ f f	-1000	+1000	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}	-20	+60	°C	
11	Frequency variation with Drive Level	∆ f f	-1000	+1000	10 ⁻⁶	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.2 \text{mW}$
12	Resistance variation with Drive Level	ΔR 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 ap	plicable	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	Not applicable			
18	Ageing	$\frac{\Delta f}{f}$	Not applicable		10-6	
19	Lead Finish	-	2	2	-	

PAGE 23

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No. Characteristics Symbol Limits Min. Max. Unit Remarks		,		1:			
2 Reference Temperature	No.	Characteristics	Symbol			Unit	Remarks
3 Overtone Order 4 Load Capacitance CL 30 pF Rated Drive Level Po 0.1 mW 6 Frequency Adjustment Tolerance Resonance Resistance RL 7 Resonance Resistance RL 7 Resonance Variation with Temperature over Top 9 Resistance Variation with Temperature over Top 10 Operating Temperature Range R 11 Frequency variation with Drive Level R 12 Resistance variation with Drive Level R 13 Motional Inductance L1 Not applicable R Not applicable R Not applicable R Not applicable R Not applicable FF 10 Po Resistance variation with Drive Level R R R Not applicable R Not applicable FF 15 Static Capacitance C1 Not applicable FF 16 Q Factor Q Response Resistance to Resonance Resistance Or Response Resistance R Rp/R R 2:1 - Resistance After burn-in and per year	1	Resonance Frequency	fL	2.496 &	2.496 & 2.5344		, , , , , , , , , , , , , , , , , , , ,
4 Load Capacitance	2	Reference Temperature	То	+ ;	25	°C	
Social Rated Drive Level Po 0.1 mW	3	Overtone Order	-	Fundar	mental		
6 Frequency Adjustment Tolerance	4	Load Capacitance	CL	3	0	pF	
Tolerance Tolerance F	5	Rated Drive Level	Po	0.	1	mW	
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 or Response Resistance variation or Response Impedance to Resonance Resistance 18 Ageing A R Not applicable 10 Prom frequency measured at T _o °C measured a	6		Δf f	-15	+ 15	10-6	At T _o °C
with Temperature over Top f Mot applicable measured at To °C 9 Resistance Variation with Temperature over Top AR R Not applicable % 10 Operating Temperature Range Top -20 +50 °C 11 Frequency variation with Drive Level Af f Not applicable 10-6 12 Resistance variation with Drive Level AR R Not applicable % 13 Motional Inductance L1 Not applicable mH 14 Motional Capacitance C1 Not applicable fF 15 Static Capacitance Co - 3.5 pF 16 Q Factor Q 80 000 17 Ratio of Unwanted: Response Resistance or Response Resistance or Response Impedance to Resonance Resistance Or Response Impedance to Resonance Resistance 2:1 - In the frequency range: f _L -200kHz to f _L +200kHz 18 Ageing Af f f -5.0 +5.0 10-6 After burn-in and per year	7	Resonance Resistance	R_L	_	130	Ω	Over T _{op} °C
with Temperature over Top R 10 Operating Temperature Range Top -20 +50 °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 Not applicable mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 3.5 pF 16 Q Factor Q 80 000 - - 17 Ratio of Unwanted: Response Resistance or Resistance or Response Impedance to Resonance Resistance Resistance Resonance Resistance Resistance Resonance Resistance 2:1 - In the frequency range: f₁ -200kHz to f₁ +200kHz 18 Ageing Δf/f -5.0 +5.0 10-6 After burn-in and per year	8	with Temperature	<u>∆</u> f	-20	+20	10-6	
Range Δf Not applicable 10-6 11 Frequency variation with Drive Level ΔR/R Not applicable % 12 Resistance variation with Drive Level ΔR/R Not applicable % 13 Motional Inductance L1 Not applicable mH 14 Motional Capacitance C1 Not applicable fF 15 Static Capacitance C0 - 3.5 pF 16 Q Factor Q 80 000 - - 17 Ratio of Unwanted: Response Resistance or Resonance Resistance or Resonance Resistance or Resonance Resistance Areasonance Resistance Rp/R 2:1 - In the frequency range: fL -200kHz to fL + 200kHz 18 Ageing Δf/f -5.0 +5.0 10-6 After burn-in and per year	9	with Temperature	<u>Δ R</u> R	Not app	Not applicable		
with Drive Level f 12 Resistance variation with Drive Level ΔR/R Not applicable % 13 Motional Inductance L₁ Not applicable mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 3.5 pF 16 Q Factor Q 80 000 - - 17 Ratio of Unwanted: Response Resistance or Resonance Resistance or Resonance Resistance or Resonance Resistance Rp/R 2:1 - In the frequency range: fL -200kHz to fL +200kHz 18 Ageing Δf f f -5.0 +5.0 10-6 After burn-in and per year	10		T _{op}	-20	+ 50	°C	
with Drive Level R 13 Motional Inductance L₁ Not applicable mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 3.5 pF 16 Q Factor Q 80 000 - - 17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Response Impedance to Resonance Resistance Rp/R IZpl/R	11		<u>∆</u> f	Not app	olicable	10-6	
14 Motional Capacitance C ₁ Not applicable fF 15 Static Capacitance C ₀ - 3.5 pF 16 Q Factor Q 80 000 17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing Δf -5.0 +5.0 10-6 After burn-in and per year	12	1	ΔR R	Not app	olicable	%	
15 Static Capacitance C ₀ - 3.5 pF 16 Q Factor Q 80 000 17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing Δ f f -5.0 +5.0 10-6 After burn-in and per year	13	Motional Inductance	L ₁	Not app	olicable	mH	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	14	Motional Capacitance	C ₁	Not app	olicable	fF	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	15	Static Capacitance	Co	-	3.5	pF	
Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	16	Q Factor	Q	80 000	-		-
f year	17	Response Resistance to Resonance Resistance or Response Impedance to		2:1	-		range: f _L -200kHz to
19 Lead Finish - 2	18	Ageing	$\frac{\Delta f}{f}$	-5.0	+5.0	10-6	•
	19	Lead Finish	-	2	2		

PAGE 24

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	2	.8	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	2	0	pF	
5	Rated Drive Level	Po	0.	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-20	+20	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_L	-	50	Ω	Over T _{op} °C
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	Not app	Not applicable		
10	Operating Temperature Range	T _{op}	-30	+ 60	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	olicable	10 ⁻⁶	
12	Resistance variation with Drive Level	Δ <u>R</u> R	Not ap	olicable	%	
13	Motional Inductance	L ₁	Not ap	olicable	mH	
14	Motional Capacitance	C ₁	Not app	olicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	50 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	3:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	Δf f	-5.0	+ 5.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 25

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		I			1	
No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	2.7 t	2.7 to 5.0		
2	Reference Temperature	T _o	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	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	RL		100	Ω	Over T _{op} °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	∆R R	Not ap	Not applicable		
10	Operating Temperature Range	T _{op}	-40	+ 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	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 ap	plicable	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	4:1	-		In the frequency range: f _L -10% to f _L +10%
18	Ageing	<u>∆</u> f	Not ap	Not applicable		
19	Lead Finish		2	2	-	
		<u> </u>				

PAGE 26

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	3.2	768	MHz	·
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	c	χ	рF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-15	+ 15	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R _r	-	100	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	Not ap	Not applicable		
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 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	mΗ	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	4.0	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	$\frac{\Delta f}{f}$	Not ap	Not applicable		
19	Lead Finish	-	2	2	-	

PAGE 27

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	4.0	4.095		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
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 T _o °C
7	Resonance Resistance	R _r	•	15	Ω	At T _o °C
8	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	ΔR R	-10 -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T ₀ °C If R<10Ω
10	Operating Temperature Range	T _{op}	-30	+ 60	°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	157.5	192.5	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	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	3:1	-		In the frequency range: f _r -10kHz to f _r + 10kHz
18	Ageing	$\frac{\Delta f}{f}$	-2.0	+2.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 28

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5	.0	MHz	
2	Reference Temperature	To	+	40	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	-10	+ 10	10 ⁻⁶	At To °C
7	Resonance Resistance	R _r	-	20	Ω	Over T _{op} °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	<u>Δ R</u> R	Not ap	Not applicable		
10	Operating Temperature Range	T _{op}	-10	+ 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	76.5	103.5	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	4.0	pF	
16	Q Factor	Q	100 000	-	-	-
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	Δf f	-10	+10	10-6	Over 5 years of storage and 3000 operating hours
19	Lead Finish	-		2	•	

