

MPC

SMD MINI POWER INDUCTOR



Applications

- 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

- MPC0615 1.0~4700 μ H 2.91~0.037A
- MPC0620 1.0~2700 μ H 2.90~0.05

- Test equipment:

L: HP4284A

DCR tested by Milli-ohm meter.

Electrical specifications at 25°C.

Product Identification

MPC 0615 M T 101

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

(1)Type: SMD Mini Power Inductors

(2)Dimensions(mm):0615=6.6×5.5×1.5

0620=6.6×5.5×2.0

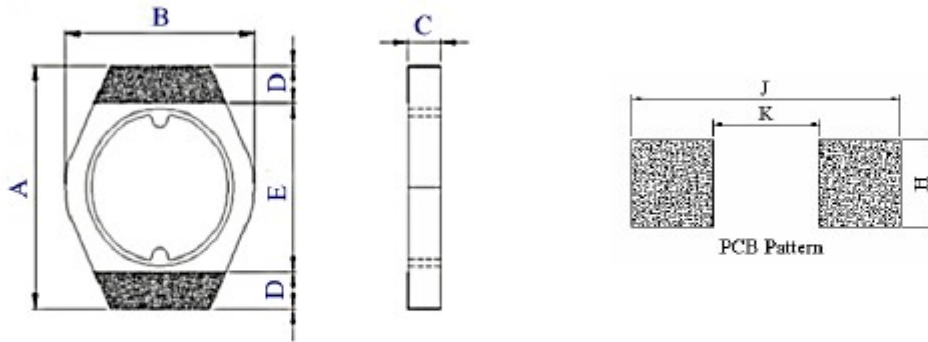
(3)Tolerance: M=20%

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

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

Dimension

- MPC 0615/0620



Unit: mm

Codes	A	B	C	D Ref	E Ref	H Typ	J Typ	K Typ
MPC0615	6.60±0.50	5.5±0.20	1.50±0.30	0.85	4.90	3.8	6.9	4.7
MPC0620	6.60±0.50	5.5±0.20	2.00±0.30	0.85	4.90	3.8	6.9	4.7



Electrical Characteristics

● 0615 TYPE

Part No.	Tol.	L (μ H)	DCR max (Ω)	I DC (A)
1R0	M	1.0	0.026	2.91
1R2	M	1.2	0.031	2.52
1R5	M	1.5	0.039	2.26
2R0	M	2.0	0.051	2.01
2R2	M	2.2	0.054	1.89
2R8	M	2.8	0.076	1.62
3R3	M	3.3	0.092	1.47
3R9	M	3.9	0.098	1.38
4R7	M	4.7	0.117	1.23
5R6	M	5.6	0.133	1.12
6R8	M	6.8	0.165	1.09
8R2	M	8.2	0.187	1.05
100	M	10	0.250	1.02
120	M	12	0.271	0.79
150	M	15	0.330	0.69
180	M	18	0.411	0.66
220	M	22	0.497	0.57
270	M	27	0.633	0.55
330	M	33	0.748	0.48
390	M	39	0.861	0.43
470	M	47	1.021	0.39
560	M	56	1.18	0.37
680	M	68	1.50	0.33
820	M	82	1.77	0.30
101	M	100	2.29	0.27
121	M	120	2.74	0.25
151	M	150	3.55	0.22
181	M	180	4.66	0.20
221	M	220	5.50	0.18
271	M	270	6.62	0.16
331	M	330	7.65	0.15
391	M	390	8.99	0.14
471	M	470	10.65	0.13
561	M	560	14.48	0.12
681	M	680	16.93	0.10
821	M	820	19.88	0.095
102	M	1000	25.63	0.084
122	M	1200	28.81	0.078
152	M	1500	35.76	0.072
182	M	1800	46.85	0.061
222	M	2200	71.23	0.055
272	M	2700	81.56	0.051
332	M	3300	97.71	0.046
472	M	4700	137.04	0.037

