

MPE

SMD MINI POWER INDUCTOR



Applications

- LCD televisions.
- Camcorder.
- MP3-Player
- G.P.S , PDA
- Digital Camera
- DC/DC converters, etc.

Features

- Very low profile.
- Maximum current rating of 1.4 Amps.
- Density design, small size, and low cost.

Inductance and rated current ranges

- MPE0312 1.0~68 μ H 1.40~0.17A

- Test equipment:

L: HP4284A LCR meter

Test Frequency : 100KHz 0.1V

DCR tested by Milli-ohm meter .

Electrical specifications at 25 $^{\circ}$ C.

Product Identification

MPE 0312 M T 100

(1) (2) (3) (4) (5)

(1)Type: SMD Mini Power Inductors

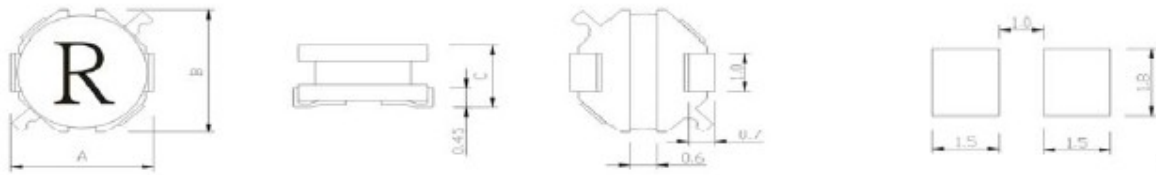
(2)Dimensions(mm):0312=3.2 \times 3.2 \times 1.2

(3)Tolerance: N=30%, M=20%

(4)Packaging style: T (Tape and Reel)

(5)Inductance:1R1=1.1 μ H, 470=47 μ H, 101 =100 μ H

Dimension



Unit: mm

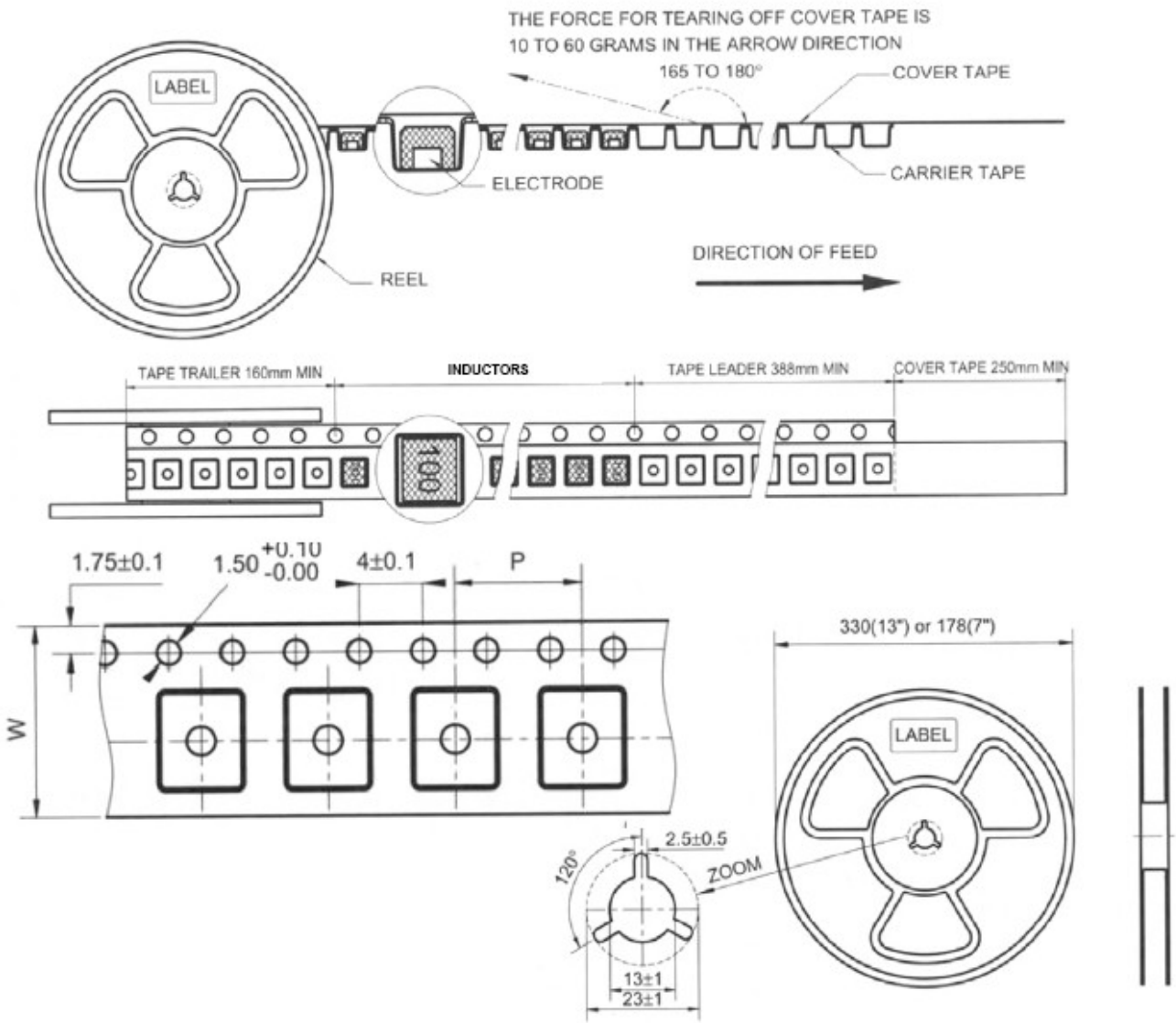
Codes	A	B	C (max)
MPE0312	3.2±0.3	3.2±0.3	1.2

