

Specification Sheet

P/N: MCM-0905C-102Y-E-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

		KEVISIO				
REV.	Description	Date	Approvaled by	Checked by	Checked by	Prepared by
00	Issue	2016.05.06	Vincent	Marco	Sara	Stanley
01	P.3/8 TABLE 1 Updated P.4/8 \ 5/8 Reliability Test Method Updated P.6/8 Teat Equipment Updated	2019.02.26	Vincent	Marco	Sara	Stanley
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I.SCOPE:

This specification applies to the Pb Free high current type SMD Common mode filter for MCM-0905C-SERIES-□-□□

PRODUCT INDENTIFICATION

1

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3 4

(5)

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

Π . INDEX:

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

Humidity= $35\sim85\%$

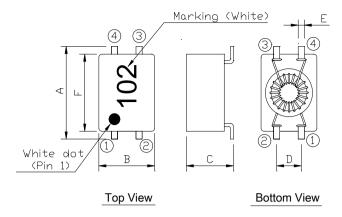
But if needed, then test condition should be Temp. = 20 ± 2 °C,

Humidity=65±5%

9.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



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)

(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

MATERIALS

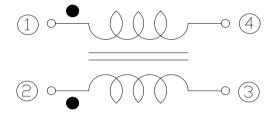
NO.	ITEM	DESCRIPTION & TYPE	UL NO.	MANUFACTURER
1	CORE	FERRITE		ENCORE ELECTRONICS TECHNOLOGY CO., LTD.
				ACME ELECTRONICS CORPORATION
2	BASE	PM9630		YUAN SHING ELECTRONIC INC.
3	WIRE	POLYURETHANE ENAMELLED	E84081	PACIFIC ELECTRICAL WIRE & CABLE CO., LTD.
		COPPER WIRE	E258243	ELEKTRISOLA CO., LTD.
			E255839	SHING SHUN MAGNET WIRE (HUIZHOU) CO., LTD.
4	SOLDER	Sn99.3%/Cu0.7%		SHENMAO TECHNOLOGY INC.OR EQUIV.
				SOLNET METAL INDUSTRY CO., LTD.
				OR EQUIV.
5	INK	BON MARQUE INK		T&K TOKA.
				OR EQUIV.
6	ADHESIVE	EPOXY RESIN		NAGASE TRADING CO., LTD.
				OR EQUIV.

TABLE 1

MAGLAYERS PT/NO.	Inductance L(mH) (1-4),(2-3) at 10KHz/0.1V	Resistance RDC(Ω) Max. (1-4),(2-3)	Rated Current (A) Max.	Insulation Resistance (MΩ) Min.	Marking
MCM-0905C-102Y-E-□□-RU	1.0±50%	0.21	1.0	10	● ₁₀₂

Rated Current : Based on temperature rise ($\triangle T : 40^{\circ}C$ Max.)

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 Soldering heat (reflow soldering)	There shall be no damage or problems.	Temperature profile of reflow soldering soldering Soldering (Peak temperature 260±3°C 10 Pre- Pre- Slow cooling
		Slow cooling (Stored at room temperature) 2 min 10 sec 2 min. or
		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.
		Printed circuit board phinted circuit board phinted circuit board
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.	Test board:FR4 100×40×1mm R10 Fall speed:1mm/sec. 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



(4) RELIABILITY TEST METHOD

MECHANICAL

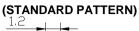
TEST ITEM	SPECIFICATION	TEST DETAILS
Humidity	Impedance:Within±20% of the initial value.	After the samples shall be soldered onto the test circuit
resistance	Insulation resistance and DC resistance on the	board,the test shall be done.
	specification(refer to clause 2-1) shall be met.	Measurement : After 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 +125°C 30 min. 30 sec -40°C 30 min.
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.

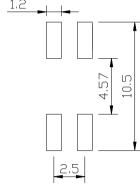


(5) LAND DIMENSION (Ref.)

PCB: GLASS EPOXY t=1.6mm

(5)-1 LAND PATTERN DIMENSIONS

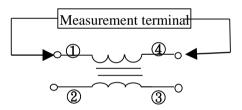




(6) TEST EQUIPMENT

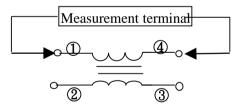
(6)-1 Inductance

Measured by using HP4284A precision LCR meter



(6)-2 DC Resistance

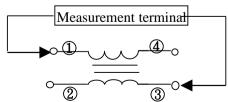
Measured by using Chroma 16502 milliohm meter.



(6)-3 Insulation Resistance

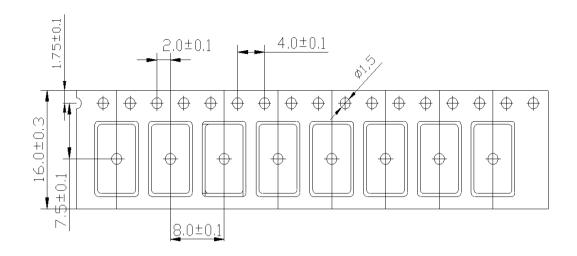
Measured by using Chroma 19073

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

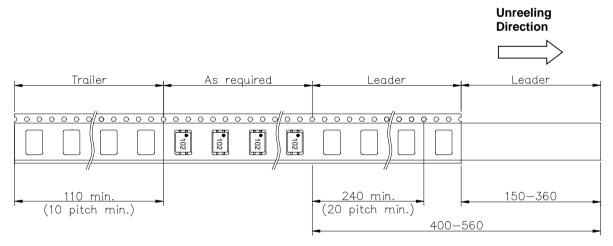


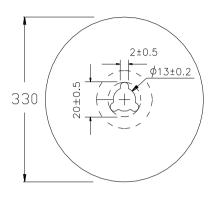
(6) PACKAGING

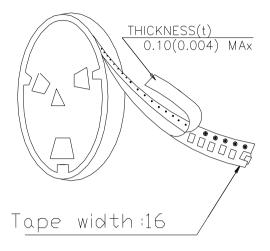
(6)-1 CARRIER TAPE DIMENSIONS (mm)



(6)-2 TAPING DIMENSIONS (mm)





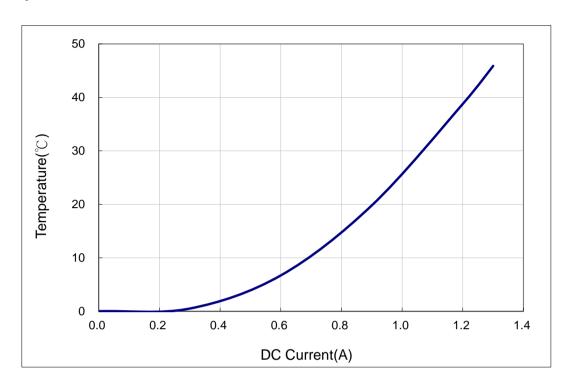


1500 pcs/Reel

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

TYPICAL ELECTRICAL CHARACTERISTICS

Temperature Rise vs. DC Current



Impedance VS. Frequency

