Multilayer Metal Power Inductors MCOIL™ LSCN series
for General Electronic Equipment for Consumer
Multilayer Metal Power Inductors MCOIL™ LLCN series
for Medical Devices classified as GHTF Classes A or B (Japan Classes I or II)

■RELIABILITY DATA

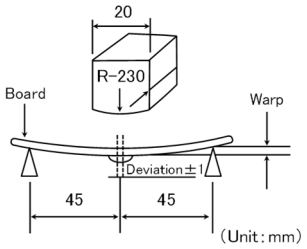
1. Operating Temperature Range	
Specified Value	−40～＋125℃(Including self-generated heat)

2. Storage Temperature Range	
Specified Value	−40～＋85℃

3. Rated Current	
Specified Value	Idc1: The decreasing-rate of inductance value is within 30 % Idc2: The temperature of the element is increased within 40℃

4. Inductance	
Specified Value	Refer to each specification.
Test Methods and Remarks	Measuring frequency : 1MHz Measuring equipment : E4991(or its equivalent)

5. DC Resistance	
Specified Value	Refer to each specification.
Test Methods and Remarks	Measuring equipment: HIOKI RM3545 (or its equivalent)

6. Resistance to Flexure of Substrate	
Specified Value	No mechanical damage.
Test Methods and Remarks	Warp : 2mm Testing board : glass epoxy-resin substrate Thickness : 0.8mm 

7. Solderability	
Specified Value	At least 90% of terminal electrode is covered by new solder.
Test Methods and Remarks	Solder temperature : 245±3℃ (Sn/3.0Ag/0.5Cu) Duration : 4±1 sec.

8. Resistance to Soldering	
Specified Value	Appearance: No significant abnormality Inductance change: Within ±10%
Test Methods and Remarks	Solder temperature : 260±5℃ Duration : 10±0.5 sec. Preheating temperature : 150 to 180℃ Preheating time : 3 min. Flux : Immersion into ethanol solution with colophony for 3 to 5 sec. Recovery : 2 to 3 hrs of recovery under the standard condition after the test.(See Note 1)

9. Thermal Shock	
Specified Value	Appearance: No significant abnormality Inductance change: Within ±10%
Test Methods and Remarks	Conditions for 1 cycle Step / temperature(℃) / time(min.) 1 / −40 +0/−3 / 30±3 2 / Room temperature / 2〜3 3 / +85 +3/−0 / 30±3 4 / Room temperature / 2〜3 Number of cycles: 100 Recovery: 2 to 3 hrs of recovery under the standard condition after the test.(See Note 1)

10. Damp Heat(Steady state)	
Specified Value	Appearance: No significant abnormality Inductance change: Within ±10%
Test Methods and Remarks	Temperature : 60±2℃ Humidity : 90 to 95%RH Duration : 500 +24/−0 hrs Recovery : 2 to 3 hrs of recovery under the standard condition after the removal from test chamber.(See Note 1)

11. Loading under Damp Heat	
Specified Value	Appearance: No significant abnormality Inductance change: Within ±10%
Test Methods and Remarks	Temperature : 60±2℃ Humidity : 90 to 95%RH Applied current : Idc2max Duration : 500 +24/−0 hrs Recovery : 2 to 3 hrs of recovery under the standard condition after the removal from test chamber.(See Note 1)

12. Loading at High Temperature	
Specified Value	Appearance: No significant abnormality Inductance change: Within ±10%
Test Methods and Remarks	Temperature : 85±2℃ Applied current : Idc2max Duration : 500 +24/−0 hrs Recovery : 2 to 3 hrs of recovery under the standard condition after the removal from test chamber. (See Note 1)

(Note 1) Measurement shall be made after 48±2 hrs of recovery under the standard condition.
"standard condition" referred to herein is defined as follows:
5 to 35℃ of temperature, 25 to 85% relative humidity.
When there are questions concerning measurement results:
In order to provide correlation data, the test shall be conducted under condition of 20±2℃ of temperature, 60 to 70% relative humidity, and 86 to 106kPa of air pressure. Unless otherwise specified, all the tests are conducted under the "standard condition."