Electrical Characteristics

Part No.	L (μ H)	Tol. (%)	DCR max (Ω)	IDC (A)	Marking
MPE0312NT1R0	1.0	30	0.08	1.40	A
MPE0312NT1R8	1.8	30	0.11	1.10	C
MPE0312NT2R2	2.2	30	0.12	1.00	D
MPE0312NT2R7	2.7	30	0.15	0.95	E
MPE0312NT4R7	4.7	30	0.28	0.75	H
MPE0312NT5R6	5.6	30	0.31	0.68	I
MPE0312NT6R8	6.8	30	0.36	0.62	K
MPE0312NT7R5	7.5	30	0.39	0.60	L
MPE0312MT100	10	20	0.43	0.53	M
MPE0312MT150	15	20	0.72	0.44	O
MPE0312MT220	22	20	1.18	0.33	R
MPE0312MT330	33	20	1.90	0.26	T
MPE0312MT470	47	20	2.45	0.23	V
MPE0312MT680	68	20	4.20	0.17	X

1. Test Frequency 100KHz 0.1Vrms.
2. Rated Current: The DC current when the inductance becomes 70% lower than its initial value. ($T_a=25^\circ\text{C}$).
3. Operating temperature range $-30 \sim +100^\circ\text{C}$
4. Electrical characteristics at 25°C .

Tape and Reel specifications



Unit: mm

Series	Tape size		Parts Per Reel
	W	P	7"
MPE0312	12	8	1500

General

Items	Specifications
1. Shelf Storage conditions	Temperature range: 25±3°C; Humidity: <80% relative humidity. Recommended product should be used within six months from the time of delivery.
2. Storage temperature range	Temperature range: -40°C to +85°C.
3. Operating temperature range	Temperature range: -30°C to +100°C.

Environmental test

Test Items	Specifications	Test Conditions / Test Methods
1. High temperature Storage test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Temperature 85±2°C, Time: 48±2 hours, Tested after 1hour at room temperature.
2. Low temperature Storage test		Temperature -25±2°C, Time: 48±2 hours, Tested after 1hour at room temperature.
3. Humidity test		Temperature 40±2°C, 90~95% relative humidity Time: 96±2 hours, apply rated current, Tested after 1hour at room temperature.
4. Thermal shock test		First -25°C 30minutes then 25°C 10 minutes last 85°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
1. 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±5°C for 5 seconds.
2. 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.
3. Vibration test		Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
4. Shock resistance		Drop down with 981m/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):

Lead-free