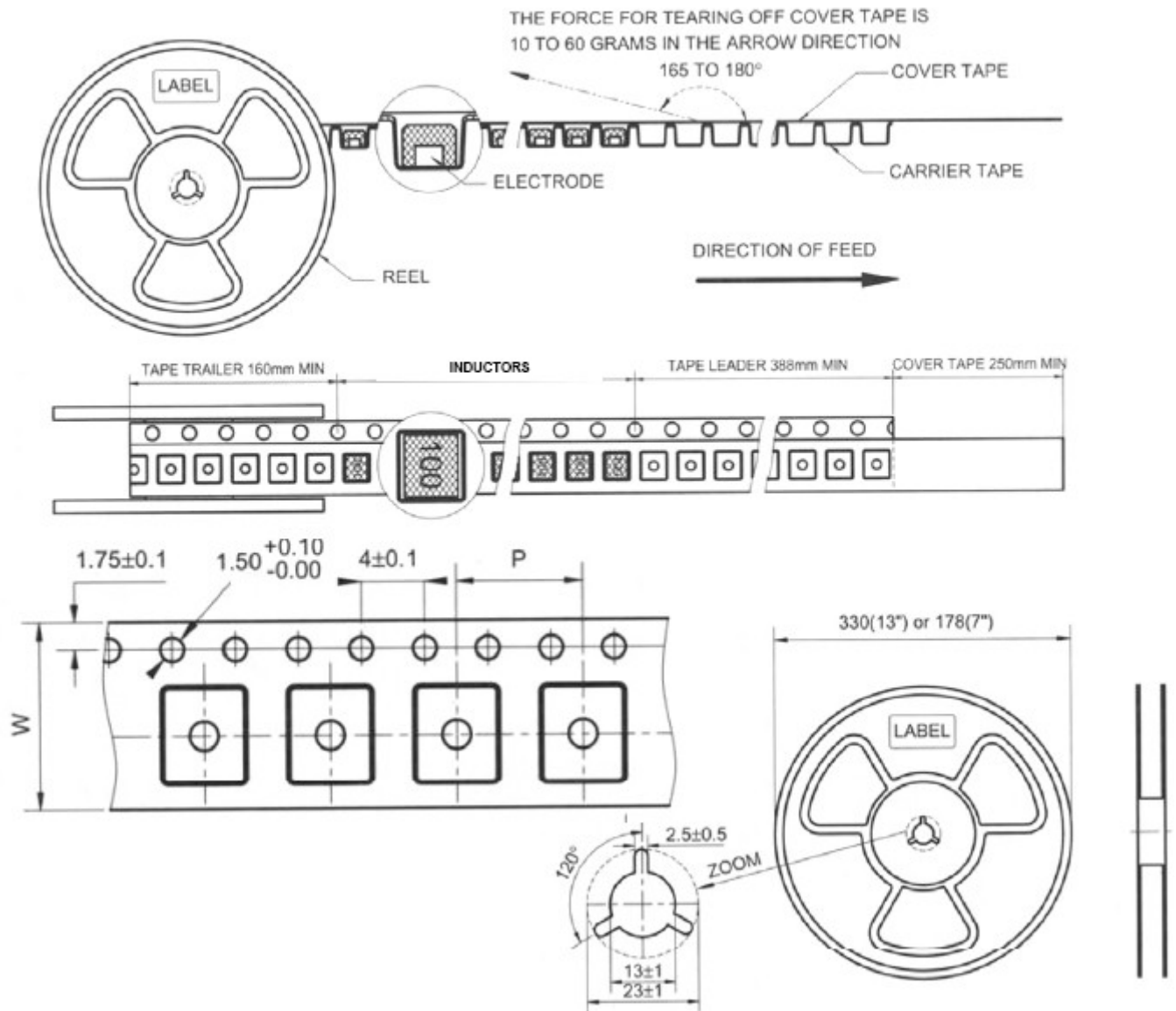


● 0620 TYPE

Part No.	Tol	L (μH)	DCR max (Ω)	I DC (A)
1R0	M	1.0	0.05	2.9
1R5	M	1.5	0.06	2.8
2R2	M	2.2	0.07	2.4
3R3	M	3.3	0.08	2.0
4R7	M	4.7	0.09	1.5
5R6	M	5.6	0.12	1.42
6R8	M	6.8	0.13	1.40
8R2	M	8.2	0.15	1.15
100	M	10	0.16	1.10
120	M	12	0.22	1.05
150	M	15	0.23	1.00
180	M	18	0.35	0.82
220	M	22	0.37	0.80
270	M	27	0.45	0.63
330	M	33	0.51	0.60
390	M	39	0.62	0.52
470	M	47	0.64	0.50
560	M	56	0.85	0.43
680	M	68	0.86	0.40
820	M	82	1.24	0.36
101	M	100	1.27	0.30
121	M	120	1.75	0.28
151	M	150	2.00	0.25
181	M	180	2.60	0.22
221	M	220	2.65	0.20
271	M	270	3.70	0.18
331	M	330	3.80	0.16
391	M	390	5.00	0.15
471	M	470	6.85	0.15
561	M	560	9.10	0.13
681	M	680	9.20	0.12
821	M	820	13.50	0.08
102	M	1000	13.80	0.07
122	M	1200	22.56	0.065
152	M	1500	26.47	0.06
182	M	1800	33.26	0.058
222	M	2200	38.00	0.055
272	M	2700	45.99	0.050

1. Rated Current (I sat): The DC current when the inductance becomes 90% lower than its initial value. ($T_a=25^\circ\text{C}$).
2. Operating temperature range $-40 \sim +105^\circ\text{C}$

Tape and Reel specifications



Series	Tape size		Parts Per Reel	
	W	P	13"	7"
MPC0615	16	8	2500	700
MPC0620	16	8	2500	700

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: -40°C to +85°C.
3. Operating temperature range	Temperature range: -40°C to +105°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 $105 \pm 2^\circ\text{C}$, Time: 48 ± 2 hours, Tested after 1 hour at room temperature.
2. Low temperature Storage test		Temperature $-40 \pm 2^\circ\text{C}$, 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.	Dip pads in flux then dip in solder pot (SnCuNi) 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 981m/s^2 (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.

