




**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	R0325- MACM5045142S01	
<b>DATE</b>	Mar. 25, 2024	
<b>REVISION</b>	A0	Updated With Most Recent Data - Official First Release
<b>DESCRIPTION AND MAIN PARAMETRICS</b>	<p>Chip Common Mode Inductors, MACM series, 4 pins            Size Code 5045, Dimension: L5.0*W4.5*H2.5mm            Impedance @100MHz: 1400Ω Typ.,            Rated current: 1.5A Max; D.C. Resistance: 56 mΩ Max.            Operating Temp. Range -40°C ~+125°C.            Package in Tray, RoHS/RoHS III Compliant</p>	
<b>CUSTOMER</b>		
<b>CUSTOMER PART NO.</b>		
<b>CROSS REF. PART NO.</b>		
<b>ORIGINAL MFG/PART NO.</b>	Coilmx/MACM5045-142	
<b>PART CODE</b>	MACM5045142S01	

<b>VENDOR APPROVE</b>			
Issued/Checked/Approved			
DATE: Mar. 25, 2024			

<b>CUSTOMER APPROVE</b>	
DATE:	

**CHIP COMMON MODE INDUCTORS MACM SERIES CASE 5045**

**MAIN FEATURE**

- Super low resistance, ultra high current rating.
- high performance(I sat) realized by metal dust core.
- Frequency Range: up to 1MHZ.
- Cross Competitors Parts
- RoHS III Complaint



**APPLICATION**

- For Low profile , high current power supplies.
- Battery powered devices.
- DC/DC converters in distributed power systems.
- DC/DC converters for field programmable gate array.

**PART CODE GUIDE**

**RFQ**  
[Request For Quotation](#)

MACM	5045	142	S01
1	2	3	4

1. MACM: Chip Common Mode Inductors, MACM series, 4 pins
2. 5045: Size Code 5045, Dimension: L5.0\*W4.5\*H2.5mm
3. 142: Impedance Code, 142: 1400Ω
4. S01: Internal Control Code or special Parameters code letter A~Z or digits (1-9)

**ELECTRICAL CHARACTERISTICS**

See Page 4 For Different Part Code

**HOW TO ORDER**

Please indicate pat code and send us your RFQ by E-mail, [sales@nextgencomponent.com](mailto:sales@nextgencomponent.com)

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**DIMENSION** – (Unit: mm)

Image For Reference

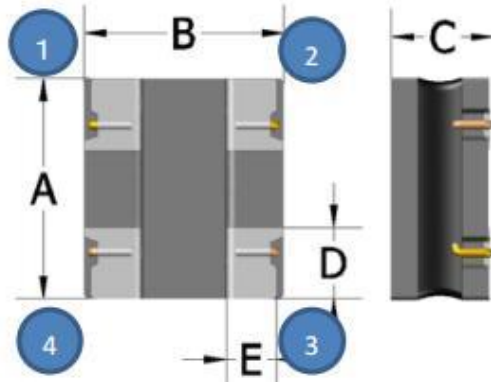


**MACM Series**

Size Code 5045

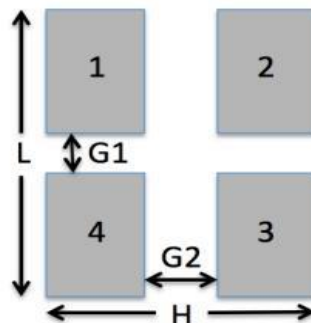
Dimension:

L5.0\*W4.5\*H2.5mm



Symbol	Dimension (mm)
A	5.0±0.3 Max.
B	4.5±0.3 Max.
C	2.5 Max.
D	2.1±0.3
E	1.1±0.3

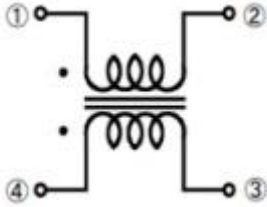
Recommend PCB Layout



Symbol	Dimension (mm)
L	5.5 Ref.
H	4.6 Ref.
G1	1.5 Ref.
G2	1.2 Ref.

