SCOPE :

This specification applies to the Pb Free Signal Line Common Mode Filter

for MCM-0905SH1-101Y-E-□□

PRODUCT INDENTIFICATION

MCM - 0905S H1 - 101 Y - E - □□

① ② ③ ④ ⑤ ⑥

① Product Code

② Dimensions Code

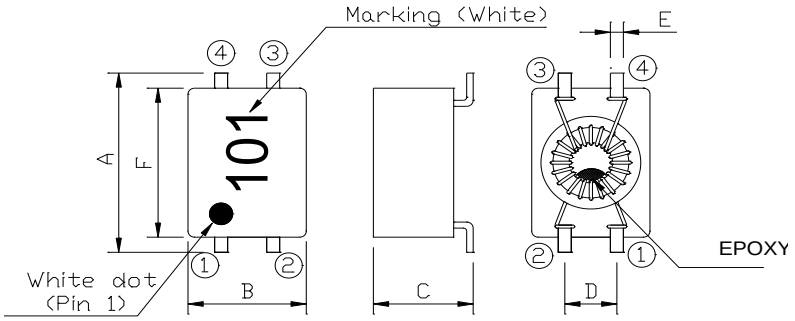
③ AEC-Q200 Code

④ Inductance Code

⑤ Tolerance Code

⑥ Inner Control Code

(1) SHAPES AND DIMENSIONS



A:	**8.9±0.5**	**mm**
B:	**5.4±0.3**	**mm**
C:	**5.0 Max.**	**mm**
D:	**2.54±0.3**	**mm**
E:	**0.5 Typ.**	**mm**
F:	**7.3±0.3**	**mm**

(2) ELECTRICAL SPECIFICATIONS

SEE TABLE 1

TEST INSTRUMENTS

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

RDC : CHROMA MODEL 16502 MILLIOHMMETER (or equivalent)

I.R : CHROMA MODEL 19073 AC/DC/IR HIPOT TESTER (or equivalent)

(3) CHARACTERISTICS

(3)-1 Operate temperature range ..... －40℃～＋125℃

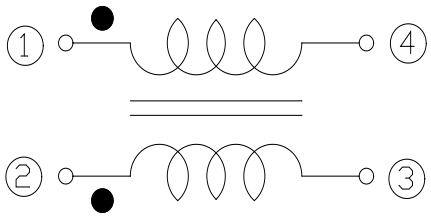
(Including self temp. rise)

TABLE 1

MAGLAYERS PT/NO.	Inductance L(uH) (1-4),(2-3) at 100KHz/0.25V	RDC(mΩ) Max. (1-4),(2-3) 1 Line	Rated Current (A) Max.	Insulation Resistance (MΩ) Min.	Rated Voltage (V) Max.	Marking
MCM-0905SH1-101Y-E-□□	100 ± 40%	100	1.6	10	50	●101

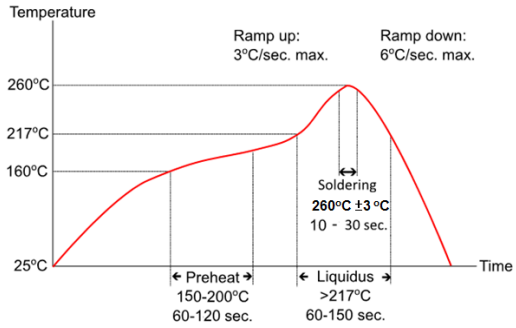
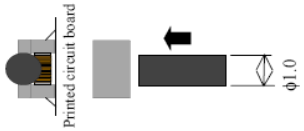
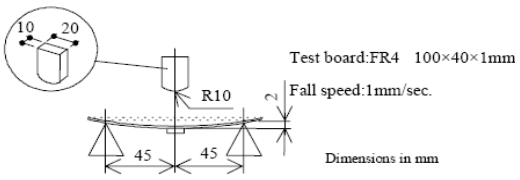
Rated Current :Based on temperature rise (△T： 40℃ TYP.)

