

MPI

SMD MINI POWER INDUCTOR



Applications

- LCD televisions.
- Personal computers.
- Handhold communication.
- DC/DC converters, etc.

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.

Inductance and rated current ranges

- MPI0610 1.2~330 μ H 2.1~0.13A
- MPI0612 1.2~100 μ H 1.8~0.23A
- MPI0620 1.0~1000 μ H 2.5~0.08A
- MPI0915 4.7~1000 μ H 1.6~0.10A

- Test equipment:

L: HP4192A , Zentech301A

DCR tested by Milli-ohm meter.

Test frequency 100 KHz , 0.1Vrms.

- Electrical specifications at 25°C.

Product Identification

MPI 0610 M T 101
 (1) (2) (3) (4) (5)

(1)Type: SMD Mini Power Inductors

(2)Dimensions(mm): 0610=6.5×5.3×1.0 0612=6.5×5.3×1.2
 0620=6.5×5.3×2.0 0915=10×9.0×5.4

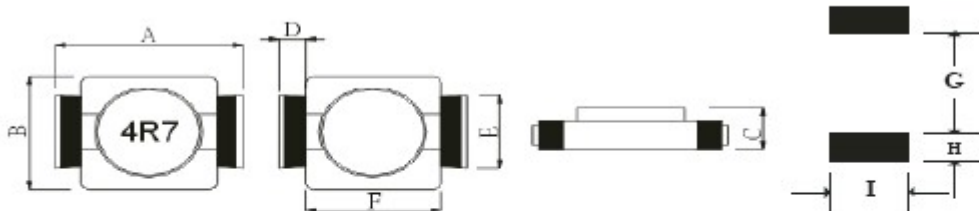
(3)Tolerance: M=20%

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

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

Dimension

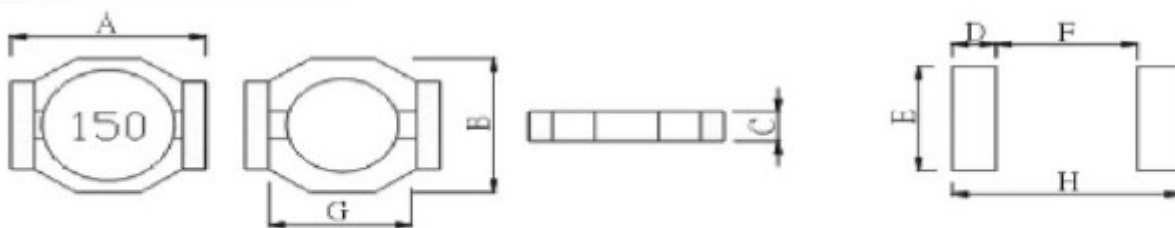
- MPI 0610/0612/0620



Unit: mm

Codes	A (max)	B	C (max)	D	E	F	G	H	I
MPI0610	6.5	5.3±0.3	1.0	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

- MPI 0915



Unit: mm

Codes	A (max)	B (max)	C (max)	D	E	F	G (max)	H
MPI0915	9.30	7.87	1.55	1.21	5.84	7.24	7.24	9.65

Electrical Characteristics

● 0610 TYPE

Part No.	L (μ H)	DCR max (Ω)	I DC (A)
MPI0610MT1R2	1.2	0.08	2.1
MPI0610MT1R5	1.5	0.10	1.9
MPI0610MT2R2	2.2	0.12	1.6
MPI0610MT3R3	3.3	0.16	1.3
MPI0610MT4R7	4.7	0.20	1.1
MPI0610MT6R8	6.8	0.32	0.9
MPI0610MT100	10	0.41	0.8
MPI0610MT150	15	0.65	0.65
MPI0610MT220	22	0.85	0.50
MPI0610MT330	33	1.30	0.40
MPI0610MT470	47	1.80	0.35
MPI0610MT680	68	2.50	0.30
MPI0610MT101	100	3.50	0.25
MPI0610MT151	150	6.50	0.18
MPI0610MT221	220	8.50	0.16
MPI0610MT331	330	15.0	0.13