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**CIRCUIT DIAGRAMT**



**ELECTRICAL CHARACTERISTIC**

Part Code	Z(Ω) @100MHZ Typ.	DCR (mΩ) Max	Rated Current (A)Max.	Rated Voltage (V) Typ.	IR (MΩ) Min	Withstand Voltage (V)Typ.
MACM5045101S01	100	12.6	6	50	10	125
MACM5045251S01	250	19.6	5	50	10	125
MACM5045501S01	500	26.6	4	50	10	125
MACM5045102S01	1000	33.6	3	50	10	125
<b>MACM5045142S01</b>	<b>1400</b>	<b>56</b>	<b>1.5</b>	<b>50</b>	<b>10</b>	<b>125</b>

**Notes**

1. All test data is based on 25°C ambient.
2. DC current(A)that will cause an approximate  $\Delta T40^{\circ}C$
3. Operating Temperature: -40°C up to +125°C
4. The part temperature (ambient + temp rise)should not exceed 125°C under worst case operating conditions. circuit design, component. PWB trace size and thickness, airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the den application.

**CHIP COMMON MODE INDUCTORS MACM SERIES CASE 5045**

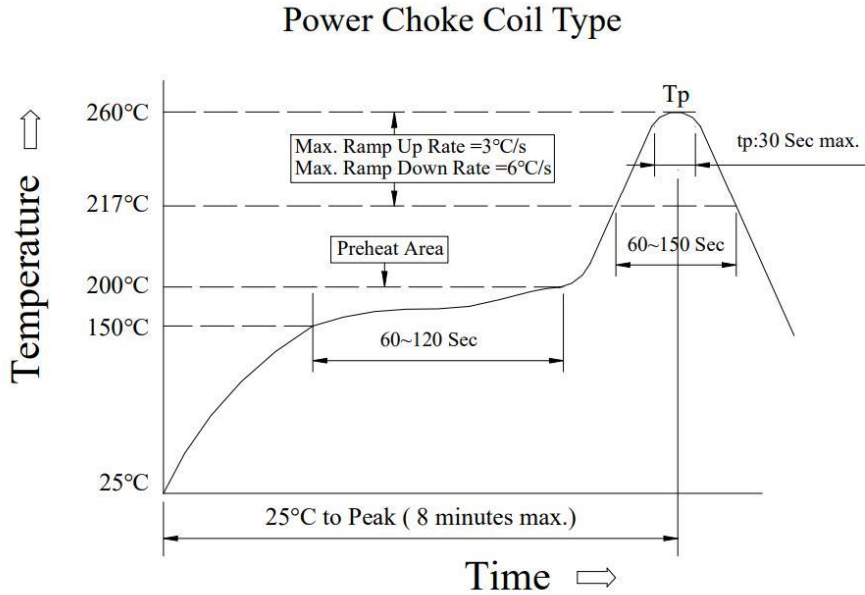
**RELIABILITY TEST**

No.	Item	Specification and Requirement	Test Method
1	Solder ability test	Terminals area must have 95% min solder coverage	(1) Preheating: 160±10°C for 90 seconds (2) Retention time: 245±5°C for 2±0.5 seconds
2	Vibration test	Inductance change: Within±5% Without mechanical damage such as break	(1) Vibration frequency: (10Hz to 55Hz to 10Hz) in 60 seconds as a period (2) Vibration time: for 2 hours in each of 3 mutual perpendicular directions (3) Amplitude: 1.5 mm Max
3	Shock test	Inductance change: Within±5% Without mechanical damage such as break	(1) Peak value: 100G (2) Duration of pulse: 11ms (3) Times in each positive and negative direction of 3 mutual perpendicular directions
4	Thermal shock	Inductance change: Within±5% Without mechanical damage such as break	(1) Repeat 100 cycle as follow: (-40±2°C,30±3 minutes) Room temperature, 5 minutes; (+125±2°C,30±3 minutes) Room temperature, 5 minutes (2) Recovery: 48+4/-0 hours of recovery under the standard condition after the test.
5	High temperature life test	Inductance change: Within±5% Without mechanical damage such as break	(1) Environment condition : 85±2°C Applied current: Rated current (2) Duration:1000+4/-0 hours
6	Humidity Resistance	Inductance change: Within ±5% Without mechanical damage such as break	(1) Environment condition : 60±2°C Humidity:90~95%, Applied current: Rated current (2) Duration:1000+4/-0 hours
7	Low temperature life test	Inductance change: Within ±5% Without mechanical damage such as break	(1) Store temperature: -40±2°Cfor total 1000+4/-0 hours
8	High temperature life test	Inductance change: Within±5% Without mechanical damage such as break	(1) Store temperature: +125±2°Cfor total 1000+4/-0 hours