CIRCUIT DIAGRAM



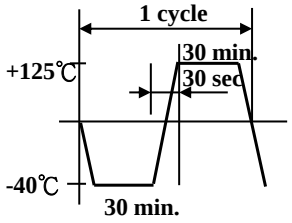
(4) RELIABILITY TEST METHOD

MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Solder ability	The product shall be connected to the test circuit board by the fillet (the height is 0.2mm).	Apply cream solder to the printed circuit board . Refer to clause 8 for Reflow profile.
Resistance to Soldering heat (reflow soldering)	There shall be no damage or problems.	Temperature profile of reflow soldering  Ramp up rate: 3°C per second (max.) Ramp down rate: 6°C per second (max.) Preheat temperature: 150-200°C, 60-120 seconds Liquidus temperature: above 217°C, 60-150 seconds Peak temperature: 260oC ±3 oC, 10-30 seconds
Terminal strength	The terminal electrode and the ferrite must not damaged.	Solder a chip to test substrate , and then laterally apply a load 9.8N in the arrow direction. 
Strength on PC board bending	The terminal electrode and the ferrite must not damaged.	Solder a chip to test substrate and then apply a load. 
High temperature resistance	Inductance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Measurement : After placing for 24 hours min. Temperature : +125±2℃ Applied voltage : Rated voltage Applied current : Rated current Testing time : 500±12 hours
MSL	No apparent damage Fulfill the electrical spec. after test.	85℃、85%RH FOR 168 HOURS

(4) RELIABILITY TEST METHOD

MECHANICAL

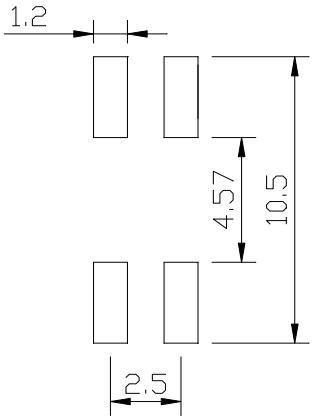
TEST ITEM	SPECIFICATION	TEST DETAILS
Humidity resistance	Inductance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Measurement : After placing for 24 hours min. Temperature : +60±2℃ , Humidity : 90 to 95 %RH Applied voltage : Rated voltage Applied current : Rated current Testing time : 500±12 hours
Thermal shock	Inductance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	
Low temperature storage	Inductance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Measurement : After placing for 24 hours min. Temperature : -40±2℃ Testing time : 500±12 hours
Vibration	Inductance:Within±20% of the initial value. Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged.	After the samples shall be soldered onto the test circuit board,the test shall be done. Frequency : 10 to 55 Hz Amplitude : 1.52 mm Dimension and times : X ,Y and Z directions for 2 hours each.
Solderability	New solder More than 75%	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±0.2 seconds fully in molten solder M705 with a temperature of 245±2℃. More than 75% of the electrode sections shall be couered with new solder smoothly when the sample is taken out of the solder bath.
High Temp with Load Test	After relibility test △L within ±25%	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.

(5) LAND DIMENSION (Ref.)

PCB: GLASS EPOXY t=1.6mm

(5)-1 LAND PATTERN DIMENSIONS

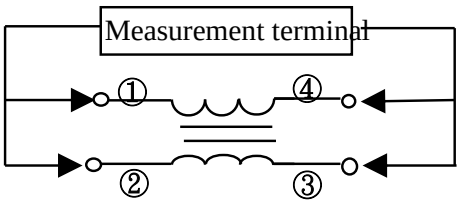
(STANDARD PATTERN)



(6) TEST EQUIPMENT

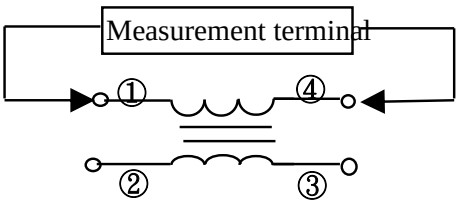
(6)-1 Inductance

Measured by using HP4291B RF Impedance Analyzer.



(6)-2 DC Resistance

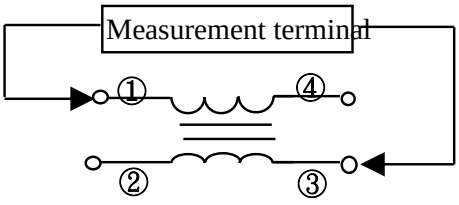
Measured by using Chroma 16502 milliohm meter.