PAGE 29

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.10	5555	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	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	-	15	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-50	+50	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}	-55	+ 105	°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	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		-	-
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	$\frac{\Delta f}{f}$	-2.0	+2.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 30

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

			Limits			
No.	Characteristics	Symbol	Min.	Max.	Unit	Remarks
1	Resonance Frequency	fL	5.333 t	5.333 to 5.334		
2	Reference Temperature	To	+	15	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	14	40	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	-7.0	+ 7.0	10-6	At T _o °C
7	Resonance Resistance	R _r	_	15	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	Δf f	Not applicable		10 ⁻⁶	
9	Resistance Variation with Temperature over Top	<u>∆R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 60	°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	Not ap	olicable	pF	
16	Q Factor	Q	Not ap	olicable	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	Δf f	Not ap	olicable	10-6	
19	Lead Finish	_		2	-	

PAGE 31

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.66	1448	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	22	33	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	Not ap	plicable	10 ⁻⁶	
7	Resonance Resistance	R _r		25	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	-5.0	+5.0	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}	-30	+60	°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	Not ap	plicable	mΗ	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	C _o	3.2	4.0	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	3:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	<u>Δ</u> f	Not ap	plicable	10-6	
19	Lead Finish	-	2	2	-	

PAGE 32

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	8.7 to	8.7 to 10.7		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	(∞	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		15	Ω	Over T _{op} °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	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-40	+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	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 ap	plicable		-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	4:1	-		In the frequency range: f _r -10% to f _r +10%
18	Ageing	<u>∆</u> f	Not ap	plicable	10 ⁻⁶	
19	Lead Finish	-		2	-	

PAGE 33

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	10	10.0		
2	Reference Temperature	T _o	+	60	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	C	×	рF	
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	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆ f</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	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+70	°C	
11	Frequency variation with Drive Level	<u>∆</u> f	Not ap	plicable	10 ⁻⁶	
12	Resistance variation with Drive Level	ΔR 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	-	4.5	рF	
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	3:1	-		In the frequency range: f _r -200kHz to f _r + 200kHz
18	Ageing	Δf f	-3.0	+3.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 34

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f_L	10	0.0	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	5	50	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	-	20	Ω	Over T _{op} °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	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-10	+80	ů	
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	12.15	16.45	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	100 000	1	•	
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 -500kHz to f _L +500kHz
18	Ageing	Δf f	-2.0	+2.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 35

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	1(0.7	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order		Funda	mental		
4	Load Capacitance	CL	3	30	рF	
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	-	15	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-50	+ 50	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}	-55	+ 105	°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	Not ap	plicable	mΗ	
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	3:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	<u>Δ f</u> f	-2.0	+ 2.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 36

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	1	1.0	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	ımental		
4	Load Capacitance	C _L	3	30	рF	
5	Rated Drive Level	Po	О	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R_L	_	15	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	∆f f	-50	+ 50	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}	-55	+ 105	°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	рF	
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	3:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	<u>∆ f</u> f	-2.0	+ 2.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 37

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	11.43	11.433333		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	2	20	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_L	-	15	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	∆ f f	-8.0	+ 8.0	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}	-20	+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	-	5.0	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 _L -200kHz to f _L +200kHz
18	Ageing	<u>∆</u> f	-2.0	+ 2.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 38

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12	12.8		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	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}	-	15	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-50	+ 50	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-55	+ 105	ů	
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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	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 IZpI/R	3:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	Δf f	-2.0	+ 2.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 39

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	14.7	7456	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	_	Funda	mental		
4	Load Capacitance	C _L	C	×	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	-	25	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆ f</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	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 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	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 IZpI/R	Not applicable			
18	Ageing	<u>Δ f</u>	-5.0	+ 5.0	10-6	After burn-in and per year
19	Lead Finish		2	2	-	

PAGE 40

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	12	2.0	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	(×	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	-	25	Ω	Over T _{op} °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	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	Δf 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	50 000	•	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	∆ f f	-5.0	+ 5.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	_		2	-	

PAGE 41

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12.	288	MHz	
2	Reference Temperature	To	+	60	°C	
3	Overtone Order	_	Funda	mental		
4	Load Capacitance	C _L	20	50	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	RL	-	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 or -1.5 +1.5		% Ω	From resistance measured at T $_{\rm o}$ °C If R < 10 Ω
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	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	4.76	6.44	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	25 000	-		-
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 -200kHz to f _L +200kHz
18	Ageing	Δf f	-10	+ 10	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 42

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	16	15.0		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	_	Funda	mental		
4	Load Capacitance	C _L	2	25	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+ 10	10-6	At To °C
7	Resonance Resistance	RL	-	35	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f 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 +10 or -1.5 +1.5		% Ω	From resistance measured at T $_{0}$ °C If R < 10 Ω
10	Operating Temperature Range	T _{op}	-30	+ 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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	-	8.5	fF	
15	Static Capacitance	Co	-	8.5	рF	
16	Q Factor	Q	65 000	-	-	
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 -200kHz to f _L +200kHz
18	Ageing	Δf f	-10	+10	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 43

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.0)96	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	•	Funda	mental		
4	Load Capacitance	C _L	5	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_L	-	20	Ω	At T _o °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	<u>Δ R</u> R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T_0 °C If $R < 10\Omega$
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	131.75	178.25	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	3:1	•		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	Δf f	-5.0	+5.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 44

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

Characteristics		· · · · · · · · · · · · · · · · · · ·	,	,			
2 Reference Temperature T₀ +25 °C 3 Overtone Order - Fundamental - 4 Load Capacitance CL 50 pF 5 Rated Drive Level P₀ 0.1 mW 6 Frequency Adjustment Tolerance Δf f -10 +10 10-6 At T₀ °C 7 Resonance Resistance RL - 20 Ω At T₀ °C 8 Frequency Variation with Temperature over T₀₀ Δf f -10 +10 10-6 From frequency measured at T₀ °C 9 Resistance Variation with Temperature Pover T₀₀ Top -20 +80 °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 AR Not applicable % 13 Motional Inductance L₁ 131.75 178.25 mH 14		Characteristics	Symbol			Unit	Remarks
3 Overtone Order - Fundamental	1	Resonance Frequency	fL	4.0)96	MHz	
4 Load Capacitance C _L 50 pF 5 Rated Drive Level P _O 0.1 mW 6 Frequency Adjustment Tolerance Aff f 7 Resonance Resistance R _L -10 +10 10-6 At T _O °C 8 Frequency Variation with Temperature over T _{Op} Affer burn-in and per year 9 Resistance Variation with Temperature over T _{Op} Affer burn-in and per year 10 Operating Temperature Ratio Affer burn-in and per year 11 Frequency variation with Drive Level Affer burn-in and per year 12 Resistance variation with Drive Level Affer burn-in and per year 13 Motional Inductance C _O -5.0 +5.0 10-6 14 Ageing Affer burn-in and per year 15 Ageing Affer burn-in and per year 16 Q Factor After burn-in and per year 17 Ratio of Unwanted: Response Resistance to Resonance Resistance 18 Ageing Affer burn-in and per year 19 Operation Affer burn-in and per year 10 Operation After burn-in and per year 11 Frequency variation with Drive Level After burn-in and per year 12 Resistance variation with Drive Level Affer burn-in and per year 10 After burn-in and per year 11 Affer burn-in and per year 12 Affer burn-in and per year 13 Ageing Affer burn-in and per year 14 Affer burn-in and per year 15 Affer burn-in and per year 16 After burn-in and per year 17 Affer burn-in and per year 18 Ageing Affer burn-in and per year 19 Operation Affer burn-in and per year 10 Operation Affer burn-in and per year 10 Operation Affer burn-in and per year 11 Affer burn-in and per year 12 Affer burn-in and per year 13 Affer burn-in and per year 14 Affer burn-in and per year 15 Affer burn-in and per year 16 Affer burn-in and per year 17 Affer burn-in and per year 18 Affer burn-in and per year 18 Affer burn-in and per year 18 Affer burn-in and per year 19 Affer burn-in and per year 10 Affer b	2	Reference Temperature	To	+	25	°C	
Fated Drive Level Po O.1 mW	3	Overtone Order	_	Funda	mental		
6 Frequency Adjustment Tolerance Δf f -10 +10 10-6 At To °C 7 Resonance Resistance RL - 20 Ω At To °C 8 Frequency Variation with Temperature over Top Δf -10 +10 10-6 From frequency measured at To °C 9 Resistance Variation with Temperature over Top ΔR R -10 +10 % From resistance measured at To °C if R<10Ω	4	Load Capacitance	C _L	5	0	pF	
Tolerance	5	Rated Drive Level	Po	0	.1	mW	
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 15 Static Capacitance 16 Q Factor 17 Ratio of Unwanted: Response Resistance to Resonance Resistance to Resonance Resistance over Resistance Resistance to Resonance Resistance (Paper Resonance Resistance) 18 Ageing Ageing A R -10 +10 % From resistance measured at To °C 10 Hold 10 Static Capacitance 10 +10 % From resistance measured at To °C 10 Not applicable 10 C 10 Static Capacitance 10 C 11 10 From resistance measured at To °C 10 Not applicable 10 Static Capacitance 11 Frequency variation with Drive Level 12 Resistance variation with Drive Level 13 Motional Inductance 14 Motional Capacitance 15 Static Capacitance 16 C From resistance 17 Ratio of Unwanted: 18 Response Resistance to Resistance 18 Response Impedance to Resistance 18 Ageing 10 -10 Motional Inductance 10 From resistance measured at To °C 10 From resistance measured at To °C 10 Static Capacitance 10 From resistance measured at To °C	6		<u>Δ f</u> f	-10	+ 10	10 ⁻⁶	At To °C
with Temperature over Top f measured at To °C 9 Resistance Variation with Temperature over Top ΔR/R -10 +10 or -1.5 +1.5 Ω From resistance measured at To °C if R<10Ω	7	Resonance Resistance	R_{L}	-	20	Ω	At T _o °C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8	with Temperature	<u>∆ f</u> f	-10	+ 10	10 ⁻⁶	
Range	9	with Temperature	ΔR R		or		measured at To °C
with Drive Level f Image: Free Foundation with Drive Level AR R Not applicable Methods % 13 Motional Inductance L₁ 131.75 178.25 mH 14 Motional Capacitance C₁ Not applicable Methods fF 15 Static Capacitance C₀ - 7.0 pF 16 Q Factor Q 80 000 - - 17 Ratio of Unwanted: Response Resistance or Resonance Resistance or Resonance Resistance or Resonance Resistance or Resonance Resistance Rp/R IZpI/R 3:1 - In the frequency range: fL -200kHz to fL +200kHz 18 Ageing Δf f f -5.0 +5.0 10-6 After burn-in and per year	10		T _{op}	-20	+80	°C	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	11		Δf f	Not ap	plicable	10-6	
14 Motional Capacitance	12	1	ΔR R	Not ap	plicable	%	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	13	Motional Inductance	L ₁	131.75	178.25	mH	
16 Q Factor Q 80 000 17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing Δf -5.0 +5.0 10-6 After burn-in and per year	14	Motional Capacitance	C ₁	Not ap	plicable	fF	
17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing	15	Static Capacitance	Co	-	7.0	pF	
Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	16	Q Factor	Q	80 000		-	
f year	17	Response Resistance to Resonance Resistance or Response Impedance to	ľ	3:1	_		range: f _L -200kHz to
19 Lead Finish - 3 or 4	18	Ageing	Δf f	-5.0	+ 5.0	10 ⁻⁶	1
	19	Lead Finish	<u>-</u>	3 0	or 4	-	

