

## APPLICATION

GMPI series is suitable for power line choke because of its excellent direct current characteristics

- PC/ Notebook
- PDA
- Digital camera
- DVD

## FEATURES

- The GMPI series is magnetically shielded chip based on multilayer process.
- New magnetic material is developed to get excellent direct current characteristics. This series has larger rated current than conventional GMLI series.
- Low DC resistance is realized.
- The cross talk characteristics are excellent because of the magnetically shielded structure.

## PRODUCT IDENTIFICATION

G M P I - 3 2 2 5 1 0 - 1 R 5 N T

①                                  ②                                  ③                  ④                  ⑤

① Product Code

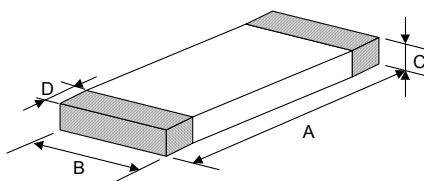
② Dimension Code

③ Inductance

④ Tolerance Code : N = ±30%, M = ±20%

⑤ Code for Special Specification

## PRODUCT DIMENSION



NOTE : Dimensions in mm

PRODUCT NO.	A	B	C	D
GMPI-322510	3.2±0.20	2.6±0.20	MAX 1.0	0.30~0.8

## ELECTRICAL REQUIREMENTS

Part Number	Inductance ( $\mu\text{H}$ )	Test Freq. (MHz)	$R_{\text{DC}}$ ( $\Omega$ ) Max.	Rated Current (mA) Max.
GMPI-322510-1R0MF1	1.0 $\pm$ 20%	5	0.09	1400
GMPI-322510-1R5MF1	1.5 $\pm$ 20%	5	0.09	1400
GMPI-322510-2R2MF1	2.2 $\pm$ 20%	5	0.13	1100
GMPI-322510-2R7MF1	2.7 $\pm$ 20%	5	0.12	1000
GMPI-322510-3R3MF1	3.3 $\pm$ 20%	5	0.11	1200
GMPI-322510-3R9MF1	3.9 $\pm$ 20%	5	0.14	1000
GMPI-322510-4R7MF1	4.7 $\pm$ 20%	5	0.13	1100
GMPI-322510-6R8MF1	6.8 $\pm$ 20%	5	0.16	1000
GMPI-322510-100MF1	10 $\pm$ 20%	5	0.21	900

- Temperature rise should be less than 40°C

## MEASURING METHOD / CONDITION

- Test Instrument:

L/SRF: Agilent 4291B Impedance Analyzer, Test Fixture: Agilent 16192  
Osc. Level: 100mV

$R_{\text{DC}}$ : Agilent 34401A

- Test Condition:

