



INPAQ

PRODUCT SPECIFICATION

DOCUMENT NO.ENS000023130

DESCRIPTION	DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
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RoHS


Multilayer Power Inductor (MIP Series) Engineering Spec.

This product belongs to the industrial grade standard, not the vehicle gauge product! Can not use auto parts, if the customer is not expressly informed and privately used to auto parts, produce any consequences, the original is not responsible for after-sales service, thank you!

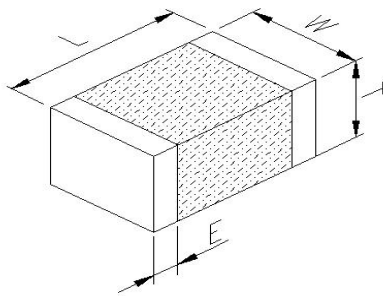
■ Features

- The monolithic construction performs high reliability and ensures a closed magnetic flux in a component avoids magnetic leakage and interference .
- Allow for higher mounting density.
- Low DC resistance.

■ Applications

Suitable for DVD , DSC , PND , PC , NB , Power Line

■ Shapes and Dimensions



TYPE	2012 (EIA0805)
L	2.00±0.20
W	1.25±0.20
T	0.90±0.10
E	0.50±0.30
Unit	mm

■ Part Number Code

MIP 2012 2R2 M B E DG
 1 2 3 4 5 6 7

- 1 Series Name
- 2 Size Code : The first two digitals: length(mm) , the last two digitals: width(mm)
- 3 Inductance : R = Decimal point , Unit = μ H
- 4 Tolerance : M = $\pm 20\%$
- 5 Soldering : Green Parts , B= Lead-Free for whole chip
- 6 Packaging : E = Embossed plastic tape, 7" reel
- 7 INPAQ internal code

■ Part Number and Characteristics Table

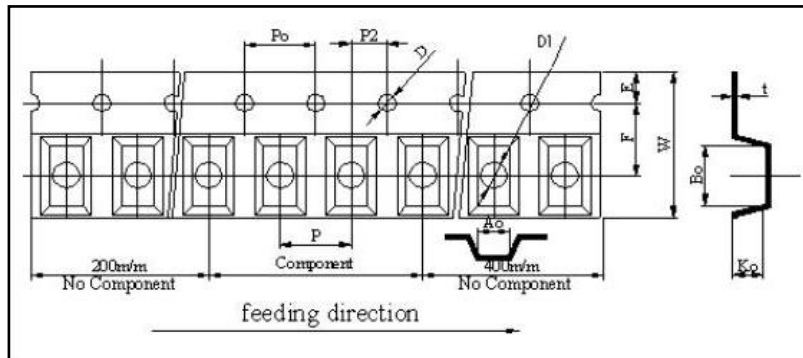
Part Number.	Inductance $\pm 20\%$ (μ H)	Test Freq. (MHz)	SRF (MHz)	DCR $\pm 25\%$ (Ω)	Rated Current (mA)
MIP20122R2MBEDG	2.20	1	70	0.170	900
Test Instruments and Conditions	<ul style="list-style-type: none"> •HP4291B-RF Impedance / Material Analyzer •HP4338A/B Milliohm meter Test Frequency : 1 MHz / OSC Level : 100mV				

*1 : For special part number which is not shown in the above table, please refer to appendix.

*2 : Apply DC 0.4 ~ 0.6A to chip for 1 ~ 3 sec. before to measure inductance.

■ Tape and Reel Specifications

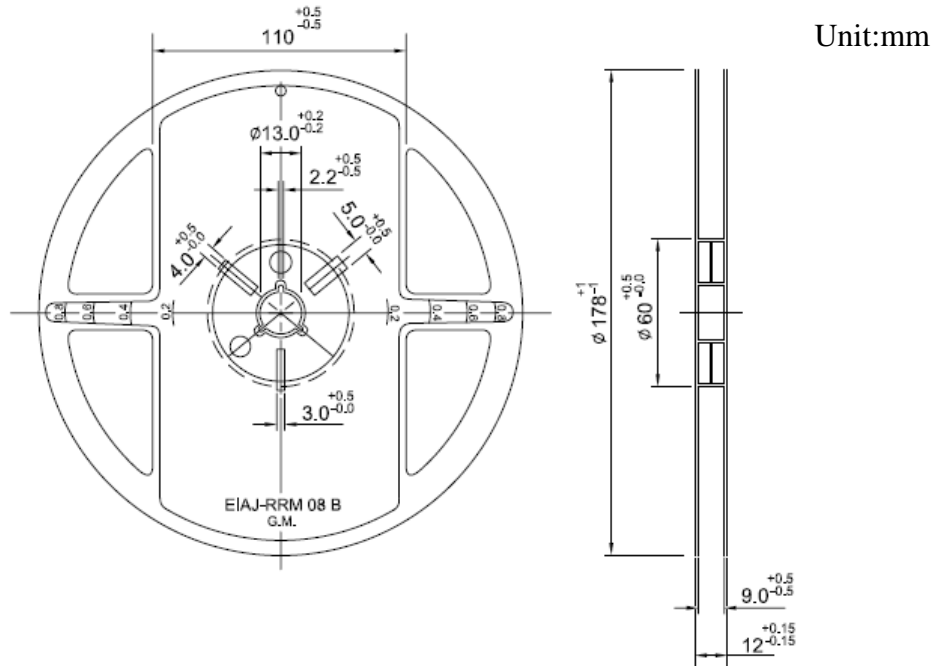
Plastic Carrier (E)



