

Specification Sheet

P/N: MCM-0905-202-F-RU

Products: Certifications:

Molded Power Chokes ISO9001

Multilayer Chip Inductors IATF16949

<u>Lan Transformer</u> ISO14001

RF Passive / Antennas QC080000

Automotive

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REVISIONS

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REV.	Description	Date	Approvaled by	Checked by	Checked by	Prepared by
00	Issue	2014.02.26	Vincent	Marco	Sara	Brian
01	P.8/8 Quantity Updated	2016.09.05	Vincent	Marco	Sara	Stanley
02	P.1/8 Scope updated P.2/8 Materials removed P.4/8~5/8 Reliability test method updated	2021.01.06	Vincent	Marco	Sara	Stanley



I.SCOPE:

This specification applies to the Pb Free Signal Line Common Mode Filter for MCM-0905-SERIES-□-□□

PRODUCT INDENTIFICATION

4

- ① ② ③
- **1** Product Code
- 2 Dimensions Code
- **3 Impedance Code**
- **4** Inner Control Code

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Unless otherwise specified, test condition should be Temp. = 20±5°C,

Humidity=35~85%

But if needed, then test condition should be Temp. = 20±2°C,

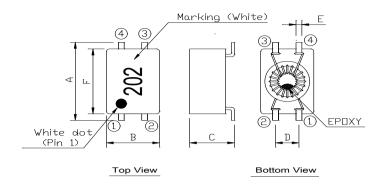
Humidity=65±5%

8.SHELF LIFE

Storage Condition:The temperature should be within-40 $^{\circ}$ C ~105 $^{\circ}$ C and humidity should be less than 75%RH. The product should be used within 12 months from the time of delivery.

In addition, suggest to use product within 6 months from the time of delivery.

(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

Z : HP 4285A 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° C $\sim +125^{\circ}$ C (Including self temp. rise)

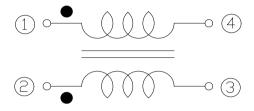
(3)-2 Storage temperature range -40 $^{\circ}$ \sim +125 $^{\circ}$

TABLE 1

MAGLAYERS PT/NO.	Impedance(Ω) at 10MHz		Resistance RDC (Ω) Max.	Rated Current	Insulation Resistance	Rated Voltage (V) Max.	Marking
	Min.	Тур.	(1 line)	(A) Max.	(MΩ) Min.	, ,	
MCM-0905-202-F-□ □-RU	1000	2000	0.25	0.5	100	80	● 202

IDC : Based on temperature rise $(\triangle T : 40^{\circ}C \text{ Typ.})$

CIRCUIT DIAGRAM



(4) RELIABILITY TEST METHOD

MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Solder ability	The product shall be connected to the test	Apply cream solder to the printed circuit board .
	circuit board by the fillet (the height is 0.2mm).	Refer to clause 8 for Reflow profile.
Resistance to	There shall be no damage or problems.	Temperature profile of reflow soldering
Soldering heat		Temperature
(reflow soldering)		Ramp up: Ramp down: 3°C/sec. max. 6°C/sec. max.
		260°C
		217°C
		160°C
		Soldering 260°C ±3°C
		10 - 30 sec.
		25°C Preheat + Liquidus + Time 150-200°C >217°C
		60-120 sec. 60-150 sec.
		The specimen shall be passed through the reflow oven
		with the condition shown in the above profile for 1 time.
		The specimen shall be stored at standard atmospheric
		eric conditions for 1 hour, after which the measurement
		shall be made.
Terminal strength	The terminal electrode and the ferrite must	Solder a chip to test substrate , and then laterally apply
	not damaged.	a load 9.8N in the arrow direction.
		- Soard
		O.
		printed circuit board
		- A
Strength on PC board	The terminal electrode and the ferrite must	Solder a chip to test substrate and then apply a load.
bending	not damaged.	
		10 20 Test board:FR4 100×40×1mm
		R10 [Fall speed:1mm/sec.
		45 45 Dimensions in mm
High	Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test circuit
temperature	Insulation resistance and DC resistance on the	board,the test shall be done.
resistance	specification(refer to clause 2-1) shall be met.	Measurement : After placing for 24 hours min.
	The terminal electrode and the ferrite must not	Temperature : +125±2℃
	damaged.	Applied voltage : Rated voltage
		Applied current : Rated current
		Testing time : 500±12 hours
t.		