PAGE 45

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	19.10	19.109567		
2	Reference Temperature	T _o	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	C	8	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	-	15	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	<u>Δ R</u> R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-30	+ 60	°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	2.25	2.75	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	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	Not applicable			
18	Ageing	$\frac{\Delta f}{f}$	-1.0	+ 1.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 46

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Limits Min. Max.		Unit	Remarks
			Min.	Max.		
1	Resonance Frequency	f _r	6	6.4		
2	Reference Temperature	T _o	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	(∞	рF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u> f	-10	+ 10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R _r	•	180	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	<u>Δ R</u> R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T_0 °C If R<10 Ω
10	Operating Temperature Range	T _{op}	-20	+60	°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	mΗ	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	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	Δf f	-3.0	+ 3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 47

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	7	7.0		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	(x	рF	
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	-	180	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	<u>∆R</u> R	-10	+10	%	From resistance
	with Temperature over T _{op}	K	or -1.5 + 1.5		Ω	measured at T _o $^{\circ}$ C If R < 10 Ω
10	Operating Temperature Range	T _{op}	-20	+60	°C	
11	Frequency variation with Drive Level	Δf 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 ap	oplicable	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	<u>Δ f</u> f	-3.0	+ 3.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 48

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12	12.0		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	рF	
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		180	Ω	At To °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	∆R R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T_0 °C If $R < 10\Omega$
10	Operating Temperature Range	T _{op}	-20	+ 60	°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	рF	
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	Not applicable			
18	Ageing	Δf f	-3.0	+ 3.0	10-6	After burn-in and per year
19	Lead Finish	_	2	2	-	

PAGE 49

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
			iviin.	iviax.		
1	Resonance Frequency	f∟	15	15.0		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	•	Funda	mental		
4	Load Capacitance	CL	20	50	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	RL	-	20	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆</u>	-40	+ 40	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}	-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	Not ap	plicable	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	Not applicable			
18	Ageing	<u>Δ f</u>	-3.0	+ 3.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 50

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	6	.4	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	рF	
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_{L}	-	20	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 -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T_0 °C If $R < 10\Omega$
10	Operating Temperature Range	T _{op}	-20	+60	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	<u>∆ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	-	50	mΗ	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	150 000	-	•	-
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	<u>Δ f</u>	-3.0	+ 3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 51

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	7.	.0	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
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	RL	-	20	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	-10 c -1.5	or		From resistance measured at T_0 °C If $R < 10\Omega$
10	Operating Temperature Range	T _{op}	-20	+ 60	°C	
11	Frequency variation with Drive Level	Δf 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	-	40	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	100 000	•	•	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	3:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	<u>Δ f</u> f	-3.0	+3.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 52

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No. Characteristics Symbol Min. Limits Max. Unit Remarks 1 Resonance Frequency f _L 12.0 MHz 4 2 Reference Temperature T _O +40 °C 4 3 Overtone Order - Fundamental 4 Load Capacitance C _L 50 pF 4 Load Capacitance C _L 50 pF 4 5 Rated Drive Level P _O 0.1 mW 4 6 Frequency Adjustment Tolerance Δf -10 +10 10-6 At T _O °C 7 Resonance Resistance R _L - 13 Ω At T _O °C 8 Frequency Variation with Temperature over T _{Op} Δf +15 +15 10-6 From frequency measured at T _O °C 9 Resistance Variation with Temperature ange T _O -20 +80 °C 11 Frequency variation with Drive Level T _O Not aplicable % From resistance measured at T _O °C		T					
2 Reference Temperature T₀ +40 °C 3 Overtone Order - Fundamental 4 Load Capacitance CL 50 pF 5 Rated Drive Level P₀ 0.1 mW 6 Frequency Adjustment Tolerance Δf -10 +10 10-6 At T₀ °C 7 Resonance Resistance RL - 13 Ω At T₀ °C 8 Frequency Variation with Temperature over T₀₀ Δf +15 +15 10-6 From frequency measured at T₀ °C 9 Resistance Variation with Temperature over T₀₀ T₀₀ -10 +10 % From resistance measured at T₀ °C 10 Operating Temperature Range T₀₀ -20 +80 °C 11 Frequency variation with Drive Level Δf Not applicable 10-6 12 Resistance variation with Drive Level Δf Not applicable % 13 Motional Inductance L₁ 6.97 9.43 mH	No.	Characteristics	Symbol		· ···· · · · · · · · · · · · · · · · ·	Unit	Remarks
3 Overtone Order - Fundamental - Fundamental - 4 Load Capacitance C _L 50 pF 5 Rated Drive Level P _O 0.1 mW 6 Frequency Adjustment Δ f f -10 +10 10-6 At T _O °C 7 Resonance Resistance R _L - 13 Ω At T _O °C 8 Frequency Variation with Temperature over T _{Op} -15 +15 10-6 From frequency measured at T _O °C 9 Resistance Variation with Temperature over T _{Op} -1.5 +1.5 Ω From resistance measured at T _O °C 10 Operating Temperature Range T _{Op} -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 L ₁ 6.97 9.43 mH 14 Motional Capacitance C ₁ Not applicable fF 15 Static Capacitance C ₀ - 7.0 pF 16 Q Factor Q 75 000 - - 17 Ratio of Unwanted: Response Resistance or Response Resistance to Response Resistance to Response Resistance or Response Impedance to Response Resistance	1	Resonance Frequency	fL	1:	12.0		
4 Load Capacitance	2	Reference Temperature	To	+	40	°C	
Fated Drive Level Po O.1 mW	3	Overtone Order	-	Funda	mental		
Frequency Adjustment Tolerance Frequency Adjustment Tolerance Resonance Resistance RL - 13 Ω At To °C Frequency Variation with Temperature over Top Personance Variation with Temperature over Top Operating Temperature Top Top Top Top Top Top Top To	4	Load Capacitance	C _L	5	50	pF	
Tolerance F	5	Rated Drive Level	Po	0	.1	mW	
8 Frequency Variation with Temperature over Top Resistance Variation with Temperature over Top Resistance Variation with Temperature over Top Promote Top Pro	6		<u>Δ f</u> f	-10	+ 10	10-6	At To °C
with Temperature over Top f Image: From resistance over the power than the powe	7	Resonance Resistance	R_L	•	13	Ω	At To °C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8	with Temperature	<u>Δ f</u> f	-15	+ 15	10 ⁻⁶	
Range Af Not applicable 10-6 11 Frequency variation with Drive Level Δf Not applicable % 12 Resistance variation with Drive Level ΔR/R Not applicable % 13 Motional Inductance L₁ 6.97 9.43 mH 14 Motional Capacitance C₁ Not applicable fF 15 Static Capacitance C₀ - 7.0 pF 16 Q Factor Q 75 000 - - 17 Ratio of Unwanted: Resistance or Resistance or Resistance or Resistance and Place of Library in the frequency of Library in the firety of Library in the frequency in the firety of Library in the firety of Library in the firety of Library in the frequency in the firety of Library in the firety	9	with Temperature	<u>Δ R</u> R	(or		measured at To °C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	10		T _{op}	-20	+80	°C	
with Drive Level R R B	11		<u>Δ f</u> f	Not ap	plicable	10-6	
14 Motional Capacitance C ₁ Not applicable fF 15 Static Capacitance C ₀ - 7.0 pF 16 Q Factor Q 75 000 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing Ageing Ageing Ageing And Ageing	12			Not ap	plicable	%	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	13	Motional Inductance	L ₁	6.97	9.43	mΗ	
16 Q Factor Q 75 000 -	14	Motional Capacitance	C ₁	Not ap	plicable	fF	
17 Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing	15	Static Capacitance	Co	-	7.0	pF	
Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance 18 Ageing $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	16	Q Factor	Q	75 000		-	
f year	17	Response Resistance to Resonance Resistance or Response Impedance to		3:1	-		range: f _L -200kHz to
19 Lead Finish - 2	18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	· ·
	19	Lead Finish	-		2	-	

