## SCOPE :

**This specification applies to the Pb Free high current type SMD inductors for**

**MSCDRI-74H0-SERIES**

**PRODUCT INDENTIFICATION**

**MSCDRI - 74 H0 - 100 M**

① ② ③ ④ ⑤

**① Product Code**

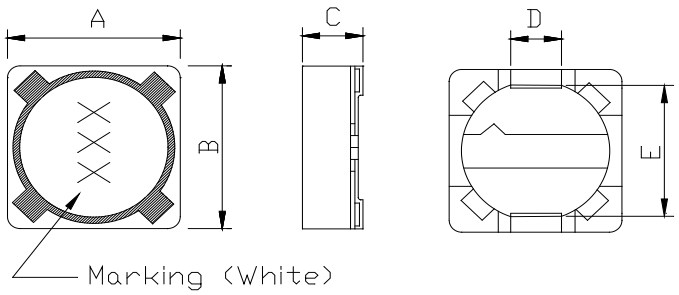
**② Dimensions Code**

**③ AEC-Q200 Code**

**④ Inductance Code**

**⑤ Tolerance Code**

## (1) SHAPES AND DIMENSIONS




| | | |
|---|---|---|
| **A:** | **7.30±0.5** | **mm** |
| **B:** | **7.30±0.5** | **mm** |
| **C:** | **4.60 Max.** | **mm** |
| **D:** | **2.00 Typ.** | **mm** |
| **E:** | **5.4 Typ.** | **mm** |

## (2) ELECTRICAL SPECIFICATIONS

### SEE TABLE 1

**TEST INSTRUMENTS**

**L : HP 4284A PRECISION LCR METER (or equivalent)**

**RDC : CHROMA MODEL 16502 MILLIOHMMETER (or equivalent)**

## (3) CHARACTERISTICS

**(3)-1 Operate temperature range ..... －40℃～＋155℃**

**(Including self temp. rise)**

## TABLE 1

| MAGLAYERS PT/NO. | Inductance L(μH) | Percent Tolerance | Test Frequency | Resistance RDC(Ω) Max. | Rated DC Current IDC(A) | Marking |
|---|---|---|---|---|---|---|
| MSCDRI-74H0-100□ | 10 | M | 100kHz/0.25V | 49m | 1.84 | 100 |
| MSCDRI-74H0-120□ | 12 | M | 100kHz/0.25V | 58m | 1.71 | 120 |
| MSCDRI-74H0-150□ | 15 | M | 100kHz/0.25V | 81m | 1.47 | 150 |
| MSCDRI-74H0-180□ | 18 | M | 100kHz/0.25V | 91m | 1.31 | 180 |
| MSCDRI-74H0-220□ | 22 | M | 100kHz/0.25V | 0.11 | 1.23 | 220 |
| MSCDRI-74H0-270□ | 27 | M | 100kHz/0.25V | 0.15 | 1.12 | 270 |
| MSCDRI-74H0-330□ | 33 | M | 100kHz/0.25V | 0.20 | 0.96 | 330 |
| MSCDRI-74H0-390□ | 39 | M | 100kHz/0.25V | 0.23 | 0.91 | 390 |
| MSCDRI-74H0-470□ | 47 | M | 100kHz/0.25V | 0.26 | 0.88 | 470 |
| MSCDRI-74H0-560□ | 56 | M | 100kHz/0.25V | 0.35 | 0.75 | 560 |
| MSCDRI-74H0-680□ | 68 | M | 100kHz/0.25V | 0.38 | 0.69 | 680 |
| MSCDRI-74H0-820□ | 82 | M | 100kHz/0.25V | 0.43 | 0.61 | 820 |
| MSCDRI-74H0-101□ | 100 | M | 100kHz/0.25V | 0.61 | 0.60 | 101 |
| MSCDRI-74H0-121□ | 120 | M | 100kHz/0.25V | 0.66 | 0.52 | 121 |
| MSCDRI-74H0-151□ | 150 | M | 100kHz/0.25V | 0.88 | 0.46 | 151 |
| MSCDRI-74H0-181□ | 180 | M | 100kHz/0.25V | 0.98 | 0.42 | 181 |
| MSCDRI-74H0-221□ | 220 | M | 100kHz/0.25V | 1.17 | 0.36 | 221 |
| MSCDRI-74H0-271□ | 270 | M | 100kHz/0.25V | 1.64 | 0.34 | 271 |
| MSCDRI-74H0-331□ | 330 | M | 100kHz/0.25V | 1.86 | 0.32 | 331 |
| MSCDRI-74H0-391□ | 390 | M | 100kHz/0.25V | 2.85 | 0.29 | 391 |
| MSCDRI-74H0-471□ | 470 | M | 100kHz/0.25V | 3.01 | 0.26 | 471 |

