



## Data Sheet

Customer :

Product : SMD Mini Power Inductor – MPI Series

Size : 0610/0612/0620

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RoHS Compliant

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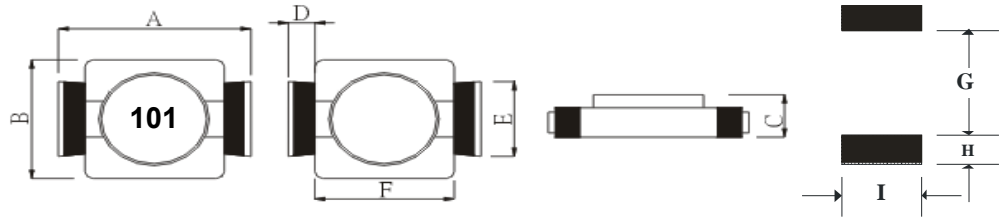
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## SMD Mini Power Inductor – MPI Series



### ■ Dimensions

Unit: mm

Type	A max.	B	C max.	D	E	F	G	H	I
MPI0610	6.5	5.3±0.3	1.2	0.9	3.0	4.5	4.0	1.5	3.4
MPI0612	6.5	5.3±0.3	1.2	0.9	3.0	4.5	4.0	1.5	3.4
MPI0620	6.5	5.3±0.3	2.0	0.9	3.0	4.5	4.0	1.5	3.4

### ■ Features

- Very low profile.
- Constructed enclosed in a rugged to provide optimum pick and place operations.
- High inductance & high current ultra low profile power inductors.

### ■ Applications

- LCD Televisions
- Personal Computers
- Handheld Communication
- DC/DC Converters, etc.

### ■ Inductance and rated current ranges

- MPI0610 1.2~330μH 2.1~0.13A
- MPI0612 1.2~100μH 1.8~0.235A
- MPI0620 1.0~1000μH 2.5~0.08A
- Test equipment:  
L: HP4192A LCR meter Zentech301A  
DCR: Milli-ohm meter
- Electrical specifications at 25°C

### ■ Characteristics

- Rated Current (IDC): The DC current when the inductance becomes 10% lower than its initial value. (Ta=25°C)
- Operating temperature range: -40~+100°C

### ■ Product Identification

MPI	0610	M	T	101
Product Type	Dimensions (AxBxC)	Inductor Tolerance	Packaging Style	Inductance
	0610: 6.5×5.3×1.2 0612: 6.5×5.3×1.2 0620: 6.5×5.3×2.0	M: ±20%	T: Tape and Reel	1R1: 1.1μH 470: 47μH 101: 100μH

## Electrical Characteristics

### MPI0610 Type

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	I DC (A) max.
1R2	1.2	M	100KHz, 0.1V	0.08	2.1
1R5	1.5	M	100KHz, 0.1V	0.10	1.9
2R2	2.2	M	100KHz, 0.1V	0.12	1.6
3R3	3.3	M	100KHz, 0.1V	0.16	1.3
4R7	4.7	M	100KHz, 0.1V	0.20	1.1
6R8	6.8	M	100KHz, 0.1V	0.32	0.9
100	10	M	100KHz, 0.1V	0.41	0.8
150	15	M	100KHz, 0.1V	0.65	0.65
220	22	M	100KHz, 0.1V	0.85	0.50
330	33	M	100KHz, 0.1V	1.30	0.40
470	47	M	100KHz, 0.1V	1.80	0.35
680	68	M	100KHz, 0.1V	2.50	0.30
101	100	M	100KHz, 0.1V	3.50	0.25
151	150	M	100KHz, 0.1V	6.50	0.18
221	220	M	100KHz, 0.1V	8.50	0.16
331	330	M	100KHz, 0.1V	15.0	0.13

