



Mag Layers USA, INC

Specification Sheet

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

Products:

[Molded Power Chokes](#)

[Multilayer Chip Inductors](#)

[Lan Transformer](#)

[RF Passive / Antennas](#)

[Automotive](#)

Certifications:

[ISO9001](#)

[IATF16949](#)

[ISO14001](#)

[QC080000](#)

US Office

5406 Bolsa Ave.,
Huntington Beach, CA 92649
(714) 898-8377

Contact Us

www.maglayersusa.com
info@maglayersusa.com

I. SCOPE :

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

PRODUCT IDENTIFICATION

MCM - 0905C - 102 Y - E - □□-RU

① ② ③ ④ ⑤

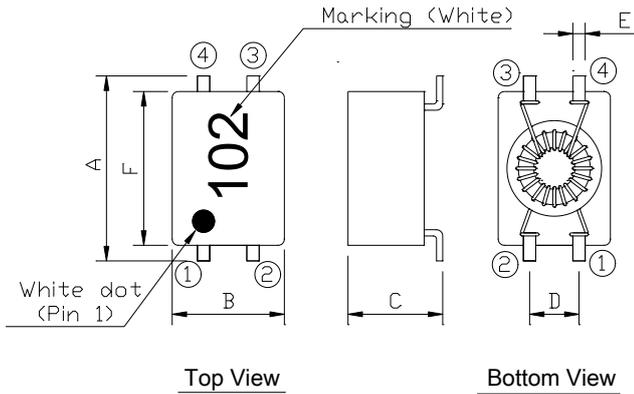
- ① Product Code
- ② Dimensions Code
- ③ Inductance Code
- ④ Tolerance Code
- ⑤ Inner Control Code

II. INDEX :

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<p>Unless otherwise specified, test condition should be Temp. = 20±5℃, Humidity = 35~85%</p> <p>But if needed, then test condition should be Temp. = 20±2℃, Humidity = 65±5%</p> <p>9.SHELF LIFE</p> <p>Storage Condition: The temperature should be within -40℃ ~105℃ and humidity should be less than 75%RH. The product should be used within 12 months from the time of delivery.</p> <p>In addition, suggest to use product within 6 months from the time of delivery.</p>		



(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 $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$

(Including self temp. rise)

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

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 COPPER WIRE	E84081 E258243 E255839	PACIFIC ELECTRICAL WIRE & CABLE CO., LTD.
				ELEKTRISOLA CO., LTD.
				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.

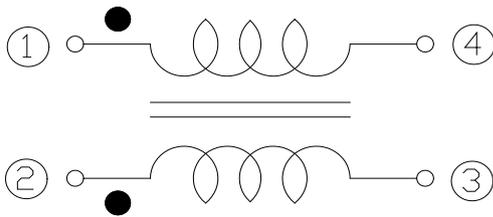


TABLE 1

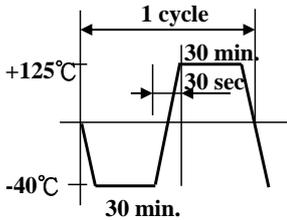
MAGLAYERS PT/NO.	Inductance L(mH) (1-4),(2-3) at 10KHz/0.1V	Resistance RDC(Ω) Max. (1-4),(2-3)	Rated Current (A) Max.	Insulation Resistance (M Ω) Min.	Marking
MCM-0905C-102Y-E-□□-RU	1.0 \pm 50%	0.21	1.0	10	●102

Rated Current : Based on temperature rise (ΔT : 40°C Max.)

CIRCUIT DIAGRAM



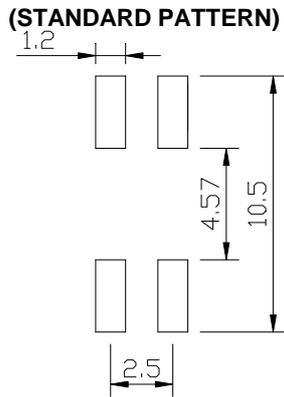
(4) RELIABILITY TEST METHOD
MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Humidity resistance	<p>Impedance: Within $\pm 20\%$ of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : $+60 \pm 2^\circ\text{C}$, Humidity : 90 to 95 %RH</p> <p>Applied voltage : Rated voltage</p> <p>Applied current : Rated current</p> <p>Testing time : 500 ± 12 hours</p>
Thermal shock	<p>Impedance: Within $\pm 20\%$ of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	
Low temperature storage	<p>Impedance: Within $\pm 20\%$ of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : $-40 \pm 2^\circ\text{C}$</p> <p>Testing time : 500 ± 12 hours</p>
Vibration	<p>Impedance: Within $\pm 20\%$ of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Frequency : 10 to 55 Hz</p> <p>Amplitude : 1.52 mm</p> <p>Dimension and times : X , Y and Z directions for 2 hours each.</p>
Solderability	<p>New solder More than 75%</p>	<p>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 $130 \sim 150^\circ\text{C}$ 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 $245 \pm 2^\circ\text{C}$. More than 75% of the electrode sections shall be covered with new solder smoothly when the sample is taken out of the solder bath.</p>

(5) LAND DIMENSION (Ref.)