※ □ specify the inductance tolerance,M(±20%)

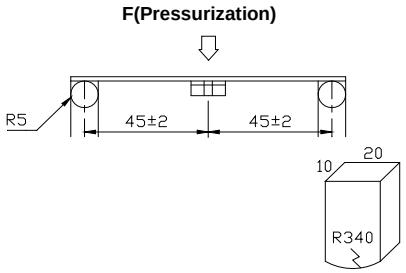
※IDC : Based on inductance change (△L/Lo：drop 25% Max.) @ambient temperature 25℃ and Based on temperature rise (△T： 40℃ Typ.)

## (4) RELIABILITY TEST METHOD

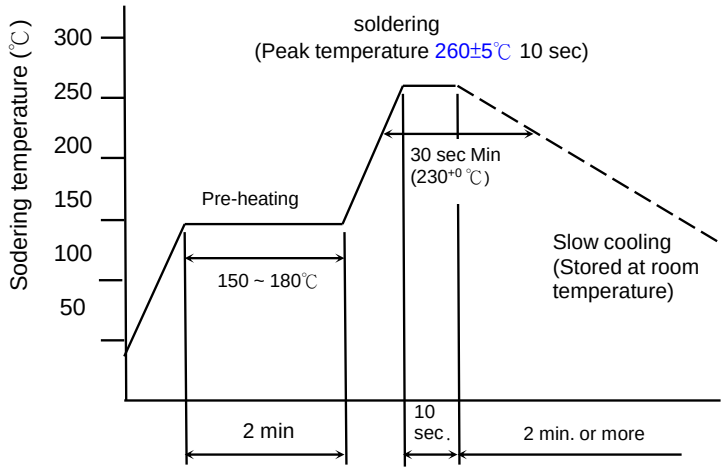
### ELECTRICAL

| TEST ITEM | SPECIFICATION | TEST DETAILS |
|---|---|---|
| Insulation resistance | There shall be no other damage or problems. | DC 100V voltage shall be applied across this sample of top surface and the terminal.<br>The insulation resistance shall be more than $1 \times 10^8$ Ω. |
| Dielectric withstand voltage | There shall be no other damage or problems. | AC 100V voltage shall be applied for 1 minute acrosset the top surface and the terminal of this sample |
| Temperature characteristics | △L/L20℃ ≦±10%<br>0～2000 ppm/℃ | The test shall be performed after the sample has stabilized in an ambient temperature of -20 to +85℃,and the value calculated based on the value applicable in a normal temperature and narmal humidity shall be △L/L20℃ ≦±10%. |

### MECHANICAL

| TEST ITEM | SPECIFICATION | TEST DETAILS |
|---|---|---|
| Substrate bending | △L/Lo≦±5%<br>There shall be no mechanical damage or elec-trical damage. | The sample shall be soldered onto the printed circuit board in figure 1 and a load applied unitil the figure in the arrow direction is made approximately 3mm.<br>60 sec minimum holding time.<br>PCB dimension shall the page 7/9<br>  <br>PRESSURE ROD<br>figure-1 |
| Flammability | There shall be no other damage or problems. | Burning stops within 10 seconds on a vertical specimen; drips of particles allowed as long as they are not inflamed. |
| Terminal Strength | There shall be no other damage or problems. | With the component mounted on a PCB obtained from the Supplier with the device to be tested,apply a 17.7 N (1.8 Kg) force to the side of a device being tested. This force shall be applied for 60 +1 seconds. |
| Mechanical Shock | △L/Lo≦±5%<br>There shall be no mechanical damage. | 100g's/6ms/Half-sine/12.3ft/sec |

## MECHANICAL

| TEST ITEM | SPECIFICATION | |
|---|---|---|
| Vibration | △L/Lo≦±5%<br><br>There shall be no mechanical damage. | 5g's for 20 minutes, 12 cycles each of 3 orientations.<br>Test from 10-2000 Hz. |
| Solderability | New solder<br>More than 90% | Flux (rosin, isopropyl alcohol{JIS-K-1522}) shall be coated over the whole of the sample before hard, the sample shall then be preheated for about 2 minutes in a temperature of 130～150℃ and after it has been immersed to a depth 0.5mm below for 3±1 seconds fully in molten solder M705 with a temperature of 245±5℃.<br>More than 90% of the electrode sections shall be couered with new solder smoothly when the sample is taken out of the solder bath. |
| Resistance to Soldering heat (reflow soldering) | There shall be no damage or problems. | Temperature profile of reflow soldering<br>  <br><br>Solder temperature : 260 ±5℃<br>Dip time: 10 ±1 seconds<br>The chip shall not crack.<br>More than 75% of the terminal electrode shall be covered with solder. |