(6)-3 Insulation Resistance

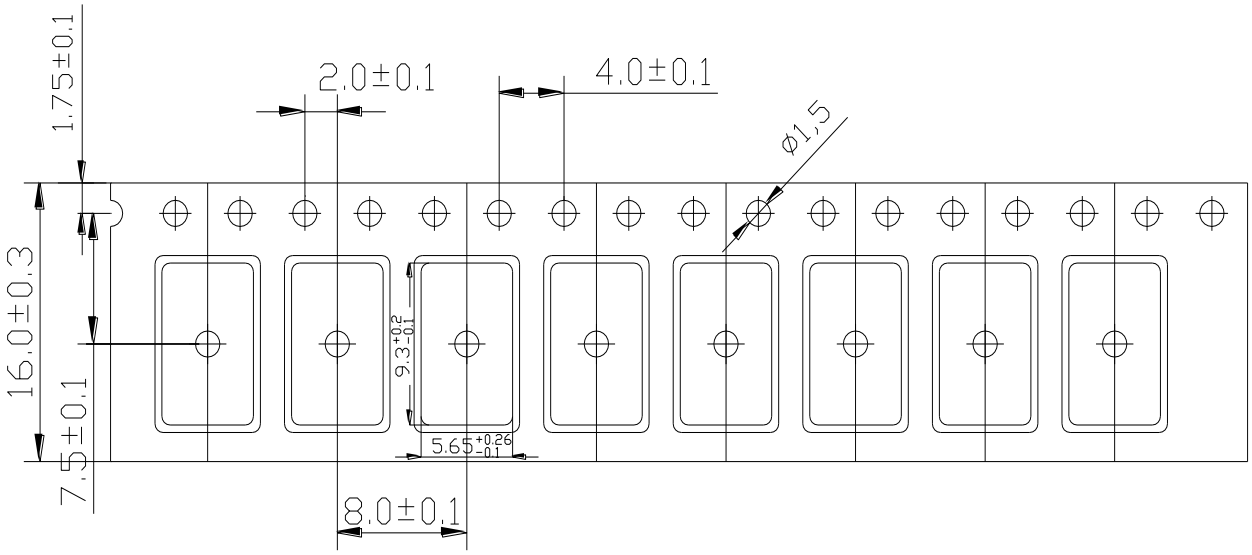
Measured by using Chroma 19073

Measurement time : 60 sec.

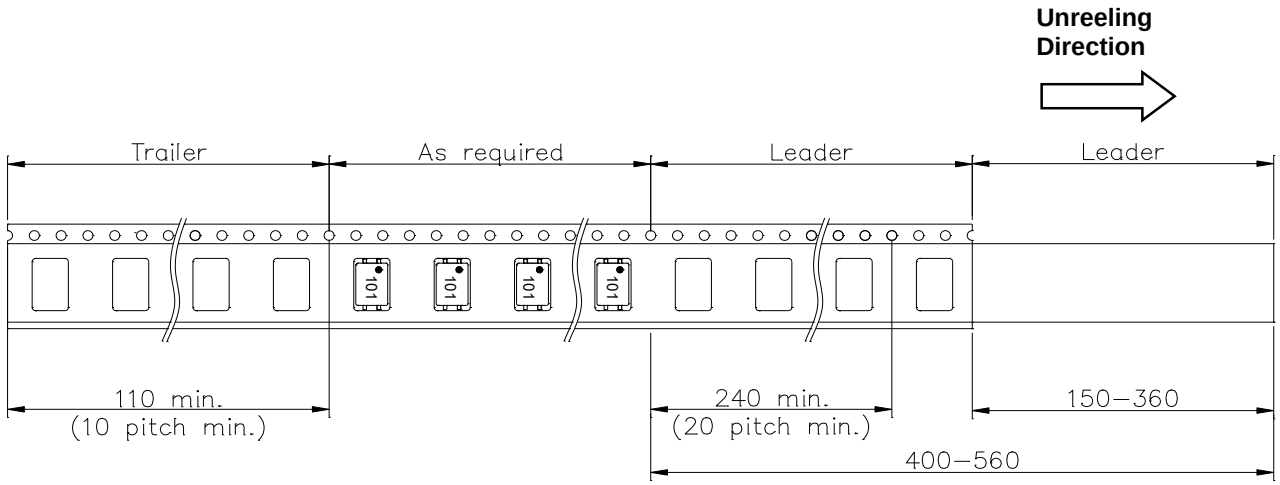


(6) PACKAGING

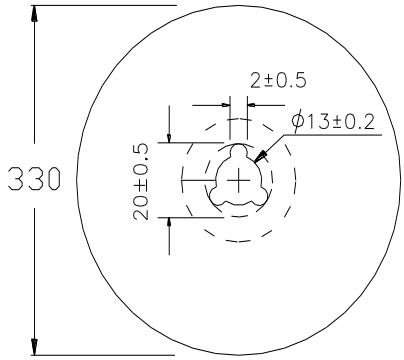
(6)-1 CARRIER TAPE DIMENSIONS (mm)

