

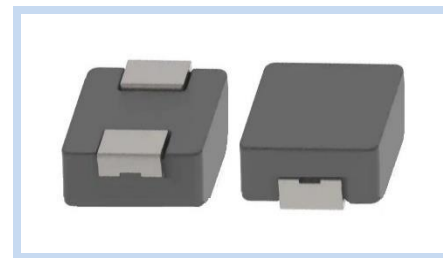
Molded Power Inductor High Current AEC-Q200

PIM-0502MA1 series

MERITEK

FEATURE

- High Current, Low DCR, High Efficiency
- Minimized Acoustic and Leakage Flux Noise
- Shielded and Compact Construction Design
- AEC-Q200 Compliant
- Application: Note PC Power System, incl. IMVP-6, DC/DC Converter



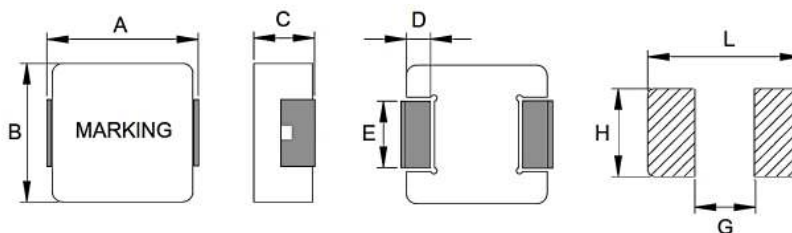
ELECTRICAL CHARACTERISTICS

Item	Inductance (μH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	I _{SAT} Typ. (A)	I _{RMS} Typ. (A)
PIMR10N0502MA1	0.10	±30%	3.6	4.0	45	18
PIMR15N0502MA1	0.22	±30%	3.8	4.6	27	16
PIMR22M0502MA1	0.33	±20%	4.0	5.5	25	15
PIMR33M0502MA1	0.47	±20%	6.3	7.3	21.3	12
PIMR47M0502MA1	0.56	±20%	7.3	8.6	18.0	11.5
PIMR68M0502MA1	0.68	±20%	11.0	12.4	12.8	10.0
PIM1R0M0502MA1	1.0	±20%	17.5	20.0	13.7	7.0
PIM1R5M0502MA1	1.5	±20%	26.5	30.5	9.8	5.5
PIM2R2M0502MA1	2.2	±20%	42	50	9.0	4.2
PIM3R3M0502MA1	3.3	±20%	66	76	7.3	3.3
PIM4R7M0502MA1	4.7	±20%	103	116	5.0	2.8
PIM5R6M0502MA1	5.6	±20%	112	122	4.0	2.5
PIM6R8M0502MA1	6.8	±20%	130	150	3.8	2.4
PIM8R2M0502MA1	8.2	±20%	148	171	3.5	2.3
PIM100M0502MA1	10	±20%	180	199	3.4	2.3
PIM150M0502MA1	15	±20%	240	270	2.8	1.9
PIM220M0502MA1	22	±20%	350	390	1.8	1.5

Note:

1. Inductance test under 100KHz, 1.0V
2. All test data referenced to 25°C ambient
3. I_{SAT} based on inductance drop ($\Delta L/L0: \leq 30\%$) approximately
4. I_{RMS} based on temperature rise ($\Delta T: 40^\circ\text{C}$) approximately
5. Operating temperature: -55°C ~ +125°C (Including Self-temperature rise)

DIMENSIONS



(Unit: mm)

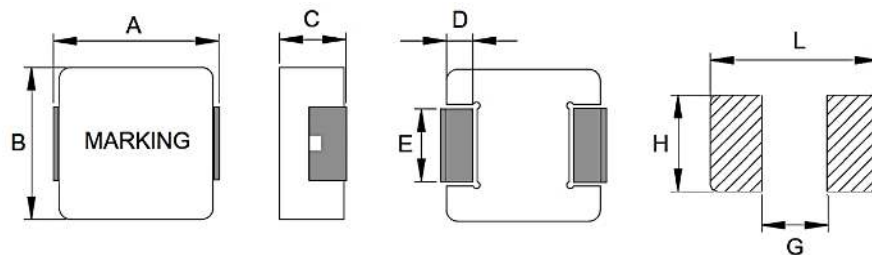
Size Code	A	B	C	D	E	L	G	H
0502	5.7±0.3	5.2±0.2	1.8±0.2	1.1±0.3	2.5±0.3	6.2	2.2	2.8