PAGE 53

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.6	4.608		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
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	R_L		20	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-12	+ 12	10 ⁻⁶	From frequency measured at T ₀ °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10 -1.5	or		From resistance measured at T_0 °C If $R < 10\Omega$
10	Operating Temperature Range	T _{op}	-35	+ 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	-20	+ 20	%	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.2$ mW
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	рF	
16	Q Factor	Q	800 000		-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	$\frac{\Delta f}{f}$	-10	+ 10	10-6	After burn-in, after 5 years
19	Lead Finish	-		2	-	

PAGE 54

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	10	0.0	MHz	
2	Reference Temperature	To	+	40	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C_L	5	50	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		13	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>∆ f</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 or -1.5 +1.5		% Ω	From resistance measured at T_0 °C If R < 10 Ω
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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	10	pF	
16	Q Factor	Q	50 000	-	-	
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	Δf f	-3.0	+ 3.0	10-6	After burn-in and per year
19	Lead Finish	_	2	2	-	

PAGE 55

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	13	13.3		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u> f	-10	+ 10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	RL	•	20	Ω	At T _o °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	<u>Δ R</u> R	-10	+ 10	%	From resistance
	with Temperature over T _{op}		-1.5	or -1.5 +1.5		measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-35	+ 70	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR R	-20	+20	%	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.2$ mW
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	10	pF	
16	Q Factor	Q	100 000	•	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	$\frac{\Delta f}{f}$	-10	+10	10-6	After burn-in, after 5 years
19	Lead Finish	-		2	-	

PAGE 56

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	3.2	3.2768		
2	Reference Temperature	T _o	+	27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	27	33	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+ 10	10-6	At To °C
7	Resonance Resistance	RL	-	180	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-5.0	+5.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-10 -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T ₀ °C If R<10Ω
10	Operating Temperature Range	T _{op}	-20	+ 50	°C	
11	Frequency variation with Drive Level	Δf f	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	300	400	mН	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	рF	
16	Q Factor	Q	50 000	-	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpl/R	2:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	Δf f	-3.0	+3.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 57

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	8	8.0		
2	Reference Temperature	To	+ 25	+ 29	°C	
3	Overtone Order	_	Funda	mental		
4	Load Capacitance	CL	3	30	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	-20	+20	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_{L}	-	13	Ω	Over T _{op} °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	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+50	°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	23	30	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	100 000	•	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpl/R	Not applicable			
18	Ageing	Δf f	-5.0	+ 5.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 58

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	6.	0	MHz	
2	Reference Temperature	To	+ ;	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	1	6	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	-	50	Ω	At To °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-50	+50	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	∆R R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T $_{\rm o}$ °C If R<10 Ω
10	Operating Temperature Range	T _{op}	-20	+ 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> R	Not apı	olicable	%	
13	Motional Inductance	L ₁	Not app	olicable	mH	
14	Motional Capacitance	C ₁	Not app	olicable	fF	
15	Static Capacitance	Co	Not app	olicable	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	Not applicable			
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 59

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.6	4.608		
2	Reference Temperature	To	. +	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	27	33	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_{L}		20	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-15	+ 15	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation	$\frac{\Delta R}{R}$	-10	+ 10	%	From resistance measured at T _o °C If R<10Ω
	with Temperature over Top	"	-1.5	or + 1.5	Ω	
10	Operating Temperature Range	T _{op}	-35	+ 70	°C	
11	Frequency variation with Drive Level	Δf 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	70 000	-	a i	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	<u>Δ f</u> f	-3.0	+3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-	2	2	-	

Rev. 'A'

PAGE 60

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.6	4.608		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-8.0	+8.0	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_L	•	10	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-15	+ 15	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T_0 °C If R < 10Ω
10	Operating Temperature Range	T _{op}	-40	+ 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	-20	+ 20	%	From $P_{S1} = 0.05 \text{mW}$ to $P_{S2} = 0.2 \text{mW}$
13	Motional Inductance	L ₁	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co		7.0	рF	
16	Q Factor	Q	400 000	-	-	•
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	<u>∆</u> f	-10	+10	10-6	After burn-in over 5 years
19	Lead Finish	-		2	-	

PAGE 61

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.0		MHz	
2	Reference Temperature	T _o	+	25	°C	·
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	2	:7	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	1	200	Ω	Over T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</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	T _{op}	-40	+ 70	°C	
11	Frequency variation with Drive Level	Δf f	Not applicable		10-6	
12	Resistance variation with Drive Level	<u>∆ R</u> R	Not ap	plicable	%	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.2$ mW
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 ap	plicable	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	<u>Δ f</u> f	-50	+50	10 ⁻⁶	Over 6 years
19	Lead Finish	-		2	-	

PAGE 62

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		1				
No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	3.2	768	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order		Funda	mental		
4	Load Capacitance	CL	20	50	рF	
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	-	12	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-5.0	+ 5.0	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
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	200	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	•	2.7	pF	
16	Q Factor	Q	400 000	-	-	-
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 -300kHz to f _L +300kHz
18	Ageing	Δf f	-5.0	+ 5.0	10-6	After burn-in, per year
19	Lead Finish	-		2	-	

PAGE 63

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.0	4.096		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	5	0	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_L	-	20	Ω	Over T _{op} °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	<u>∆R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-10	+ 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	78	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	100 000	-	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	3:1	-		In the frequency range: f _L -400kHz to f _L +400kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10 ⁻⁶	After burn-in, per year
19	Lead Finish	-		2	-	



PAGE 64

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5	5.0		
2	Reference Temperature	T _o	+	40	°C	·
3	Overtone Order		Funda	mental		
4	Load Capacitance	CL	3	30	ρF	
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	-	20	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-8.0	+8.0	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}	-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	64	•	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	·
15	Static Capacitance	Co	-	4.0	pF	
16	Q Factor	Q	100 000	•	-	
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	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	After burn-in, per year
19	Lead Finish	-		2	-	