Taping Dimensions

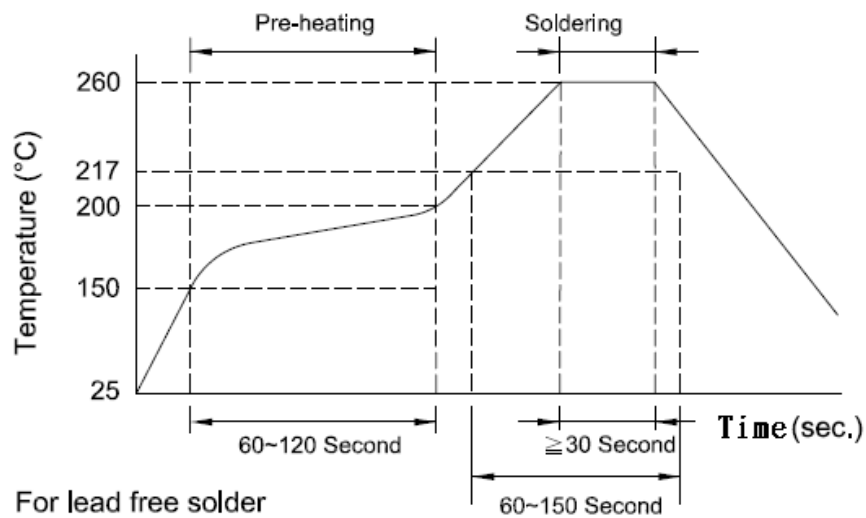
(mm)	2012
Symbol	E
W	8.00 ± 0.10
P	4.00 ± 0.10
E	1.75 ± 0.10
F	3.50 ± 0.10
D	1.55 ± 0.05
D1	1.00 ± 0.05
Po	4.00 ± 0.10
10Po	40.0 ± 0.20
P2	2.00 ± 0.10
Ao	1.40 ± 0.10
Bo	2.30 ± 0.10
Ko(T)	1.13 ± 0.10
t	0.22 ± 0.05

■ Reel Dimensions



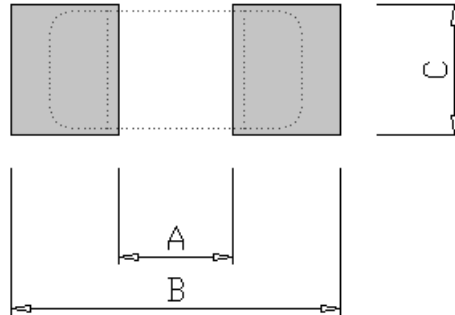
7" Reel Packaging Quantity	
PART SIZE (EIA SIZE)	2012 (0805)
Qty.(pcs)	3,000
BOX	5 reels / inner box

■ Recommended Soldering Conditions



■ Land Patterns for Reflow Soldering

Solder land information :



Size(mm)	A	B	C
2012	1.0 ~ 1.2	3.0 ~ 4.0	0.8 ~ 1.1

■ Reliability and Test Condition

Test item	Test condition	Criteria
Resistance to Solder Heat	1. Solder temperature : $260 \pm 5^{\circ}\text{C}$ 2. Flux : Rosin 3. DIP time : 10 ± 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage 3. Inductance value should be within ± 20 % of the initial value * Apply DC 0.4 ~ 0.6A to chip for 1 ~ 3 sec. before to measure inductance.
Solderability	1. Solder temperature : $235 \pm 5^{\circ}\text{C}$ 2. Flux : Rosin 3. DIP time : 5 ± 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage

Test item	Test condition	Criteria
Adhesive Test	1. Reflow temperature : 245°C It shall be Soldered on the substrate applying direction parallel to the substrate 2. Apply force(F) : 5 N 3. Test time : 10 sec	1. No mechanical damage 2. Soldering the products on PCB after the pulling test force > 5 N
Temperature Cycle	1. Temperature:-40 ~ 85°C For 30 minutes each 2. Cycle: 100 cycles 3. Measurement:At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within $\pm 20\%$ of the initial value * Apply DC 0.4 ~ 0.6A to chip for 1 ~ 3 sec. before to measure inductance.
High Temperature Resistance	1. Temperature: 85 \pm 5°C 2. Testing time: 1000 hrs 3. Measurement: at ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within $\pm 20\%$ of the initial value * Apply DC 0.4 ~ 0.6A to chip for 1 ~ 3 sec. before to measure inductance.
Humidity	1. Temperature: 40°C \pm 2°C 2. Humidity: 90-95 % RH 3. Testing time: 1000 hrs 4. Measurement:At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within $\pm 20\%$ of the initial value * Apply DC 0.4 ~ 0.6A to chip for 1 ~ 3 sec. before to measure inductance.
Rated Current	At ambient temperature & humidity Testing time:5 minutes (under full rated current)	MIP product surface temp : below room temperature plus 40°C

■ **General Technical Data**

Operating temperature range : - 40°C ~ +85°C

Storage Condition : Less than 40°C and 70% RH

Storage Time : 12 months Max.

Soldering method : Reflow