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DIMENSIONS – PIM-MA1 series



(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
0302	3.5±0.2	3.2±0.2	1.8±0.2	0.7±0.2	1.2±0.2	4.1	1.9	1.45
0312	3.5±0.2	3.2±0.2	1.0±0.2	0.7±0.2	1.2±0.2	4.1	1.9	1.45
0315	3.5±0.3	3.2±0.2	1.3±0.2	0.7±0.2	1.2±0.2	4.1	1.9	1.45
0402	4.45±0.25	4.06±0.25	1.8±0.2	0.76±0.30	2.0±0.20	5.2	2.2	2.4
0412	4.45±0.25	4.06±0.25	1.0±0.2	0.76±0.30	2.0±0.20	5.2	2.2	2.3
0415	4.45±0.25	4.06±0.25	1.3±0.2	0.76±0.3	2.0±0.2	5.2	2.2	2.3
0502	5.7±0.3	5.2±0.2	1.8±0.2	1.1±0.3	2.5±0.3	6.2	2.2	2.8
053P	5.7±0.3	5.2±0.2	2.8±0.2	1.1±0.3	2.5±0.3	6.5	2.5	2.8
0503	5.7±0.3	5.2±0.2	2.8±0.2	1.1±0.3	1.5±0.2	6.5	2.5	1.8
0512	5.7±0.3	5.2±0.2	1.0±0.2	1.1±0.3	2.5±0.3	6.2	2.2	2.8
0515	5.7±0.3	5.2±0.2	1.3±0.2	1.1±0.3	2.5±0.3	6.2	2.2	2.8
0518	5.7±0.3	5.2±0.2	1.6±0.2	1.1±0.3	2.5±0.3	6.2	2.2	2.8
053T	4.9±0.3	4.7±0.2	2.8±0.2	1.0±0.3	1.5±0.3	7.0	3.0	2.5
0602	7.0±0.3	6.6±0.3	1.8±0.2	1.8±0.3	3.0±0.3	7.7	2.5	3.5
0603	7.3±0.3	6.6±0.3	2.8±0.2	1.8±0.3	3.0±0.3	8.4	2.5	3.5
0604	7.3±0.3	6.6±0.3	3.8±0.2	1.8±0.30	3.0±0.3	8.4	2.5	3.5
0605	7.3±0.3	6.6±0.3	4.8±0.2	1.8±0.3	3.0±0.3	8.4	2.5	3.5
0612	7.0±0.3	6.6±0.3	1.0±0.2	1.8±0.3	2.5±0.3	7.7	2.5	3.0
0615	7.0±0.3	6.6±0.3	1.3±0.2	1.8±0.3	3.0±0.3	7.7	2.5	3.5
0618	7.0±0.3	6.6±0.3	1.6±0.2	1.8±0.3	3.0±0.3	7.7	2.5	3.5
0624	7.0±0.3	6.6±0.3	2.2±0.2	1.8±0.3	3.0±0.3	7.7	2.5	3.5
1003	11.0±0.5	10.0±0.3	2.8±0.2	2.3±0.3	3.0±0.3	13.6	5.4	3.5
1004	11.0±0.5	10.0±0.3	3.8±0.2	2.3±0.3	3.0±0.3	13.6	5.4	3.5
1005	11.0±0.5	10.0±0.3	4.8±0.2	2.3±0.3	3.0±0.3	13.6	5.4	3.5
1205	13.5±0.5	12.5±0.3	4.8±0.2	2.3±0.3	4.7±0.3	14.2	8.0	5.0
1206	13.5±0.5	12.5±0.3	5.7±0.3	2.3±0.3	4.7±0.3	14.2	8.0	5.0
1235	13.5±0.5	12.5±0.3	3.3±0.2	2.3±0.3	4.7±0.3	14.2	8.0	5.0
1265	13.5±0.5	12.5±0.3	6.2±0.3	2.3±0.3	4.7±0.3	14.2	8.0	5.0
1707	17.6±0.4	16.9±0.3	6.7±0.3	2.1±0.3	11.9±0.3	18.5	12.2	12.5

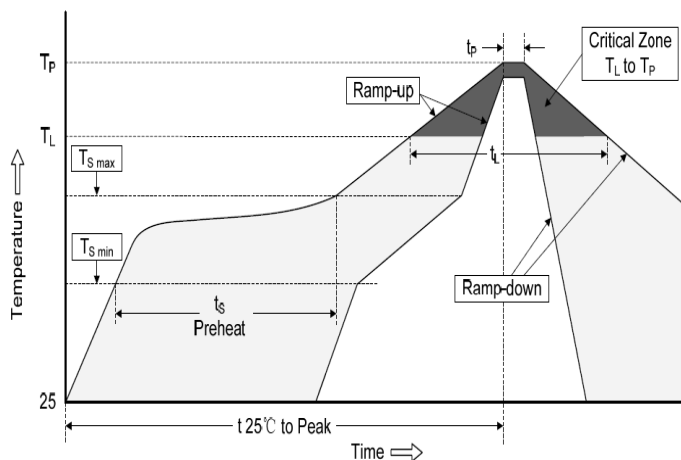
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RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	200°C
	Time (min. to max.) (t_s)	60~120 seconds
Average ramp up rate $T_{s(max)}$ to T_L		3°C/second max.
Average ramp up rate T_L to peak		3°C/second max.
Reflow	Temp. (T_L)	217°C
	Time (min. to max.) (t_L)	60~150 seconds
Peak Temperature (T_P)		245°C
Time within 5°C of actual peak Temperature (t_p)		10 seconds
Ramp-down Rate		6°C/second max.
Reflow Times		3 times max.



PART NUMBERING SYSTEM

PIM (1) R47 (2) M (3) 0502 (4) MA1 (5)

No	Item	Code	Description
(1)	Product Code	PIM	Power Inductor Series, Molded Surface Mount Type
(2)	Inductance	R47	R47: 0.47μH 2R2: 2.2μH, 100: 10μH
(3)	Tolerance	M	M: ±20% N: ±30%
(4)	Size Code	0502	0502: 5.7x1.8mm Width x Height (mm)
(5)	Series Code	MA1	High Current AEC-Q200

*Specifications subject to change without notice.