PAGE 65

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5	.0	MHz	:
2	Reference Temperature	To	+	40	°C	
3	Overtone Order		Funda	mental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-10	+ 10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_L	-	20	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	-10	+ 10	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-10	+ 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	64	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	4.0	pF	
16	Q Factor	Q	100 000	-	1	
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 -300kHz to f _L +300kHz
18	Ageing	$\frac{\Delta f}{f}$	-10	+ 10	10-6	After burn-in, per year
19	Lead Finish	-	2	2	-	

PAGE 66

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	10	10.0		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	5	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_{L}	-	20	Ω	Over T _{op} °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	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-10	+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	32	-	mH	
14	Motional Capacitance	C ₁	Not ap	olicable	fF	
15	Static Capacitance	Co	-	5.0	рF	
16	Q Factor	Q	100 000	-	-	
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 -500kHz to f _L +500kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10 ⁻⁶	After burn-in, per year
19	Lead Finish	-		2	-	

PAGE 67

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	1:	12.0		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL		∞	pF	
5	Rated Drive Level	Po	O).1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	-10	+ 10	10 ⁻⁶	At To °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	<u>Δ R</u> R	-10 (-1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	Δf f	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	24	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	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 -300kHz to f _r +300kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	After burn-in, per year
19	Lead Finish	-		2	-	

PAGE 68

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	12	12.0		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	C	×	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	-	20	Ω	At T _o °C
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	<u>Δ R</u> R	-10 c -1.5	or		From resistance measured at T_o °C If R < 10 Ω
10	Operating Temperature Range	T _{op}	-40	+ 85	°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	8.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	•	5.0	pF	
16	Q Factor	Q	80 000	_	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _r -300kHz to f _r +300kHz
18	Ageing	Δf f	-3.0	+3.0	10-6	After burn-in, per year
19	Lead Finish	-	2	2	-	

PAGE 69

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	13.	332	MHz	
2	Reference Temperature	To	+	40	°C	
3	Overtone Order		Funda	mental		
4	Load Capacitance	C _L	5	0	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	RL	-	13	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over T _{op}	<u>∆</u> f f	-8.0	+8.0	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}	-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	8.0		mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	рF	
16	Q Factor	Q	50 000	•		
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 -1.0MHz to f _L +1.0MHz
18	Ageing	Δf f	-3.0	+ 3.0	10-6	After burn-in, per year
19	Lead Finish	_		2	-	

PAGE 70

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.24	1288	MHz	
2	Reference Temperature	To	+	60	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	2	2	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	_	13	Ω	Over T _{op} °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	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-40	+ 85	°C	
11	Frequency variation with Drive Level	<u>∆</u> f	Not ap	plicable	10 ⁻⁶	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	olicable	%	
13	Motional Inductance	L ₁	20	-	mH	
14	Motional Capacitance	C ₁	Not ap	olicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	50 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	3:1	-		In the frequency range: f _L -525kHz to f _L + 525kHz
18	Ageing	Δf f	-3.0	+3.0	10 ⁻⁶	After burn-in, per year
19	Lead Finish	-	2	2	-	

PAGE 71

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	3	3.2		
2	Reference Temperature	T _o	+ 25	+29	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	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	RL		50	Ω	Over T _{op} °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	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+70	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR 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	рF	
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 _L -200kHz to f _L +200kHz
18	Ageing	∆f f	-2.0	+2.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-	2	2	*	

PAGE 72

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL		4.0		
2	Reference Temperature	To	+23	+27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	;	30	pF	
5	Rated Drive Level	Po	().1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+10	10-6	At T _o °C
7	Resonance Resistance	RL	-	25	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-12	+12	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-40	+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	230	_	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	рF	
16	Q Factor	Q	125 000	-	PP.	-
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	<u>Δ f</u> f	-3.0	+3.0	10-6	After burn-in, per year
19	Lead Finish	-	2	2	-	

PAGE 73

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.19	4.194304		At cut
2	Reference Temperature	To	+	30	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+ 10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	RL	1	10	Ω	At T _o °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	<u>Δ R</u> R	-10 c -1.5	+ 10 or + 1.5	%	From resistance measured at T $_0$ °C If R < 10 Ω
10	Operating Temperature Range	T _{op}	-10	+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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	_	4.0	pF	
16	Q Factor	Q	200 000	=	-	
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 -200kHz to f _L +200kHz
18	Ageing	<u>∆ f</u> f	-10	+10	10 ⁻⁶	Over 5 years of storage and 3000 hours operating
19	Lead Finish	-	2	2	-	



PAGE 74

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12.25		MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	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	R_{L}	-	20	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-10	+10	10 ⁻⁶	From frequency measured at T ₀ °C
9	Resistance Variation	<u>Δ R</u> R	-10	+10	%	From resistance
	with Temperature over T _{op}	Γ .	-1.5	or + 1.5	Ω	measured at T _o °C If R<10Ω
10	Operating Temperature Range	Тор	-20	+ 70	°C	
11	Frequency variation with Drive Level	Δf 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	12.6	15.4	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	3.0	рF	
16	Q Factor	Q	100 000	-	**	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance	Rp/R				In the frequency range:
	or		25:1 4:1	-		f _L ±30kHz f _L - 50 to f _L -500kHz
	Response Impedance to Resonance Resistance	IZpI/R				and f _L +50 to f _L +500kHz
18	Ageing	Δf f	-10	+10	10-6	After burn-in, over 5 years
19	Lead Finish	-	2	2	-	

PAGE 75

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		T	T		T	T
No.	Characteristics	Symbol	Liı Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	6	6.0		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	amental		
4	Load Capacitance	C _L	;	30	pF	
5	Rated Drive Level	Po	().1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10-6	At T _o °C
7	Resonance Resistance	RL	-	50	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 -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	Тор	-40	+ 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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	olicable	fF	
15	Static Capacitance	Co	Not app	olicable	pF	
16	Q Factor	Q	600 000	-	<u>-</u>	
	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			-
18	Ageing	$\frac{\Delta f}{f}$	-10	+10	10 ⁻⁶	After burn-in, over 5 years
19	Lead Finish	-	2		-	

PAGE 76

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

		T			I	· _ · · · · · · · · · · · · · · · · · ·
No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	9.66 to	9.66 to 10.65		
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL		50	pF	
5	Rated Drive Level	Po	C).1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+10	10-6	At To °C
7	Resonance Resistance	RL	-	15	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	<u>∆ 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	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 70	°C	
11	Frequency variation with Drive Level	Δf 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	olicable	fF	
15	Static Capacitance	Co	Not app	olicable	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	4:1	-		In the frequency range: f _L -500kHz to f _L +500kHz
18	Ageing	$\frac{\Delta f}{f}$	-2.0	+2.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 77

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Li Min.	mits Max.	- Unit	Remarks
1	Resonance Frequency	fL	4.	.096	MHz	
2	Reference Temperature	To	-	+ 2 5	°C	
3	Overtone Order	-	Fund	amental		
4	Load Capacitance	CL		50	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	RL	-	20	Ω	Over T _{op} °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	ΔR R	Not ap	Not applicable		
10	Operating Temperature Range	T _{op}	-10	+ 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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	100 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	3:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	<u>Δ f</u> f	Not ap	Not applicable		
19	Lead Finish	_	2	2	-	

PAGE 78

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Liı Min.	mits Max.	- Unit	Remarks
1	Resonance Frequency	fL	4.19	4.194304		
2	Reference Temperature	To	+	- 60	°C	
3	Overtone Order	-	Funda	amental		
4	Load Capacitance	C _L		22	pF	
5	Rated Drive Level	Po	().1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-10	+ 10	10-6	At T _o °C
7	Resonance Resistance	RL	-	13	Ω	Over Top °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	-15	+15	10-6	From frequency measured at To °C
9	Resistance Variation with Temperature over Top	ΔR R	Not ap	Not applicable		
10	Operating Temperature Range	T _{op}	-20	+70	°C	
11	Frequency variation with Drive Level	<u>∆ f</u> f	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR 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	50 000		_	
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	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	After burn-in and per year
19	Lead Finish	-	2		-	

PAGE 79

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Min.	imits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.2	5.24288		
2	Reference Temperature	T _o		+ 60	°C	
3	Overtone Order	-	Fund	amental		
4	Load Capacitance	CL		22	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	RL	-	13	Ω	Over Top °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	Not a	oplicable	%	
10	Operating Temperature Range	Тор	-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	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	50 000	-	-	
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	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 80