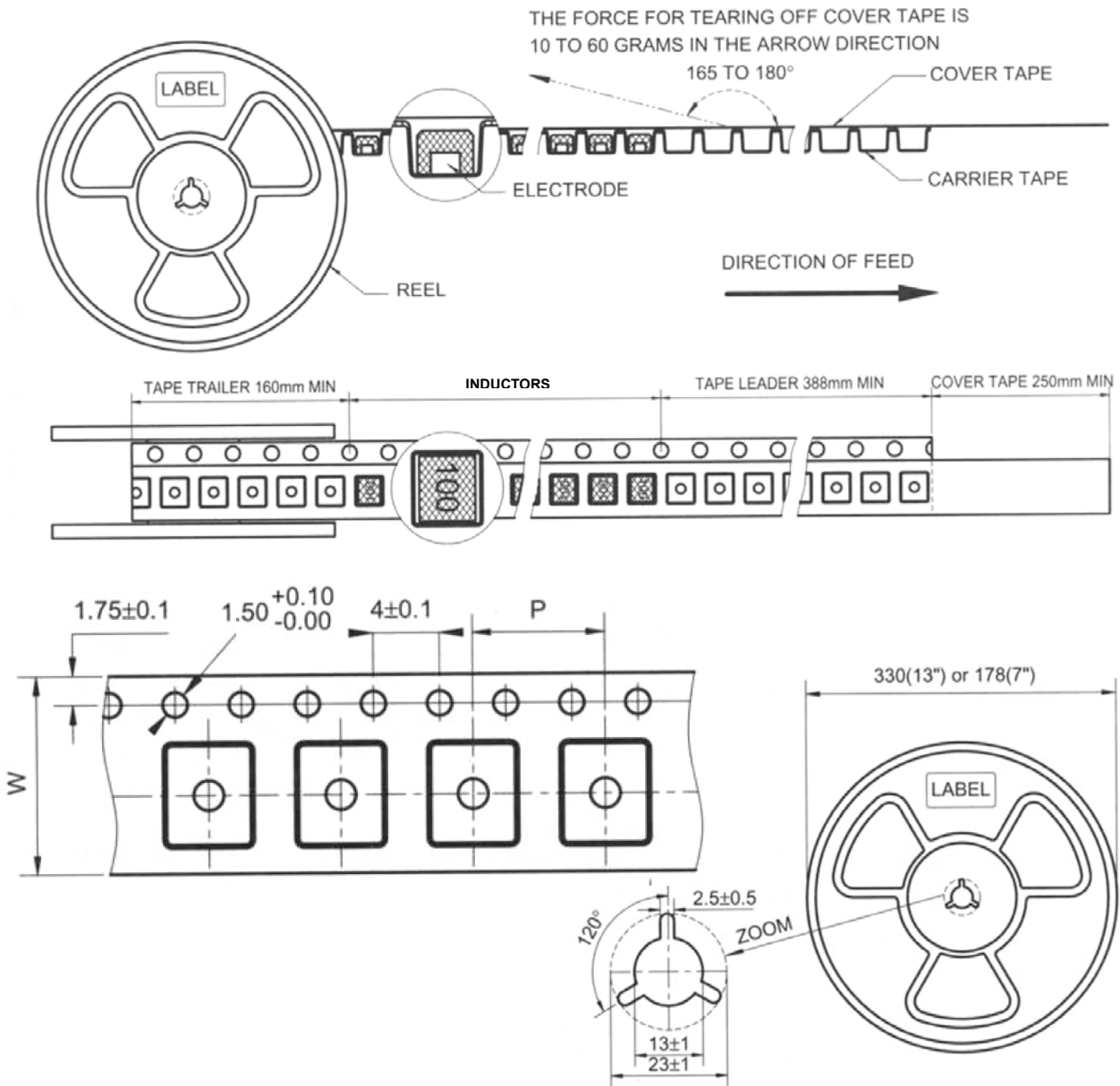
### MPI0612 Type

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	I DC (A) max.
1R2	1.2	M	100KHz, 0.1V	0.060	1.80
2R2	2.2	M	100KHz, 0.1V	0.125	1.20
3R3	3.3	M	100KHz, 0.1V	0.155	0.96
4R7	4.7	M	100KHz, 0.1V	0.206	0.90
6R8	6.8	M	100KHz, 0.1V	0.240	0.80
100	10	M	100KHz, 0.1V	0.370	0.70
150	15	M	100KHz, 0.1V	0.460	0.60
180	18	M	100KHz, 0.1V	0.580	0.56
220	22	M	100KHz, 0.1V	0.668	0.50
270	27	M	100KHz, 0.1V	0.950	0.45
330	33	M	100KHz, 0.1V	1.100	0.42
390	39	M	100KHz, 0.1V	1.280	0.38
470	47	M	100KHz, 0.1V	1.380	0.34
560	56	M	100KHz, 0.1V	1.700	0.30
680	68	M	100KHz, 0.1V	2.100	0.28
820	82	M	100KHz, 0.1V	2.700	0.26
101	100	M	100KHz, 0.1V	3.100	0.235

### MPI0620 Type

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	I DC (A) max.
1R0	1.0	M	100KHz, 0.1V	0.04	2.5
1R5	1.5	M	100KHz, 0.1V	0.06	2.2
2R2	2.2	M	100KHz, 0.1V	0.07	1.8
3R3	3.3	M	100KHz, 0.1V	0.10	1.4
4R7	4.7	M	100KHz, 0.1V	0.12	1.2
6R8	6.8	M	100KHz, 0.1V	0.19	1.1
100	10	M	100KHz, 0.1V	0.30	1.0
150	15	M	100KHz, 0.1V	0.40	0.8
220	22	M	100KHz, 0.1V	0.54	0.6
330	33	M	100KHz, 0.1V	0.74	0.5
470	47	M	100KHz, 0.1V	1.10	0.45
680	68	M	100KHz, 0.1V	1.60	0.35
101	100	M	100KHz, 0.1V	2.30	0.30
151	150	M	100KHz, 0.1V	3.20	0.25
221	220	M	100KHz, 0.1V	5.70	0.20
331	330	M	100KHz, 0.1V	8.20	0.16
471	470	M	100KHz, 0.1V	10.8	0.14
681	680	M	100KHz, 0.1V	17.2	0.12
102	1000	M	100KHz, 0.1V	22.6	0.08

■ Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13"
MPI0610	16	8	2000
MPI0612	16	8	2000
MPI0620	16	8	2000

## ■ SMT Power Inductor Environmental Specifications

### General

Items	Specifications
