

Specification Sheet

P/N: MCM-0905S-Series-F-RU

Products: Certifications:

Molded Power Chokes ISO9001

Multilayer Chip Inductors IATF16949

<u>Lan Transformer</u> ISO14001

RF Passive / Antennas QC080000

Automotive

US Office Contact Us

5406 Bolsa Ave., Huntington Beach, CA 92649 (714) 898-8377 www.maglayersusa.com info@maglayersusa.com

REVISIONS

REV.	Description	Date	Approvaled by	Checked by	Checked by	Prepared by
00	Issue	2021.01.04	Vincent	Marco	Sara	Stanley



I. SCOPE:

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

for MCM-0905S-SERIES- ...

PRODUCT INDENTIFICATION

MCM - 0905S - 102 Y - F-□□ -RU

(1)

2

34

(5)

- ① Product Code
- 2 Dimensions Code
- **3 Inductance Code**
- **4**Tolerance
- **(5) Inner Control Code**

Π . INDEX:

LISTED ITEM	ATTACHEMENT & TABLES	PAGE
1. SHAPES AND DIMENSIONS	Please see (1)	2/8
2. ELECTRICAL SPECIFICATIONS	Please see (2)	2/8 , 3/8
3. CHARACTERISTICS	Please see (3)	2/8,3/8
4. RELIABILITY TEST METHOD	Please see (4)	4/8 - 5/8
5. LAND DIMENSION (Ref.)	Please see (5)	6/8
6. TEST EQUIPMENT	Please see (6)	6/8
7. PACKAGING	Please see (7)	7/8,8/8

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

Humidity=35~85%

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

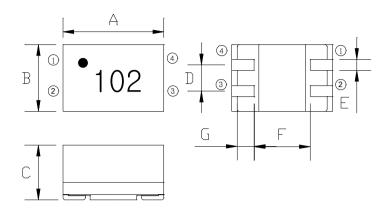
Humidity=65±5%

8.SHELF LIFE

Storage Condition:The temperature should be within-40°C ~105°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(mm)



A: 9.2±0.3 mm
B: 6.0±0.3 mm
C: 5.0±0.3 mm
D: 2.54±0.2 mm
E: 1.0±0.1 mm
F: 5.7 Ref. mm
G: 1.4 Ref. mm

(2) ELECTRICAL SPECIFICATIONS SEE TABLE 1

TEST INSTRUMENTS

L : HP 4284A PRECISION LCR METER (or equivalent)Z : E4991A 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° C $\sim +125^{\circ}$ C

TABLE 1

MAGLAYERS PT/NO.	L(1-4),(2-3) (uH)	Impedance(Ω) Typ.	RDC (Ω) Max. (1 line)	Rated Current (A) Max.	Leakage L (nH) Typ. 1MHz/1mA	Insulation Test Voltage (AC) Max.	Rated Voltage (V) Max.	Marking
MCM-0905S-100Y-E-□ □-RU	10±30%	920	0.08	1.6	55	500	80	●100
MCM-0905S-102Y-F-□□-RU	1000±50%	6000	0.31	0.8	90	500	80	●102
MCM-0905S-202Y-F-□□-RU	2000±50%	9200	0.42	0.6	130	500	80	●202
MCM-0905S-652Y-E-□□-RU	6500±50%	18400	0.95	0.4	280	500	80	●652

100Y Test Frequency: 1KHz/100mV

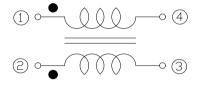
102Y · 202Y Test Frequency: 100KHz/5mV

652Y Test Frequency: 10KHz/50mV

Rated Current : Based on temperature rise ($\triangle T$: 40°C Max.)

Insulation Resistance : 3 sec. (10M Ω Min.)

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 Time
		←Preheat→ ← Liquidus → 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.
		t poard
		mted eir cuit
		Prince
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:Imm/sec.
		45 45 Dimensions in mm

High	Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test circuit
High 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



(4) RELIABILITY TEST METHOD

MECHANICAL

Impedance.Within : 200/ of the initial value				
Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test circuit			
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			
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 30 sec 30 min. Testing Time:100 cycle			
Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test			
Insulation resistance and DC resistance on the	circuit 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	Temperature : -40±2℃			
not damaged.	Testing time : 500±12 hours			
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.			
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.			
	specification(refer to clause 2-1) shall be met. The terminal electrode and the ferrite must not damaged. 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. 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. 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.			