(4) RELIABILITY TEST METHOD

MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Humidity	Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test circuit
resistance	Insulation resistance and DC resistance on the	board,the test shall be done.
	specification(refer to clause 2-1) shall be met.	Measurement : After placing for 24 hours min.
	The terminal electrode and the ferrite must not	Temperature : +60±2℃ , Humidity : 90 to 95 %RH
	damaged.	Applied voltage : Rated voltage
		Applied current : Rated current
		Testing time : 500±12 hours
Thermal shock	Impedance: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.	1 cycle 30 min. -40°C 30 min. Testing Time:100 cycle
Low	Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test
temperature	Insulation resistance and DC resistance on the	circuit board,the test shall be done.
storage	specification(refer to clause 2-1) shall be met.	Measurement : After placing for 24 hours min.
	The terminal electrode and the ferrite must	Temperature : -40±2℃
	not damaged.	Testing time : 500±12 hours
Vibration	Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test circuit
	Insulation resistance and DC resistance on	board,the test shall be done.
	the specification(refer to clause 2-1)	Frequency : 10 to 55 Hz
	shall be met.	Amplitude : 1.52 mm
	The terminal electrode and the ferrite must	Dimension and times : X ,Y and Z directions
	not damaged.	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.

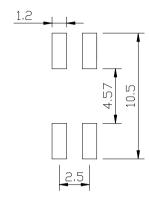


(5) LAND DIMENSION (Ref.)

PCB: GLASS EPOXY t=1.6mm

(5)-1 LAND PATTERN DIMENSIONS

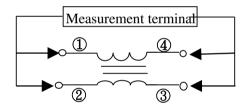
(STANDARD PATTERN)



(6) TEST EQUIPMENT

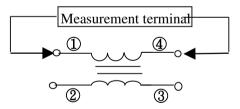
(6)-1 Impedance

Measured by HP4291B RF Impedance Analyzer.



(6)-2 DC Resistance

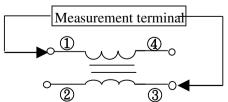
Measured by Chroma 16502 milliohm meter.



(6)-3 Insulation Resistance

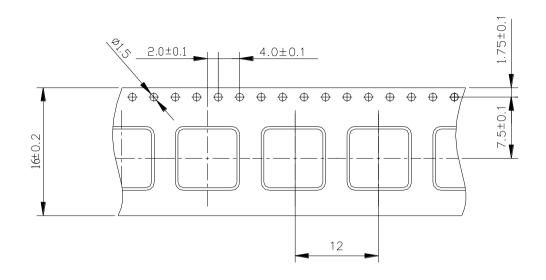
Measured by Chroma 19073

Measurement voltage: 50V, Measurement time: 3 sec.



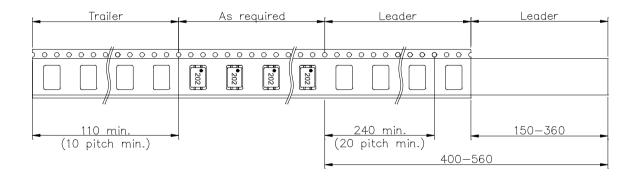
(7) PACKAGING

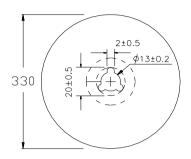
(7)-1 CARRIER TAPE DIMENSIONS (mm)

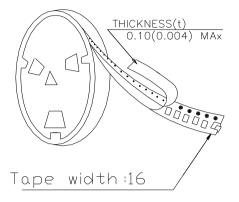


(7)-2 TAPING DIMENSIONS (mm)









(7)-4 QUANTITY

1000 pcs/Reel

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

TYPICAL ELECTRICAL CHARACTERISTICS