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Li Min.	mits Max.	Unit	Remarks
1	Resonance Frequency	fL		8.0		
2	Reference Temperature	То	+	-60	°C	
3	Overtone Order	-	Funda	amental		
4	Load Capacitance	CL		22	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	-	13	Ω	Over T _{op} °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>∆ R</u> R	Not ap	Not applicable		
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	Not ap	plicable	pF	
16	Q Factor	Q	50 000	-	-	
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	Δf f	-3.0	+3.0	10-6	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 81

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	13.	332	MHz	
2	Reference Temperature	T _o	+	40	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	5	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_{L}	-	13	Ω	Over T _{op} °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	Not applicable		%	
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	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	50 000	-	-	
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	$\frac{\Delta f}{f}$	-3.0	+3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 82

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.19	4304	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	10	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_{L}	-	40	Ω	At T _o °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	<u>Δ R</u> R	-10 (-1.5	+ 10 or + 1.5	% Ω	From resistance measured at T_0 °C If R < 10Ω
10	Operating Temperature Range	T _{op}	-30	+ 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	120	-	mH	
14	Motional Capacitance	C ₁	-	-	fF	
15	Static Capacitance	Co	-	4.0	pF	
16	Q Factor	Q	300 000	•	ı	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	<u>Δ f</u> f	-3.0	+ 3.0	10 ⁻⁶	After burn-in, over 5 years
19	Lead Finish	-		2	-	

PAGE 83

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin	nits	Unit	Remarks
NO.	Characteristics	Symbol	Min.	Max.	Offic	nemarks
1	Resonance Frequency	fL	12	12.25		
2	Reference Temperature	T _o	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	2	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u>	-8.0	+8.0	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_L	•	100	Ω	At T _o °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 or -1.5 +1.5		% Ω	From resistance measured at T $_{\rm o}$ °C If R < 10 Ω
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	4.5	5.5	mH	
14	Motional Capacitance	C ₁	-	-	fF	
15	Static Capacitance	Co	-	3.0	pF	
16	Q Factor	Q	30 000	-	-	
17	Unwanted Response Resistance	Rp	25	•	kΩ	In the frequency range: f _L -30kHz to f _L +30kHz
18	Ageing	<u>Δ f</u> f	-10	+ 10	10-6	After burn-in, over 5 years
19	Lead Finish	-	:	2	-	



PAGE 84

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	4.0	4.096		
2	Reference Temperature	T _o	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	C	8	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	Over T _{op} °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	Not applicable		%	
10	Operating Temperature Range	T _{op}	-30	+80	ů	
11	Frequency variation with Drive Level	<u>Δ f</u> f	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR 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	75 000	-	-	
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 _r -200kHz to f _r +200kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+ 3.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 85

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lim Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	4.194304		MHz	
2	Reference Temperature	T _o	+	25	°C	
3	Overtone Order	-	Funda	mental		
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	-	50	Ω	Over T _{op} °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	Not applicable		%	
10	Operating Temperature Range	T _{op}	-30	+ 80	°C	
11	Frequency variation with Drive Level	<u>∆ f</u> f	Not ap	olicable	10-6	
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	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	pF	
16	Q Factor	Q	75 000	-	-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	3:1	-		In the frequency range: f _r -10% to f _r +10%
18	Ageing	Δ f f	-3.0	+3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-	2	2	-	

PAGE 86

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.24	5.24288		
2	Reference Temperature	To	+20	+ 30	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	2	2	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	•	13	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-15	+ 15	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}	-20	+ 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	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	50 000	-	-	=
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	Δf f	-3.0	+3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-	2	2	•	

PAGE 87

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12.25		MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	_	Funda	mental		
4	Load Capacitance	CL	3	2	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-8.0	+ 8.0	10 ⁻⁶	At To °C
7	Resonance Resistance	RL	-	10	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>∆</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}	-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	9.0	11	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	10:1	-		In the frequency range: f _L -300kHz to f _L +200kHz
18	Ageing	$\frac{\Delta f}{f}$	-10	+10	10-6	After burn-in, over 5 years
19	Lead Finish	-		2	-	

PAGE 88

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5	.0	MHz	
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	20	40	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_L	_	10	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	$\frac{\Delta f}{f}$	-2.5	+ 2.5	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10 (-1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-10	+ 40	°C	
11	Frequency variation with Drive Level	Δf f	Not ap	plicable	10 ⁻⁶	
12	Resistance variation with Drive Level	ΔR R	Not ap	plicable	%	
13	Motional Inductance	L ₁	70	120	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	3.0	5.0	pF	
16	Q Factor	Q	350 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	∆ f f	-65	+ 65	10-6	After burn-in, per year
19	Lead Finish	_		2	-	

PAGE 89

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f <u>L</u>	5	5.0		
2	Reference Temperature	T _o	+ 25	+ 29	°C	
3	Overtone Order	•	Funda	mental		
4	Load Capacitance	C_L	3	10	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_L	-	30	Ω	At T _o °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	<u>Δ R</u> R	-10 (-1.5	or		From resistance measured at T _o °C If R < 10Ω
10	Operating Temperature Range	T _{op}	-20	+70	°C	
11	Frequency variation with Drive Level	∆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	200 000	-	•	
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 -200kHz to f _L +200kHz
18	Ageing	<u>Δ f</u> f	-3.0	+ 3.0	10 ⁻⁶	After burn-in, per year
19	Lead Finish	_		2	-	

PAGE 90

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12.0		MHz	
2	Reference Temperature	T _o	+ 25	+ 29	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	0	рF	
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_{L}	•	30	Ω	At T _o °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	<u>Δ R</u> R	-10 + 10 or -1.5 + 1.5		% Ω	From resistance measured at T_o °C If R<10 Ω
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	Not ap	plicable	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 _L -200kHz to f _L +200kHz
18	Ageing	Δf f	-3.0	+3.0	10 ⁻⁶	After burn-in, per year
19	Lead Finish	-	2	2	-	

PAGE 91

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	11	11.0		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	d	8	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	-	15	Ω	At To °C
8	Frequency Variation with Temperature over Top	Δf f	-12	+ 12	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10 c -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-20	+ 80	°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	11.2	16.8	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 IZpI/R	2:1	-		In the frequency range: f _r -200kHz to f _r +200kHz
18	Ageing	Δf f	-3.0	+3.0	10 ⁻⁶	After burn-in, per year
19	Lead Finish	-		2	-	

PAGE 92

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12	12.0		Swept
2	Reference Temperature	T _o	+23	+27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	31.7	32.3	рF	
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	-	20	Ω	At To °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	-2.0	+ 20 or + 2.0 r is greater	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-25	+90	°C	
11	Frequency variation with Drive Level	<u>Δ f</u>	Not ap	plicable	10 ⁻⁶	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	7.0	-	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	рF	
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	<u>-</u>		In the frequency range: f _L -300kHz to f _L +300kHz
18	Ageing	Δf f	-3.0	+3.0	10 ⁻⁶	After burn-in, per year over 3 years
19	Lead Finish	-		2	-	

PAGE 93

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol		nits	Unit	Remarks
		- y · · · · · ·	Min.	Max.		
1	Resonance Frequency	f∟	4.9152		MHz	
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	∆ f f	-10	+ 10	10-6	At To °C
7	Resonance Resistance	R_L	-	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-20	+20	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	∆R R	-10 c -2.0	+ 10 or + 2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-20	+60	°C	
11	Frequency variation with Drive Level	∆ f f	Not ap	plicable	10-6	
12	Resistance variation with Drive Level	ΔR 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	250 000	-	-	_
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 -200kHz to f _L +200kHz
18	Ageing	$\frac{\Delta f}{f}$	-2.0	+ 2.0	10 ⁻⁶	Per year after burn-in
19	Lead Finish	-		2	-	

PAGE 94

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	15.0		MHz	
2	Reference Temperature	T _o	+23	+27	°C	
3	Overtone Order	1	Funda	mental		
4	Load Capacitance	C_{L}	3	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_L	1	20	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	∆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}	-40	+ 85	ů	
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	mΗ	
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	Rp/R IZpI/R	2:1	•		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	<u>Δ f</u> f	-1.0	+ 1.0	10-6	Per year after burn-in
19	Lead Finish	-		2	-	

PAGE 95

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	7	7.5		
2	Reference Temperature	To	+ 23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	-50	+ 50	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_L		30	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>Δ R</u> R	-10 (-1.5	+ 10 or + 1.5	% Ω	From resistance measured at T_0 °C If $R < 10\Omega$
10	Operating Temperature Range	T _{op}	-20	+ 50	°C	
11	Frequency variation with Drive Level	Δf 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	-	5.0	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 _L -200kHz to f _L + 200kHz
18	Ageing	Δf f	-10	+ 10	10 ⁻⁶	Over 10 years
19	Lead Finish	-		2	-	