Shelf Storage conditions	Temperature range: $25\pm 3^{\circ}\text{C}$ ; Humidity: <80% relative humidity. Recommended product should be used within six months from the time of delivery.
Storage temperature range	Temperature range: $-20^{\circ}\text{C}$ to $+80^{\circ}\text{C}$ .

### Environmental test

Test Items	Specifications	Test Conditions / Test Methods
High temperature Storage test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Temperature $85\pm 2^{\circ}\text{C}$ , Time: $48\pm 2$ hours, Tested after 1hour at room temperature.
Low temperature Storage test		Temperature $-25\pm 2^{\circ}\text{C}$ , Time: $48\pm 2$ hours, Tested after 1hour at room temperature.
Humidity test		Temperature $40\pm 2^{\circ}\text{C}$ , 90~95% relative humidity Time: $96\pm 2$ hours, apply rated current, Tested after 1hour at room temperature.
Thermal shock test		First $-25^{\circ}\text{C}$ 30minutes then $25^{\circ}\text{C}$ 10 minutes last $85^{\circ}\text{C}$ 30 minutes, as 1 cycle. Go through 5 cycles. Tested after 1 hour at room temperature.

### Mechanical test

Test Items	Specifications	Test Conditions / Test Methods
Solderability test	Terminal area must have 90% minimum solder coverage.	Product with Lead-free terminal: Dip pads in flux then dip in solder pot at $245\pm 5^{\circ}\text{C}$ for 3 seconds.
Heat endurance of Reflow soldering	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Refer to the reflow soldering condition. Go through 3 times.
Vibration test		Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance		Drop down with $981\text{m/s}^2$ (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.

### The condition of reflow (recommendation):