< Unless otherwise specified >

Temperature: 15°C to 35°C      Humidity: 25% to 85% RH

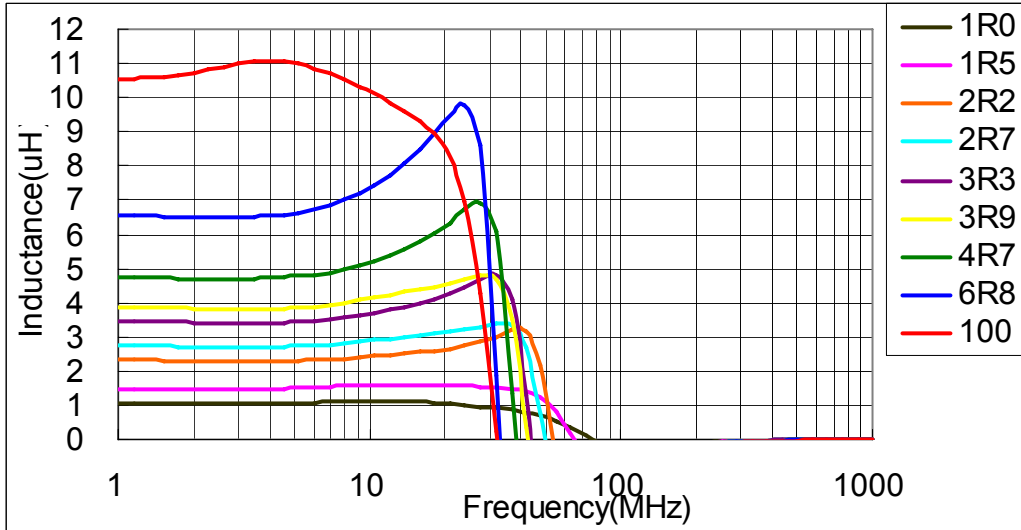
< In case of doubt >

Temperature: 25°C  $\pm$  2°C      Humidity: 60% to 70% RH

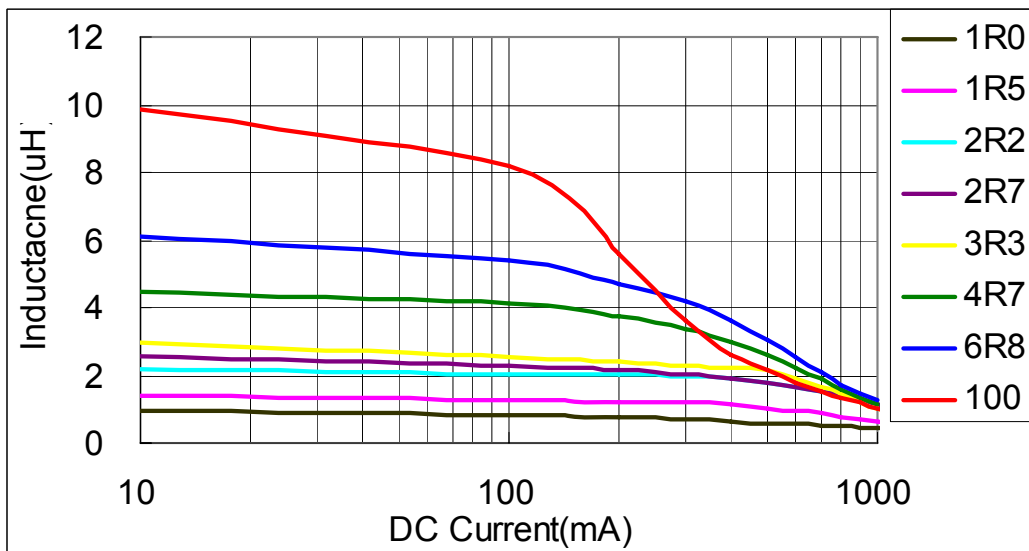


**MAG.LAYERS**

## TYPICAL ELECTRICAL CHARACTERISTICS (T=25°C)



## TYPICAL DC BIAS CHARACTERISTICS



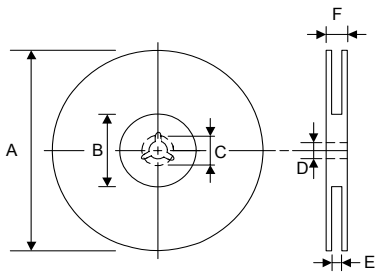
## PACKAGING

### ● Peel-off Force

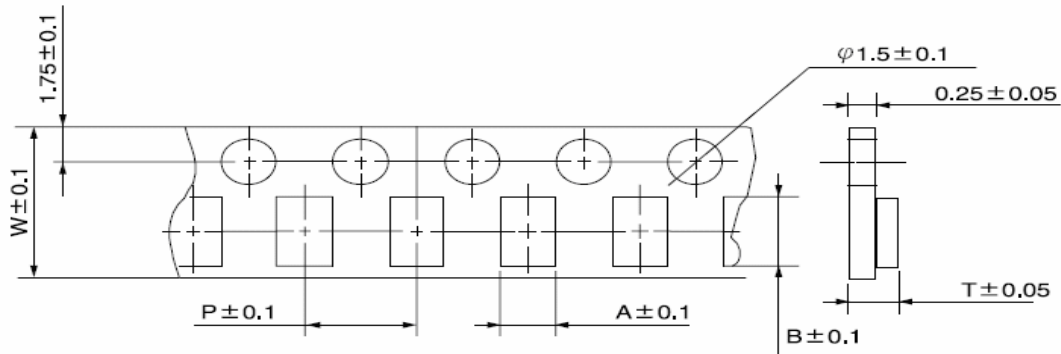


The force for peeling off cover tape is 10 grams in the arrow direction.

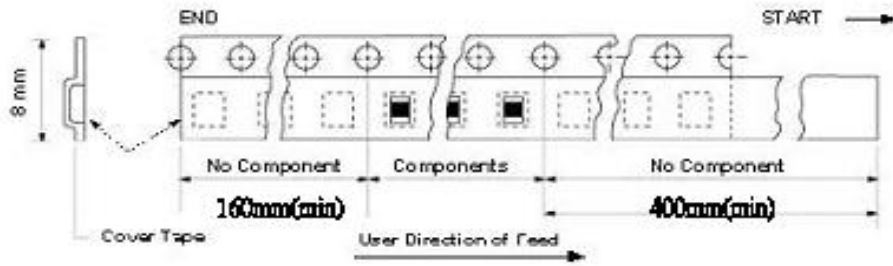
### ● Dimension (Unit: mm)



TYPE	A	B	C	D	E	F
8 mm	178±1	60 +0.5 -0	-	13 ±0.2	9 ±0.5	12 ±0.5
12 mm	178±0.3	60 ±0.2	19.3 ±0.1	13.5 ±0.1	13.6 ±0.1	-



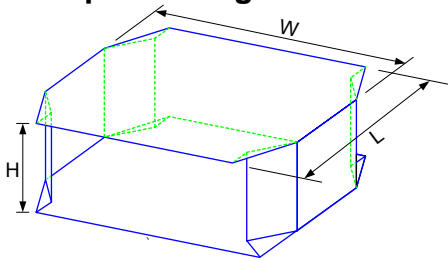
TYPE	SIZE	A	B	W	P	T	CHIPS/REEL
GMPI	322510	2.70	3.35	8	4	1.00	3000



