佳邦科技股份有限公司
INPAQ TECHNOLOGY CO., LTD.

MIP W Series
Data Sheet

Product Name	MIP W Series
Series	SMD Power Inductor
Size	EIAJ 2012 - 2520
Version	A7

Multilayer Ferrite Power Inductor (MIP W Series)

This product belongs to the 3C and industrial grade standard, not for automotive application. If customer privately uses to automotive parts and results in any consequences, INPAQ is not responsible for after-sales service, thank you!

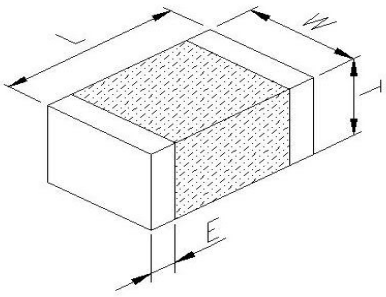
■ Features

- 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 (EIA 0805)	2520 (EIA 1008)
L	2.00±0.20	2.50±0.20
W	1.25±0.20	2.00±0.20
T	0.90±0.10	0.90±0.10
E	0.50±0.30	0.50±0.30
Unit	mm	mm

■ Part Number Code

MIP	2012	W	2R2	M	B	E
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 Material Code

4 Inductance : R = Decimal point，Unit = μH

5 Tolerance : M = ±20%

6 Soldering : Green Parts，B= Lead-Free for whole chip

7 Packaging : E = Embossed plastic tape, 7" reel

■ Part Number and Characteristics Table

Part Number.	Inductance±20% (μH)	Test Freq. (MHz)	SRF (MHz) Min.	DCR±25% (Ω)	Rated Current (mA)
2012 Series					
MIP2012W 2R2MBE	2.2	1	85	0.34	700
MIP2012W 4R7MBE	4.7	1	50	0.46	500
MIP2012W 5R6MBE	5.6	1	30	0.46	500
2520 Series					
MIP2520W 1R0MBE	1.0	1	70	0.11	1400
MIP2520W 2R2MBE	2.2	1	50	0.16	1100
MIP2520W 3R3MBE	3.3	1	40	0.20	1000
MIP2520W 4R7MBE	4.7	1	30	0.22	900
Test Instruments and Conditions	• Agilent E4991A/B RF Impedance / Material Analyzer or Equivalent •HP4338A/B Milliohm meter Test Frequency : 1MHz / OSC Level : 100mV				

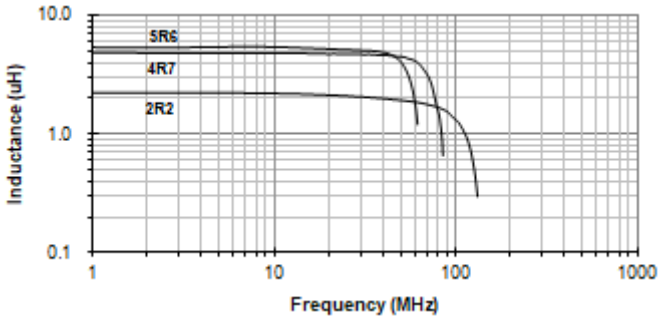
*1：For special part number which is not shown in the above table, please refer to appendix.