● 0612 TYPE

Part No.	L (μ H)	DCR max (Ω)	I DC (A)
MPI0612MT1R2	1.2	0.060	1.80
MPI0612MT2R2	2.2	0.125	1.20
MPI0612MT3R3	3.3	0.155	0.96
MPI0612MT4R7	4.7	0.206	0.90
MPI0612MT6R8	6.8	0.240	0.80
MPI0612MT100	10	0.370	0.70
MPI0612MT150	15	0.460	0.60
MPI0612MT180	18	0.580	0.56
MPI0612MT220	22	0.668	0.50
MPI0612MT270	27	0.950	0.45
MPI0612MT330	33	1.100	0.42
MPI0612MT390	39	1.280	0.38
MPI0612MT470	47	1.380	0.34
MPI0612MT560	56	1.700	0.30
MPI0612MT680	68	2.100	0.28
MPI0612MT820	82	2.700	0.26
MPI0612MT101	100	3.100	0.235

1. Rated Current (I sat): The DC current when the inductance becomes 90% lower than its initial value. (Ta=25°C).
2. Operating temperature range -30 ~ +100°C

Electrical Characteristics

● 0620 TYPE

Part No.	L (μH)	DCR max (Ω)	I DC (A)
MPI0620MT1R0	1.0	0.04	2.5
MPI0620MT1R5	1.5	0.06	2.2
MPI0620MT2R2	2.2	0.07	1.8
MPI0620MT3R3	3.3	0.10	1.4
MPI0620MT4R7	4.7	0.12	1.2
MPI0620MT6R8	6.8	0.19	1.1
MPI0620MT100	10	0.30	1.0
MPI0620MT150	15	0.40	0.8
MPI0620MT220	22	0.54	0.6
MPI0620MT330	33	0.74	0.5
MPI0620MT470	47	1.10	0.45
MPI0620MT680	68	1.60	0.35
MPI0620MT101	100	2.30	0.30
MPI0620MT151	150	3.20	0.25
MPI0620MT221	220	5.70	0.20
MPI0620MT331	330	8.20	0.16
MPI0620MT471	470	10.8	0.14
MPI0620MT681	680	17.2	0.12
MPI0620MT102	1000	22.6	0.08

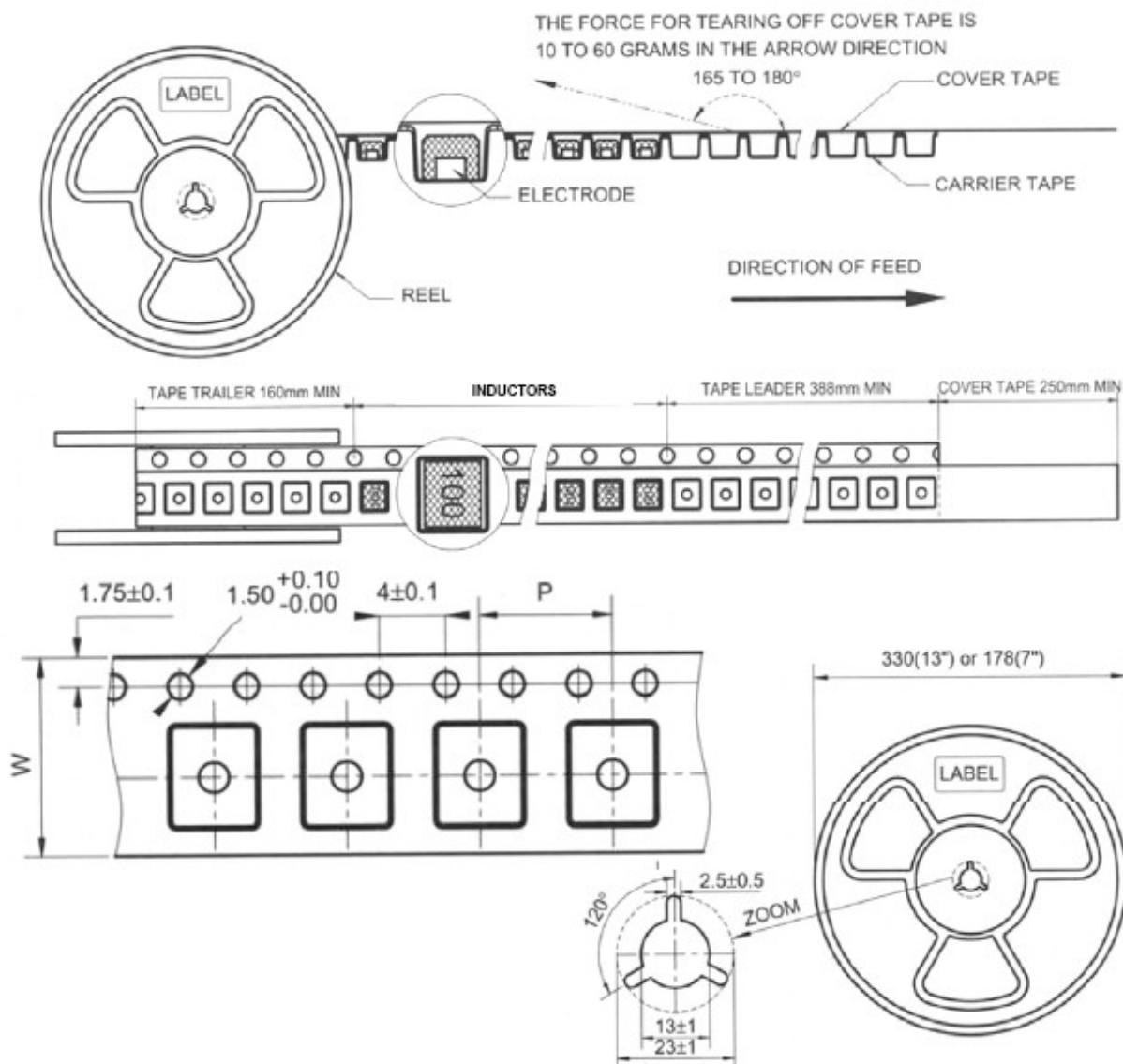
1. Rated Current (I sat): The DC current when the inductance becomes 90% lower than its initial value. (Ta=25°C).
2. Operating temperature range -30 ~ +100°C