● Taping Quantity

SERIES	PCS/Reel
322510	3000

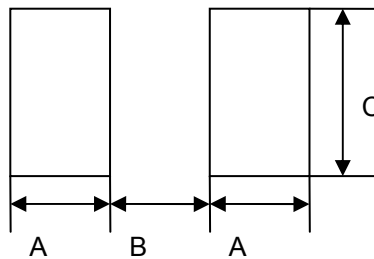
● Tape Packing Case



No. of Reels	W	L	H
2	18±0.5	18±0.5	2.4±0.2
3	18±0.5	18±0.5	3.6±0.2
4	18±0.5	18±0.5	4.8±0.2
5	18±0.5	18±0.5	6.0±0.2

Unit: cm

■ RECOMMENDED LAND PATTERNS



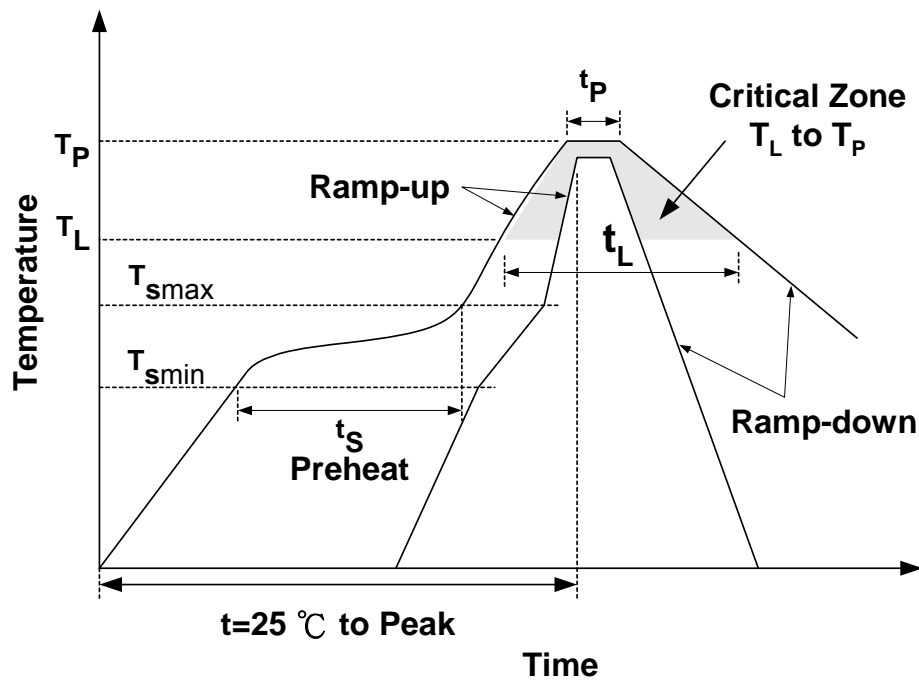
Unit: mm

Type	3225
A	1.0
B	1.6
C	2.7

## RELIABILITY TEST

•MECHANICAL PERFORMANCE TEST		
ITEM	SPECIFICATION	TEST CONDITION
Solderability	More than 90% of the terminal electrode shall be covered with fresh solder.	Solder: Sn-3.0Ag-0.5Cu Solder Temperature: 245 ± 5°C Flux: Rosin Dip Time: 3 ± 1 Seconds
Soldering Heat Resistance	The chip shall not crack. More than 75% of the terminal electrode shall be covered with solder.	Solder temperature : 260 ± 5°C Flux: Rosin Dip time: 10 ± 1 seconds
• CLIMATIC TEST		
ITEM	SPECIFICATION	TEST CONDITION
Thermal Shock (Temperature Cycle)	No mechanical damage. Inductance shall be within ± 5% of the initial value, and Q (shall be) within ± 30% of the initial value.	Temperature: -40°C,85°C for 30 minutes each, 100 cycles.
Humidity Resistance		Temperature : 40°C Humidity: 95% RH Time: 1000 ± 12 HOURS
High Temperature Resistance		Temperature: 85°C±2°C Time: 1000 ± 12 hours
Low Temperature Resistance		Temperature : -40°C±2°C Time: 1000 ± 12 hours
1. Operating Temperature Range: -55 °C TO +125°C 2. Storage Condition: The temperature should be within -40°C~85°C and humidity should be less than 75% RH. The product should be used within 6 months from the time of delivery.		

## RECOMMENDED REFLOW SOLDERING PROFILE



Profile Feature		Sn-Pb	Pb-Free
Preheat	$t_s$	60~120 seconds	60~180 seconds
	$T_{smin}$	100°C	150°C
	$T_{smax}$	150°C	200°C
Average ramp-up rate ( $T_{smax}$ to $T_P$ )		3°C/second max.	3°C/second max.
Time main above	Temperature ( $T_L$ )	183°C	217°C
	Time ( $t_L$ )	60~150 seconds	60~150 seconds
Peak temperature ( $T_P$ )		230°C	250~260°C
Time within 5°C of actual peak temperature ( $t_p$ )		10 seconds	10 seconds
Ramp-down rate		6°C/sec max.	6°C/sec max.
Time 25°C to peak temperature		6 minutes max.	8 minutes max.

## NOTES

The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.