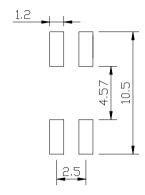


(5) LAND DIMENSION (Ref.)

PCB: GLASS EPOXY t=1.6mm

(5)-1 LAND PATTERN DIMENSIONS(mm)

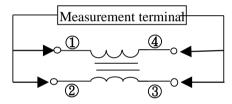
(STANDARD PATTERN)



(6) TEST EQUIPMENT

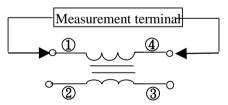
(6)-1 Impedance

Measured by HP4291B RF Impedance Analyzer.



(6)-2 DC Resistance

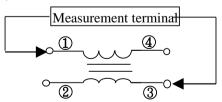
Measured by Chroma 16502 milliohm meter.



(6)-3 Insulation Resistance

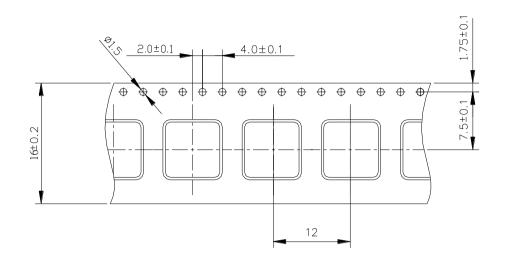
Measured by Chroma 19073

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



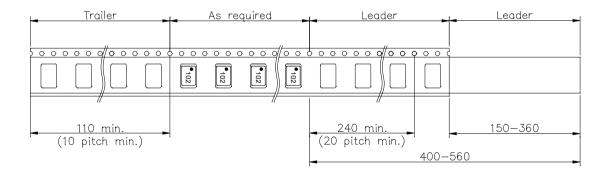
(7) PACKAGING

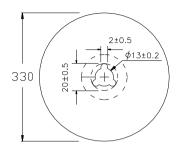
(7)-1 CARRIER TAPE DIMENSIONS (mm)

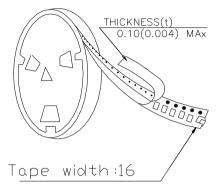


(7)-2 TAPING DIMENSIONS (mm)







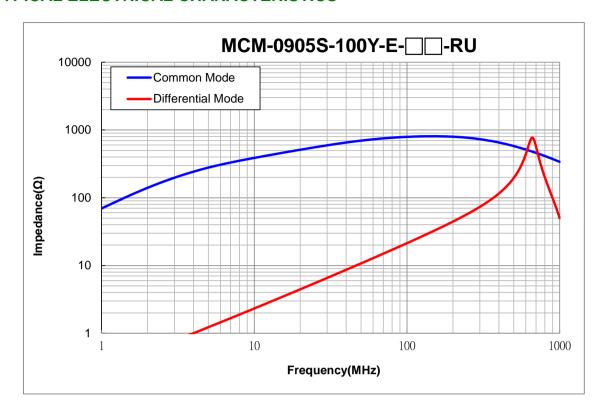


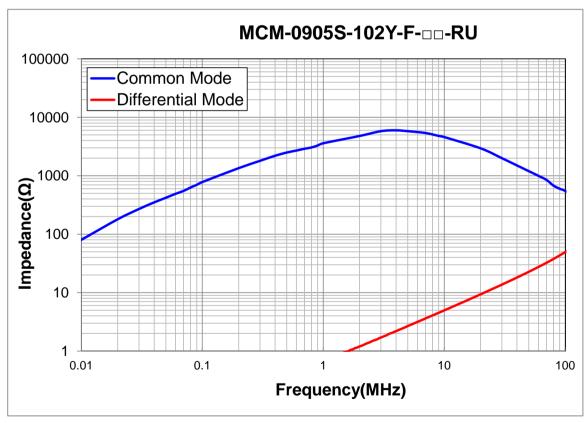
(7)-4 QUANTITY

800 pcs/Reel

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

TYPICAL ELECTRICAL CHARACTERISTICS







TYPICAL ELECTRICAL CHARACTERISTICS