PAGE 96

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin M in.	nits Max.	Unit	Remarks
1	Resonance Frequency	f_L	8.194442		MHz	
2	Reference Temperature	T _o	+ 23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	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_L	-	40	Ω	At T _o °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	ΔR R	-10 c -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-20	+50	°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	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 _L -200kHz to f _L + 200kHz
18	Ageing	$\frac{\Delta f}{f}$	-5.0 -10	+ 5.0 + 10	10 ⁻⁶	After burn-in. Over 10 years
19	Lead Finish	-		2	-	

PAGE 97

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	1(10.0		
2	Reference Temperature	T _o	+2	25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	9	80	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	-50	+ 50	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_{L}	•	30	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-50	+ 50	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-40	+ 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	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 ap	plicable	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	Not applicable			
18	Ageing	<u>Δ f</u> f	-50	+ 50	10-6	Over 5 years
19	Lead Finish	-		2	-	

PAGE 98

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f∟	4	4.0		Synthetic swept
2	Reference Temperature	T _o	+	25	°C	High temperature cured
3	Overtone Order	-	Funda	mental		AT cut
4	Load Capacitance	CL	5	50	рF	
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_{L}	-	20	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-15	+ 15	10 ⁻⁶	From frequency measured at T _o °C measured each 2.5°C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	Not applicable		%	
10	Operating Temperature Range	T _{op}	-35	+ 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	рF	
16	Q Factor	Q	100 000		-	-
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	<u>Δ f</u>	-5.0	+5.0	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 99

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	8.3	8.388		
2	Reference Temperature	T _o	+23	+27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	$\frac{\Delta f}{f}$	-20	+20	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_{L}	•	40	Ω	At T _o °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>Δ R</u> R	-10 (-1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-10	+50	°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	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	Δf f	-5.0	+ 5.0	10 ⁻⁶	Per year after burn-in at T ₀
19	Lead Finish	-		2	-	

PAGE 100

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	4.19	4.194304		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	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	RL	-	40	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	-15	+ 15	10-6	From frequency measured at T _o °C
9	Resistance Variation	ΔR R	-10	+ 10	%	From resistance
	with Temperature over T _{op}	K	-1.5	or -1.5 + 1.5		measured at T_0 °C If R<10 Ω
10	Operating Temperature Range	T _{op}	-30	+ 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	Not ap	olicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	200 000	-	.	
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 -200kHz to f _L +200kHz
18	Ageing	Δf f	-3.0	+ 3.0	10-6	Per year after burn-in at T ₀
19	Lead Finish	-		2	-	

PAGE 101

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	3.2	3.2768		
2	Reference Temperature	T _o	+23	+27	°C	
3	Overtone Order	-	Funda	mental	:	
4	Load Capacitance	CL	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	-10	+ 10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_L	-	50	Ω	At T _o °C
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	ΔR 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 ap	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	-	7.0	pF	
16	Q Factor	Q	200 000	-	1	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	2:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	$\frac{\Delta f}{f}$	-1.0	+ 1.0	10 ⁻⁶	Per year after burn-in
19	Lead Finish	_	2	2	-	

PAGE 102

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f_L	16	16.0		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	рF	
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_{L}	-	30	Ω	At T _o °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	-10 (-1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
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	mΗ	
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 _L -200kHz to f _L +200kHz
18	Ageing	<u>Δ f</u> f	-1.0	+ 1.0	10 ⁻⁶	Per year after burn-in at T ₀
19	Lead Finish	_		2	-	

PAGE 103

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	15	15.0		
2	Reference Temperature	T _o	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	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_{L}	-	30	Ω	At T _o °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	-10 c -1.5	or		From resistance measured at T _o °C If R<10Ω
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	80 000		-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	1		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	$\frac{\Delta f}{f}$	-1.0	+ 1.0	10-6	Per year after burn-in
19	Lead Finish	-		2	-	



PAGE 104

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	4.0	4.096		
2	Reference Temperature	T _o	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C_L	C	ø	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	Rr	-	50	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 or -2.0	+ 20 or + 2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-30	+80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not ap	plicable	10 ⁻⁶	
12	Resistance variation with Drive Level	<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	Not ap	plicable	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	3:1	-		In the frequency range: f _r -10% to f _r +10%
18	Ageing	<u>Δ f</u> f	-3.0	+ 3.0	10-6	
19	Lead Finish	-	2	2	-	

PAGE 105

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	10	10.0		
2	Reference Temperature	To	+23	+27	°C	
3	Overtone Order		Funda	mental		
4	Load Capacitance	C _L	3	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_{L}	-	30	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	Δf f	-30	+30	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	-10 or -1.0	+ 10 or + 1.0	% Ω	From resistance measured at T _o °C If R≤10Ω
10	Operating Temperature Range	T _{op}	-55	+ 100	°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	100 000	-	-	
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 -200kHz to f _L +200kHz
18	Ageing	Δf f	-2.0	+2.0	10 ⁻⁶	Per year after burn-in at T ₀
19	Lead Finish	-		2	•	

PAGE 106

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	18	18.0		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	28	32	pF	
5	Rated Drive Level	Po	0	.2	mW	
6	Frequency Adjustment Tolerance	Δf f	-5.0	+5.0	10-6	At T _o °C
7	Resonance Resistance	R_{L}	-	20	Ω	At To °C
8	Frequency Variation with Temperature over Top	∆ f f	(a) -5.0 (b) -8.0	+5.0 +8.0	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T $_{\rm o}$ °C If R<10 Ω
10	Operating Temperature Range	T _{op}	(a) 0 (b) -10	+ 60 + 70	°C	
11	Frequency variation with Drive Level	Δf 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	<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	3:1	-		In the frequency range: f _L -10% to f _L +10%
18	Ageing	∆ f f	-2.0	+ 2.0	10-6	Per year
19	Lead Finish	_		2	-	

PAGE 107

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	25	25.0		Swept
2	Reference Temperature	To	+	25	°C	
3	Overtone Order	-	;	3		
4	Load Capacitance	C _L	c	o	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	•	15	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>∆ f</u> f	-10	+10	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}	-25	+ 75	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	-10	+10	10 ⁻⁶	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.2$ mW
12	Resistance variation with Drive Level	ΔR R	-10	+ 10	%	From $P_{S1} = 0.05$ mW to $P_{S2} = 0.2$ mW
13	Motional Inductance	L ₁	17	21	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	5.0	pF	
16	Q Factor	Q	300 000	-	-	
17	Unwanted Response Resistance	Rp	500 1.0 3.5 35.0	- - - -	Ω kΩ kΩ kΩ	In the frequency range: f_r to $f_r + 200kHz$ $f_r + 200$ to $f_r + 300kHz$ $f_r + 300$ to $f_r + 500kHz$ $f_r + 500$ to $f_r + 2000kHz$
18	Ageing	Δf f	-10	+ 10	10-6	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 108

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

1	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	3.6	3.6864		
2	Reference Temperature	T _o	-	- 25	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	(xo ·	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	_	50	Ω	Over T _{op} °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>∆ R</u> R	Not ap	Not applicable		
10	Operating Temperature Range	T _{op}	-25	+80	ů	
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	Not ap	plicable	pF	
16	Q Factor	Q	75 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	5:1	-		In the frequency range: f _r -10% to f _r +10%
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+ 3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	-		2	-	

PAGE 109

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.24	5.24288		
2	Reference Temperature	To	+	60	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	2	2	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}	-	13	Ω	Over T _{op} °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	Not applicable		%	
10	Operating Temperature Range	T _{op}	-20	+ 70	ů	
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	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	50 000	-	-	-
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	<u>Δ f</u>	-3.0	+ 3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	_		2	-	



PAGE 110

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	12.0		MHz	
2	Reference Temperature	T _o	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	28	32	pF	
5	Rated Drive Level	Po	0	.2	mW	
6	Frequency Adjustment Tolerance	Δf f	-10	+ 10	10-6	At T _o °C
7	Resonance Resistance	R_{L}	•	25	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	Δf f	-25	+ 25	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>Δ R</u> R	-10 c -1.5	or		From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-10	+ 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	Not ap	plicable	mĦ	
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 IZpI/R	3:1	-		In the frequency range: f _L -10% to f _L +10%
18	Ageing	Δf f	-3.0	+3.0	10-6	Per year
19	Lead Finish	-		2	-	

