■RELIABILITY DATA

1. Operating Temperature Range	
Specified Value	−55～＋150℃(Including self-generated heat)
Test Methods and Remarks	Including self-generated heat

2. Storage Temperature Range	
Specified Value	−40～＋85℃
Test Methods and Remarks	−5 to 40℃ for the product with taping.

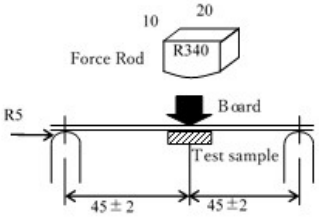
3. Rated current	
Specified Value	Within the specified tolerance

4. Inductance	
Specified Value	Within the specified tolerance
Test Methods and Remarks	Measuring equipment : LCR Meter (HP 4285A or equivalent) Measuring frequency : 100kHz, 1V

5. DC Resistance	
Specified Value	Within the specified tolerance
Test Methods and Remarks	Measuring equipment : DC ohmmeter (HIOKI 3541 or equivalent)

6. Self resonance frequency	
Specified Value	—

7. Temperature characteristic	
Specified Value	Inductance change : Within ±20%
Test Methods and Remarks	Measurement of inductance shall be taken at temperature range within −55℃～＋150℃. With reference to inductance value at ＋20℃., change rate shall be calculated.

8. Board Flex	
Specified Value	No damage
Test Methods and Remarks	AEC-Q200 Test No.21qualified (AEC-Q200-005) The test samples shall be soldered to the test board by the reflow. As illustrated below, apply force in the direction of the arrow indicating until deflection of the test board reaches to 2 mm for 60 s. Test board size : 100×40×1.6 Test board material : glass epoxy-resin 

9. Insulation resistance : between wires	
Specified Value	—

10. Insulation resistance : between top side of sample and the terminal	
Specified Value	DC100V 100MΩminimum

11. Withstanding voltage : between top side of sample and the terminal	
Specified Value	AC100V　No break of insulation

12. Terminal Strength	
Specified Value	Inductance change : Within ±10%
Test Methods and Remarks	AEC-Q200 Test No.22 qualified (AEC-Q200-006) The test samples shall be soldered to the test board by the reflow soldering. Applied force　: 17.7N Duration　: 60 s

13. Vibration	
Specified Value	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	AEC-Q200 Test No.14 qualified (MIL-STD-202 Method 204) The test samples shall be soldered to the test board by the reflow. Then it shall be submitted to below test conditions.

Frequency Range	10～2000Hz	
Total Amplitude	5G	
Sweeping Method	10Hz to 2000Hz to 10Hz for 20min.	
Number of cycle	X	For 12 cycles on each X, Y, and Z axis.
	Y	
	Z	

14. Mechanical Shock	
Specified Value	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	AEC-Q200 Test No.13qualified (MIL-STD-202 Method213) The test samples shall be soldered to the test board by the reflow. Then it shall be submitted to below test conditions.

Acceleration	981m/s^2
Duration	6msec(Half sine pulse)
Direction	+X, +Y, +Z, -X, -Y, -Z
Number of time	Each 3 times, Total 18 times

15. Solderability	
Specified Value	At least 90% of surface of terminal electrode is covered by new solder.
Test Methods and Remarks	AEC-Q200 Test No.18qualified (J-STD-002)

	(a)　Method B	(c)　Method D
Preconditioning	155℃_4hrs	Steam 8hrs±15min
Solder Temperature	235±5℃	260±5℃
Time	5+0/-0.5 sec	30+0/-0.5 sec.

16. Resistance to Soldering Heat	
Specified Value	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	AEC-Q200 Test No.15 qualified (MIL-STD-202 Method210) Condition：K The test sample shall be exposed to reflow oven at 183℃ for 90-120 seconds, with peak temperature at 250±5℃ for 30±5 seconds, 3 times.

17. Temperature Cycling

Specified Value	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	AEC-Q200 Test No.04 qualified (JESD22 Method JA-104) The test samples shall be soldered to the test board by the reflow. The test samples shall be placed at specified temperature for specified time by following condition. 1Cycle: −55±3℃/30 min⇔150±3℃/30 min Number of cycle: 1000 cycles

18. Biased Humidity

Specified Value	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	AEC-Q200 Test No.07 qualified (MIL-STD-202 Method 103) The test samples shall be soldered to the test board by the reflow. The test samples shall be placed in thermostatic oven set at specified temperature and humidity as shown in below table. Temperature: 85±2℃ Humidity: 85%RH Time: 1000+24/−0 hour

19. High Temperature Exposure

Specified Value	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	AEC-Q200 Test No.03 qualified (MIL-STD-202 Method 108) The test samples shall be soldered to the test board by the reflow soldering. Temperature: 150±3℃ Time: 1000+24/−0 hour

20. Operational Life

Specified Value	Inductance change : Within ±10% No significant abnormality in appearance.
Test Methods and Remarks	AEC-Q200 Test No.08 qualified (MIL-PRF-27) The test samples shall be soldered to the test board by the reflow soldering. Temperature: 125±3℃ Applied current: Rated current Time: 1000+24/−0 hour

21. Standard condition

Specified Value	Standard test condition : Unless otherwise specified, temperature is 20±15℃ and 65±20%of relative humidity. When there is any question concerning measurement result: In order to provide correlation data, the test shall be condition of 20±2℃ of temperature, 65±5% relative humidity. Inductance is in accordance with our measured value.