● 0915 TYPE

Part No.	L (μH)	DCR max (Ω)	I sat (A)	I rms (A)
MPI0915MT4R7	4.7	0.145	1.60	1.90
MPI0915MT6R8	6.8	0.165	1.30	1.55
MPI0915MT100	10	0.240	1.00	1.30
MPI0915MT150	15	0.300	0.90	1.06
MPI0915MT220	22	0.420	0.70	0.88
MPI0915MT330	33	0.550	0.60	0.70
MPI0915MT470	47	0.765	0.50	0.60
MPI0915MT680	68	1.100	0.40	0.50
MPI0915MT101	100	1.600	0.30	0.41
MPI0915MT151	150	2.500	0.25	0.33
MPI0915MT221	220	3.650	0.22	0.28
MPI0915MT331	330	4.650	0.18	0.22
MPI0915MT471	470	6.750	0.14	0.19
MPI0915MT681	680	9.150	0.12	0.15
MPI0915MT102	1000	14.20	0.10	0.13

1. Rated Current (I sat): The DC current when the inductance becomes 90% lower than its initial value. (Ta=25°C).
2. Temperature Rise Current (I rms): The actual current when temperature of coil becomes $\Delta 40^\circ\text{C}$. (Ta=25°C)
3. Operating temperature range -30 ~ +100°C

Tape and Reel specifications



Series	Tape size		Parts Per Reel
	W	P	13"
MPI0610	16	8	2000
MPI0612	16	8	2000
MPI0620	12	8	2000
MPI0915	24	16	2000

SMT Power Inductor Environmental Specifications

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: -20°C to +80°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 $85 \pm 2^\circ\text{C}$, Time: 48 ± 2 hours, Tested after 1 hour at room temperature.
2.	Low temperature Storage test		Temperature $-25 \pm 2^\circ\text{C}$, Time: 48 ± 2 hours, Tested after 1 hour at room temperature.
3.	Humidity test		Temperature $40 \pm 2^\circ\text{C}$, 90~95% relative humidity Time: 96 ± 2 hours, apply rated current, Tested after 1 hour 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 $245 \pm 5^\circ\text{C}$ 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 $981\text{m/s}^2(100\text{G})$ 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