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

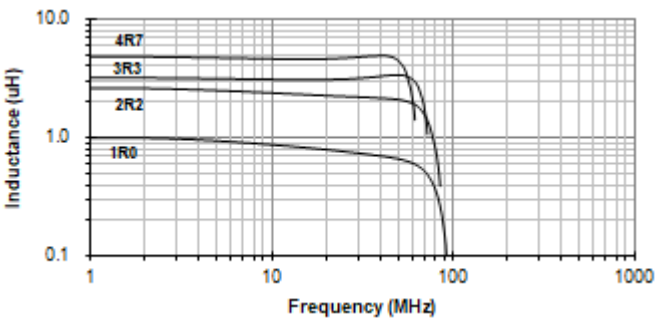
■ Typical Characteristic

Inductance @ Frequency

2012 Series

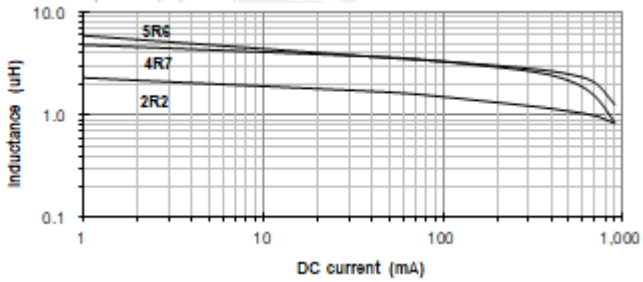


2520 Series

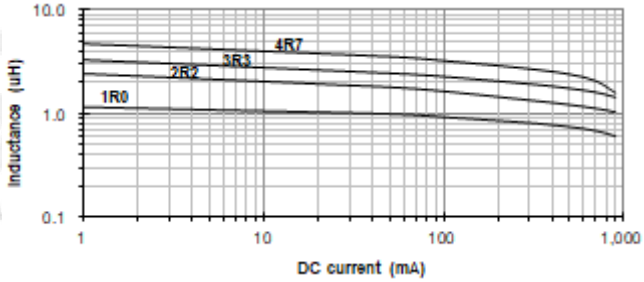


Inductance vs. DC-bias

2012 Series

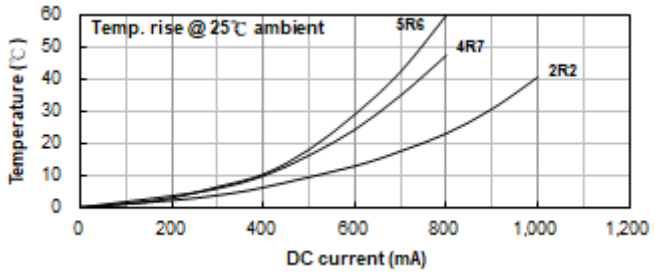


2520 Series

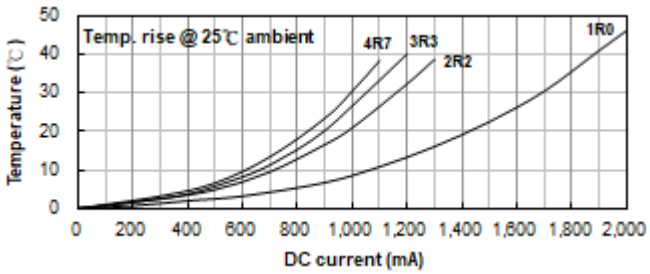


Temperature rise vs. DC-bias

2012 Series

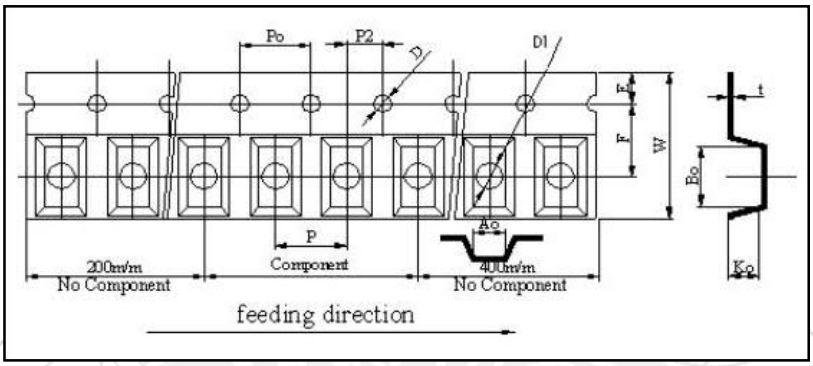


2520 Series



■ Tape and Reel Specifications

Plastic Carrier (E)