PAGE 111

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	3.6	3.6864		
2	Reference Temperature	T _o	+23	+27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	28	32	pF	
5	Rated Drive Level	Po	0	.2	mW	
6	Frequency Adjustment Tolerance	Δf f	-10	+ 10	10 ⁻⁶	At T _o °C
7	Resonance Resistance	R_L	-	100	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	Δf f	-25	+ 25	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}	-10	+ 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	Not ap	plicable	mΗ	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	75 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	5:1	-		In the frequency range: f _L -10% to f _L +10%
18	Ageing	Δf f	-3.0	+ 3.0	10-6	Per year
19	Lead Finish	-		2	-	

PAGE 112

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	12.13	12.136285		Synthetic swept
2	Reference Temperature	T _o	+23	+ 27	°C	High temperature cured
3	Overtone Order	-	Funda	mental		AT cut
4	Load Capacitance	C _L	c	xo	рF	
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	-	20	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	<u>∆</u> f	-10	+ 10	10 ⁻⁶	From frequency measured at T _o °C measured each 2.5°C
9	Resistance Variation with Temperature over Top	ΔR R	-10 -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-30	+ 65	°C	
11	Frequency variation with Drive Level	<u>Δ f</u> f	-5.0	+ 5.0	10 ⁻⁶	From $P_{s1} = 0.05 \text{mW}$ to $P_{s2} = 0.1 \text{mW}$
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	150 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R	5:1	-		In the frequency range: f _r -10% to f _r +10%
18	Ageing	$\frac{\Delta f}{f}$	-10	+10	10-6	Over 10 years after burn-in
19	Lead Finish	-		2	-	

PAGE 113

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	18	18.0		
2	Reference Temperature	T _o	+ 38	+ 42	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	5	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}	1	20	Ω	At T _o °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	-10 c -1.5	or		From resistance measured at T _o °C If R < 10Ω
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	Not ap	plicable	mΗ	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	75 000	-	-	
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 -200kHz to f _L +200kHz
18	Ageing	<u>Δ f</u>	-3.0	+3.0	10 ⁻⁶	After burn-in and per year
19	Lead Finish	_		2	-	

PAGE 114

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	f _r	8.38	8.388608		
2	Reference Temperature	T _o	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	ď	×	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	-	20	Ω	At T _o °C
8	Frequency Variation with Temperature over Top	∆ f f	(a) -12 (b) -20	+20 +12	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	-10 or -2.0	+10 or +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	(a) -30 (b) -40	+ 75 + 30	°C	
11	Frequency variation with Drive Level	<u>∆</u> f	-5.0	+ 5.0	10 ⁻⁶	From $P_{s1} = 0.05$ mW to $P_{s2} = 0.1$ mW
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not ap	plicable	%	
13	Motional Inductance	L ₁	Not ap	plicable	mΗ	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	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	5:1	-		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	Lead Finish	-		2	-	

PAGE 115

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	10.0		MHz	
2	Reference Temperature	T _o	+36	+ 44	°C	
3	Overtone Order	•	Funda	mental		
4	Load Capacitance	C _L	28	32	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}	-	15	Ω	At T _o °C
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	ΔR R	-10 -1.5	+ 10 or + 1.5	% Ω	From resistance measured at To °C If R < 10Ω
10	Operating Temperature Range	T _{op}	-20	+ 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	2.8	-	mΗ	
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 _L -50kHz to f _L +50kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Per year after burn-in
19	Lead Finish	-		2	-	

PAGE 116

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	6	6.0		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	CL	3	0	рF	
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	-	50	Ω	At T _o °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	ΔR R	-20 or -2.0	+20 or +2.0	% Ω	From resistance measured at T _o °C
10	Operating Temperature Range	T _{op}	-45	+ 75	°C	
11	Frequency variation with Drive Level	Δf 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	200 000	1	-	
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 -50kHz to f _L +50kHz
18	Ageing	<u>∆ f</u> f	-3.0	+3.0	10 ⁻⁶	Per year after burn-in
19	Lead Finish	-		2	-	

PAGE 117

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol		nits	Unit	Remarks
110.	Ond dotonotide	Cyco.	Min.	Max.	0	i tomanto
1	Resonance Frequency	fL	12.5		MHz	
2	Reference Temperature	T _o	+ 23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	3	0	pF	
5	Rated Drive Level	Po	0	.1	mW	
6	Frequency Adjustment Tolerance	Δf f	-20	+20	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	-30	+30	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	<u>∆ R</u> R	-20 or -2.0	+ 20 or + 2.0	% Ω	From resistance measured at T ₀ °C
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	Not ap	plicable	mH	
14	Motional Capacitance	C ₁	Not ap	plicable	fF	
15	Static Capacitance	Co	Not ap	plicable	рF	
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 _L -50kHz to f _L +50kHz
18	Ageing	∆ f	-10	+10	10 ⁻⁶	5 years after burn-in
19	Lead Finish	-		2	-	

PAGE 118

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	11.0	11.059		
2	Reference Temperature	To	+23	+ 27	°C	
3	Overtone Order	-	Funda	mental		
4	Load Capacitance	C _L	5	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}	-	20	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>Δ f</u> f	-15	+ 15	10 ⁻⁶	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	Not app	Not applicable		
10	Operating Temperature Range	T _{op}	-35	+ 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	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	-	-	
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	$\frac{\Delta f}{f}$	-5.0	+ 5.0	10 ⁻⁶	Per year after burn-in
19	Lead Finish	-	2	2	-	

PAGE 119

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	7.3728		MHz	
2	Reference Temperature	T _o	+23	+27	°C	
3	Overtone Order	-	Fundamental			
4	Load Capacitance	C _L	30		pF	
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>∆ f</u> 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	<u>Δ f</u> f	-15	+ 15	10-6	From frequency measured at T _o °C
9	Resistance Variation with Temperature over Top	ΔR R	-10 +10 or -1.5 +1.5		% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-30	+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 applicable		%	
13	Motional Inductance	L ₁	Not applicable		mH	
14	Motional Capacitance	C ₁	Not applicable		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 _L -200kHz to f _L +200kHz
18	Ageing	$\frac{\Delta f}{f}$	-3.0	+3.0	10-6	Per year after burn-in
19	Lead Finish	-	2		-	

PAGE 120

ISSUE 4

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lin Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	5.12		MHz	
2	Reference Temperature	To	+38	+ 42	°C	
3	Overtone Order	-	Fundamental			
4	Load Capacitance	C _L	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}	0	30	Ω	At To °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	ΔR R	-10 or -1.5	+ 10 or + 1.5	% Ω	From resistance measured at T _o °C If R<10Ω
10	Operating Temperature Range	T _{op}	-40	+80	°C	
11	Frequency variation with Drive Level	$\frac{\Delta f}{f}$	Not applicable		10 ⁻⁶	
12	Resistance variation with Drive Level	ΔR R	Not applicable		%	
13	Motional Inductance	L ₁	Not applicable		mH	
14	Motional Capacitance	C ₁	Not applicable		fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	100 000	-	-	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	2:1	-		In the frequency range: f _L -200kHz to f _L +200kHz
18	Ageing	<u>∆</u> f	-3.0	+3.0	10-6	Per year after burn-in
19	Lead Finish	-	2		-	

PAGE 121

ISSUE

TABLE 1(a) - TYPE VARIANT DETAILED INFORMATION

No.	Characteristics	Symbol	Lir Min.	nits Max.	Unit	Remarks
1	Resonance Frequency	fL	10.0		MHz	
2	Reference Temperature	T _o	+ 65	+ 78	°C	Turn point
3	Overtone Order	-	3			SC cut
4	Load Capacitance	CL	18	32	pF	
5	Rated Drive Level	Po	0.1		mW	
6	Frequency Adjustment Tolerance	<u>Δ f</u> f	Not applicable		10-6	
7	Resonance Resistance	R_L	-	90	Ω	Over T _{op} °C
8	Frequency Variation with Temperature over Top	<u>∆ f</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	Not applicable		%	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 applicable		10 ⁻⁶	
12	Resistance variation with Drive Level	<u>Δ R</u> R	Not applicable		%	
13	Motional Inductance	L ₁	Not applicable		mΗ	
14	Motional Capacitance	C ₁	Not applicable		fF	
15	Static Capacitance	Co	-	7.0	pF	
16	Q Factor	Q	800 000	-	•	
17	Ratio of Unwanted: Response Resistance to Resonance Resistance or Response Impedance to Resonance Resistance	Rp/R IZpI/R	Not applicable			
18	Ageing	<u>Δ f</u> f	-0.5	+ 0.5	10 ⁻⁶	Per year after burn-in
19	Lead Finish	-	2		-	