## ENVIROMENT CHARACTERISTICS

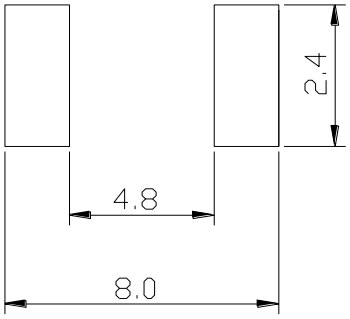
| TEST ITEM | SPECIFICATION | |
|---|---|---|
| High temperature storage | △L/Lo≦±5%<br>There shall be no mechanical damage. | 1000hrs.at rated operating temperature (e.g. 155°C part can be stored for 1000hrs.@ 155°C.Same applies for 125°C and 105°C. Unpowered. Measurement at 24±4 hours after test conclusion. |
| Temperature Cycling | △L/Lo≦±5%<br>There shall be no other dama-ge of problems | 1000cycles (-40°C to +155°C).Note: If 105°C part or 125°C part the 1000cycles will be at that temperature. Measurement at 24±4hours after test conclusion. 30min maximum dwell time at each temperature extreme.1min. maximum transition time. |
| Operational Life | △L/Lo≦±5%<br>There shall be no mechanical damage. | 1000hrs. @155°C. If 105°C or 125°C part will be Tested at that temperature. Measurement at 24±4 hours after test conclusion |
| Biased Humidity | △L/Lo≦±5%<br>There shall be no mechanical damage. | 1000hours 85°C/85%RH. Unpowered.Measurement at 24±4hours after test conclusion. |
| Test conditions：<br>The sample shall be reflow soldered onto the printed circuit board in every test. | | |