PCB: GLASS EPOXY t=1.6mm

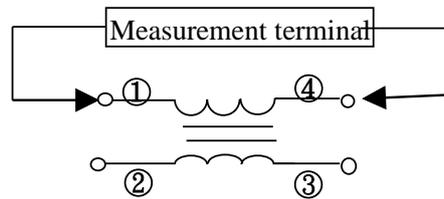
(5)-1 LAND PATTERN DIMENSIONS



(6) TEST EQUIPMENT

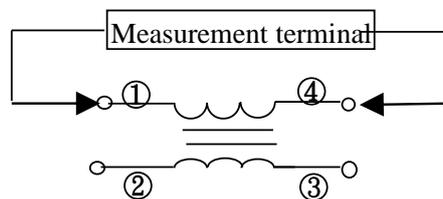
(6)-1 Inductance

Measured by using HP4284A precision LCR meter



(6)-2 DC Resistance

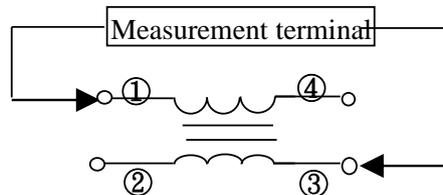
Measured by using Chroma 16502 milliohm meter.



(6)-3 Insulation Resistance

Measured by using Chroma 19073

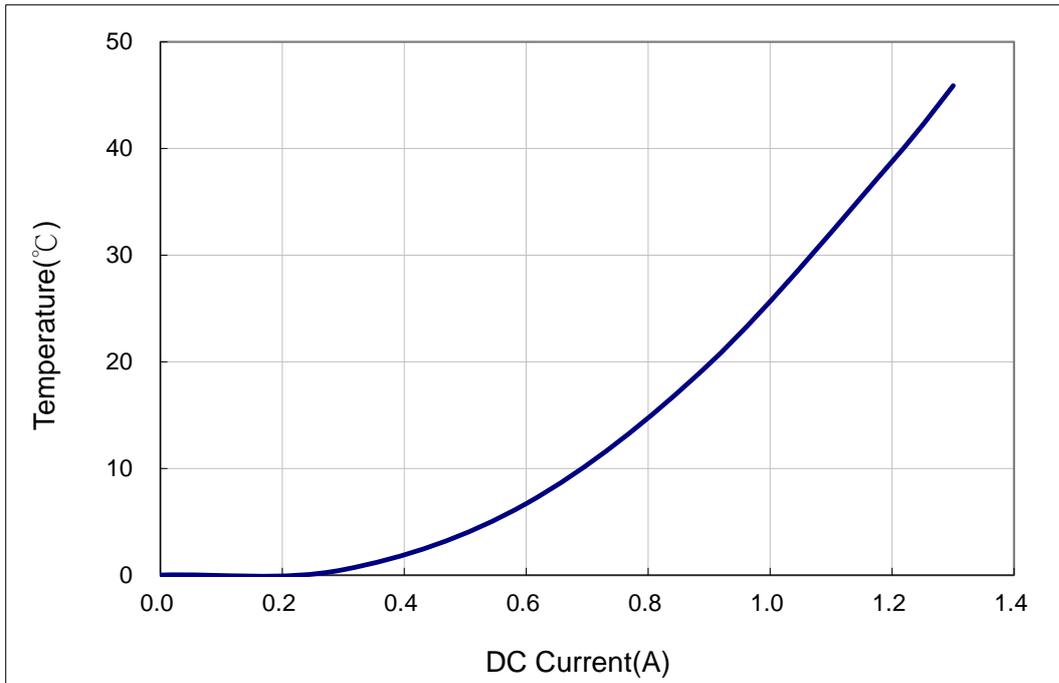
Measurement voltage : 50V ,Measurement time : 3 sec.



MAG.LAYERS

TYPICAL ELECTRICAL CHARACTERISTICS

Temperature Rise vs. DC Current



Impedance VS. Frequency