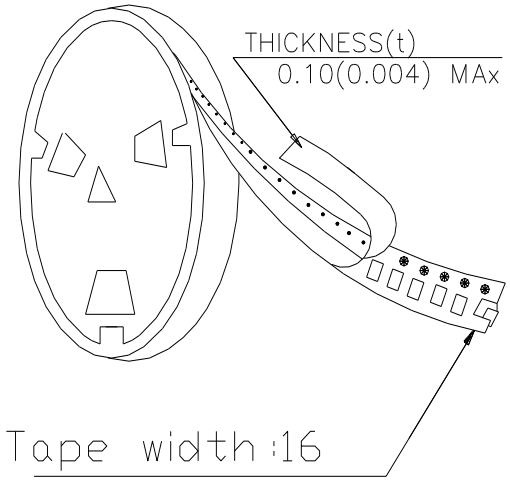


(6)-2 TAPING DIMENSIONS (mm)



(6)-3 REEL DIMENSIONS (mm)





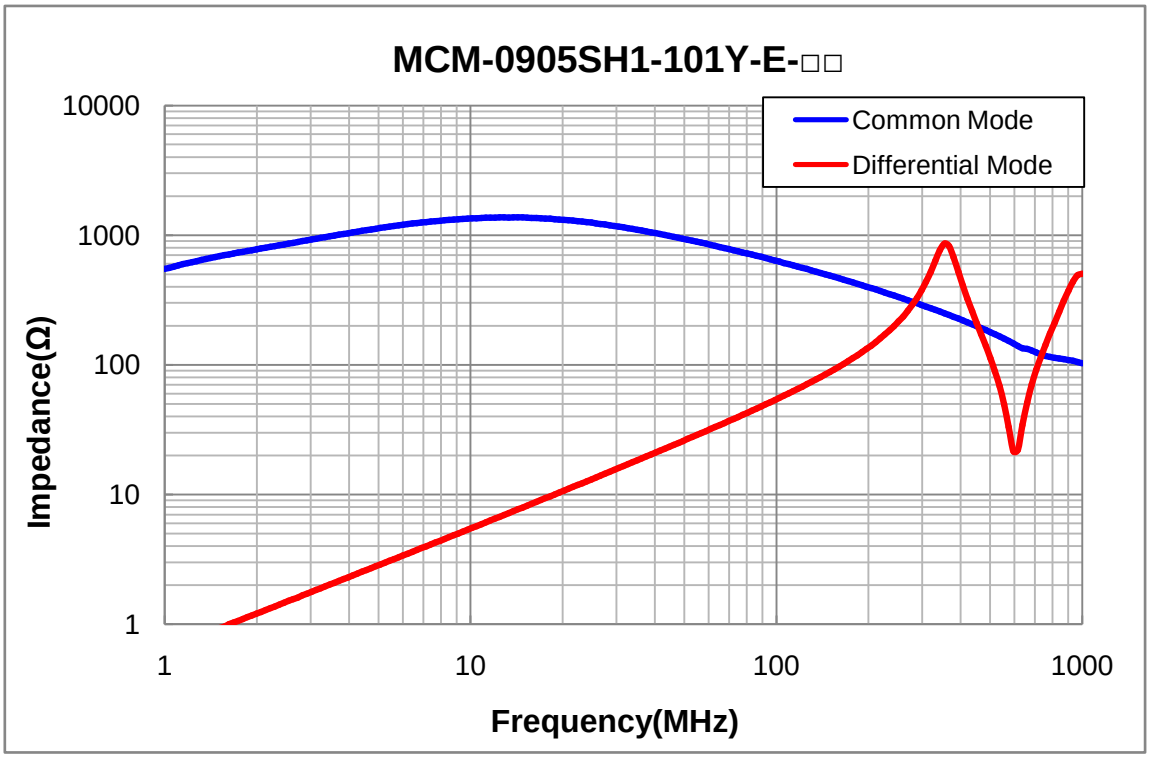
(6)-4 QUANTITY

1500 pcs/Reel

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

TYPICAL ELECTRICAL CHARACTERISTICS

FREQUENCY VS. IMPEDANCE



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