## (5) LAND DIMENSION (Ref.)

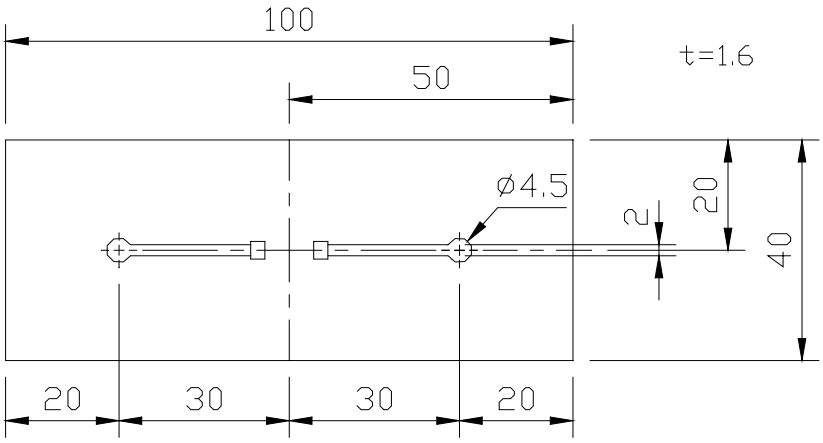
**PCB: GLASS EPOXY t＝1.6mm**

### (5)-1 LAND PATTERN DIMENSIONS

**(STANDARD PATTERN) Unit : mm**

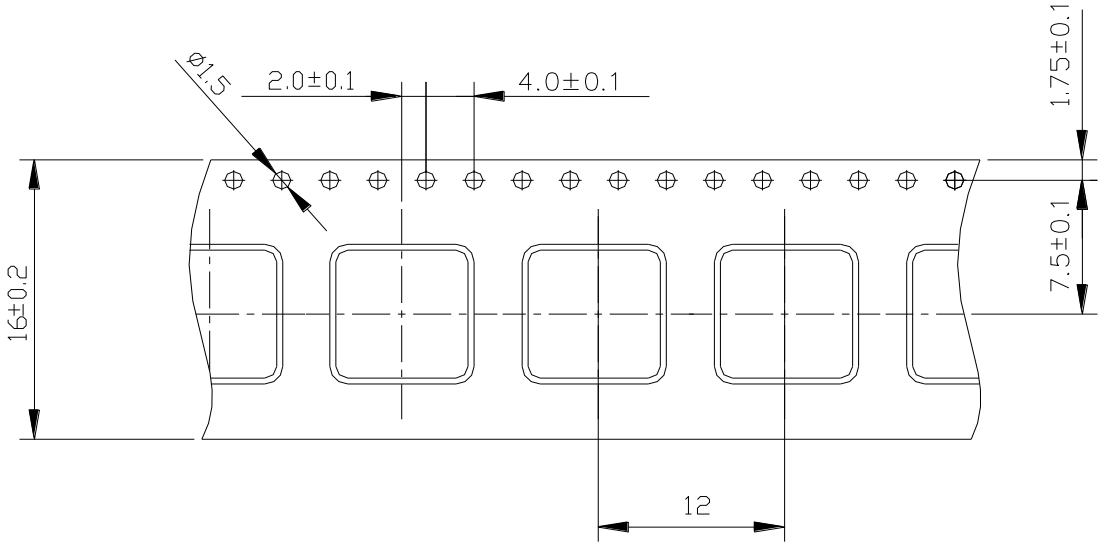



### (5)-2 SUBSTRATE BENDING TEST BENDING TEST BOARD



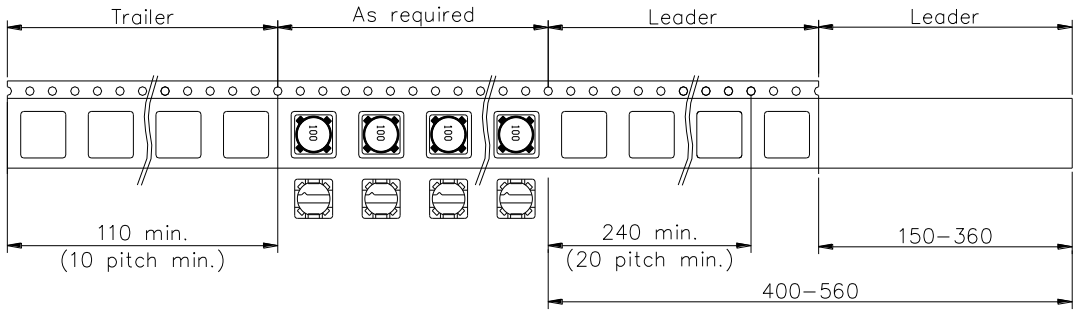
# (6) PACKAGING

## (6)-1 CARRIER TAPE DIMENSIONS (mm)

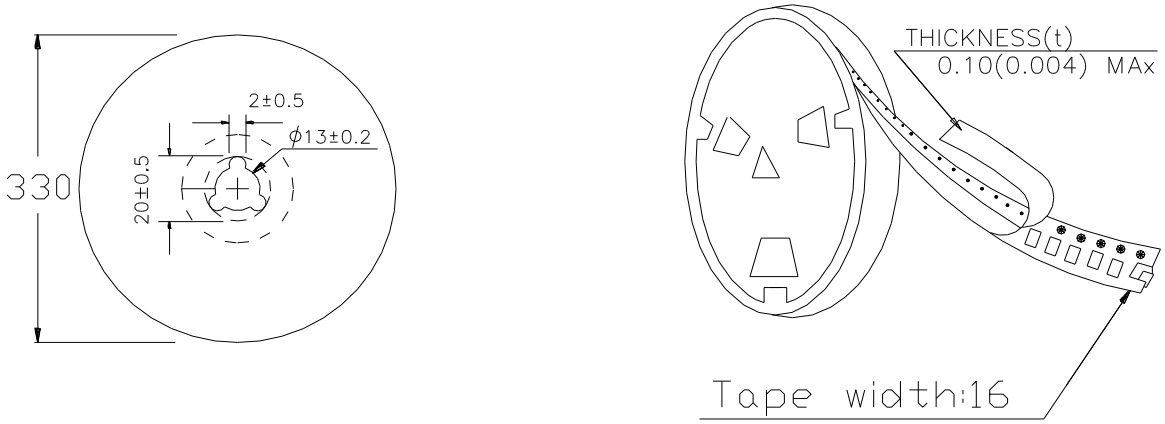



## (6)-2 TAPING DIMENSIONS (mm)

**Unreeling Direction**



## (6)-3 REEL DIMENSIONS (mm)




## (6)-4 QUANTITY

**1000 pcs/Reel**

**The products are packaged so that no damage will be sustained.**

Please note that the contents may change without any prior notice due to reasons such as upgrading.