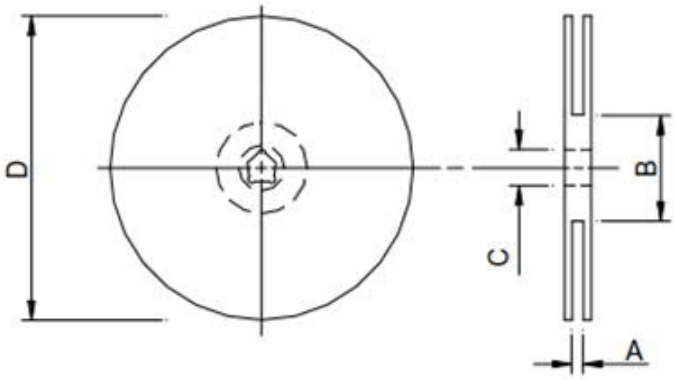


Taping Dimensions

Unit：mm

Type	2012	2520
Symbol	**E**	**E**
W	8.00 ± 0.10	8.00 ± 0.10
P	4.00 ± 0.10	4.00 ± 0.10
E	1.75 ± 0.10	1.75 ± 0.10
F	3.50 ± 0.10	3.50 ± 0.10
D	1.55 ± 0.05	1.55 ± 0.05
D1	1.00 ± 0.05	1.00 ± 0.05
Po	4.00 ± 0.10	4.00 ± 0.10
10Po	40.0 ± 0.20	40.0 ± 0.20
P2	2.00 ± 0.10	2.00 ± 0.10
Ao	1.40 ± 0.10	2.25 ± 0.10
Bo	2.30 ± 0.10	2.80 ± 0.10
Ko(T)	1.13 ± 0.10	1.35 ± 0.10
t	0.22 ± 0.05	0.22 ± 0.05

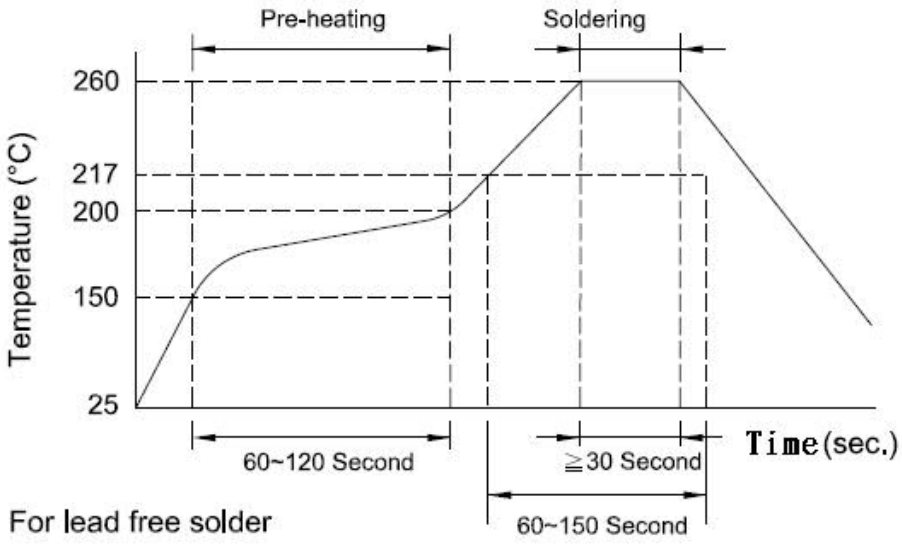
■ Reel Dimensions



Type	7"
A(mm)	10±1.5
B(mm)	50 or more
C(mm)	13.2±1.0
D(mm)	178±2.0

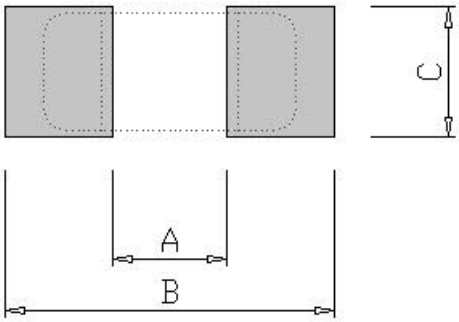
7" Reel Packaging Quantity		
PART SIZE (EIA SIZE)	**2012 (0805)**	**2520 (1008)**
Qty.(pcs)	3,000	3,000
BOX	5 reels / inner box	5 reels / inner box

■ 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
2520	1.2 ~ 1.5	3.5 ~ 4.0	1.5 ~ 2.0

■ Reliability and Test Condition

Test item	Test condition	Criteria
Resistance to Solder Heat	1. Solder temperature : 260 ± 5℃ 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 ± 5℃ 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℃ 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
Thermal Shock	1. Temperature:-40 ~ +85℃ 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 ±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 ± 5℃ 2. Testing time: 1000 hrs 3. Measurement: at ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance should be within ±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℃ ± 2℃ 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 ±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℃

■ General Technical Data

Operating temperature range : - 40℃ ~ +85℃

Storage Condition : Less than 40℃ and 70% RH

Storage Time : 12 months Max.

Soldering method : Reflow