3/25/2024

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**REFLOW PROFILE**



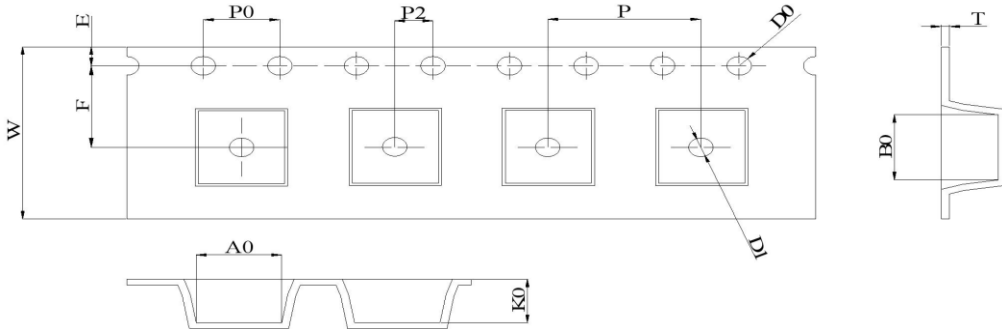
**REFLOW SOLDERING METHOD**

Reflow Soldering	Tp:255~260°C	Max.30 seconds ( tp )
	217°C	60~150 seconds
Pre-Heat	150 ~ 200°C	60~120 seconds
Time 25°C to peak temperature	8 minutes max.	

**SOLDERING IRON METHOD: 350±5°C Max.3 seconds.**

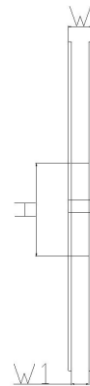
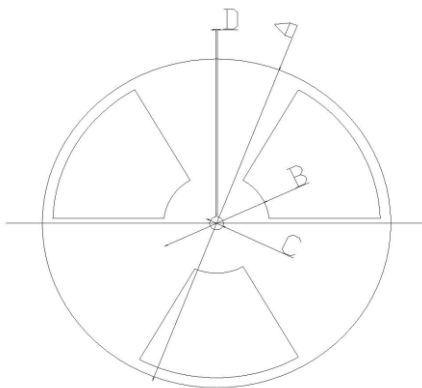
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**TAPE DIMENSION (Unit: mm), 2500pcs/Reel**



W	A0	B0	K0	P	F	E	D0	P0	T
12.00 ±0.30	4.80 ±0.10	5.30 ±0.10	2.50 ±0.10	8.00 ±0.10	5.50 ±0.10	1.75 ±0.10	1.50 ±0.10	4.00 ±0.10	0.25 ±0.05

**REEL DIMENSION (Unit: mm)**



Code	Dimension (mm)
A	330.0 ± 2.0
B	100.0 ± 1.0
C	13.0 ± 1.0
D	1.9 ± 0.4
W	17.4 Max
W1	12.4 ± 1.0

## CHIP COMMON MODE INDUCTORS MACM SERIES CASE 5045

### ROHS COMPLIANCE

- The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained can be obtained at Download Center.

### REACH COMPLIANCE

- REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained can be obtained at Download Center.

### IMPORTANT NOTES AND DISCLAIMER

1. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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