

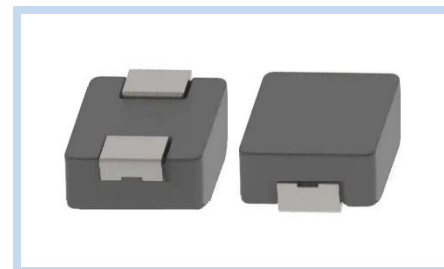
Molded Power Inductor High Current AEC-Q200

PIM-0603MA1 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



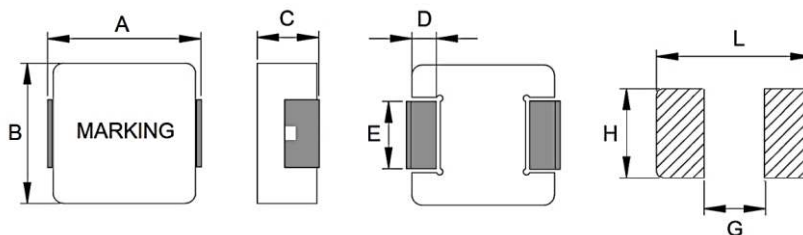
ELECTRICAL CHARACTERISTICS

Item	Inductance (μH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	I _{SAT} Typ. (A)	I _{RMS} Typ. (A)
PIMR10N0603MA1	0.10	±30%	1.2	1.7	60.0	32.5
PIMR22N0603MA1	0.22	±30%	2.1	2.8	40.0	23.0
PIMR33M0603MA1	0.33	±20%	3.5	3.9	32.0	20.0
PIMR47M0603MA1	0.47	±20%	4.0	4.2	26.0	17.5
PIMR56M0603MA1	0.56	±20%	4.7	5.0	25.5	16.5
PIMR68M0603MA1	0.68	±20%	4.8	5.5	25.0	15.5
PIMR82M0603MA1	0.82	±20%	6.7	8.0	24.0	13.0
PIM1R0M0603MA1	1.0	±20%	8.3	10.0	22.0	11.0
PIM1R5M0603MA1	1.5	±20%	13.0	15.0	18.0	9.0
PIM2R2M0603MA1	2.2	±20%	18.0	20.0	14.0	8.0
PIM3R3M0603MA1	3.3	±20%	28.0	30.0	13.5	6.0
PIM4R7M0603MA1	4.7	±20%	37.0	40.0	10.0	5.5
PIM5R6M0603MA1	5.6	±20%	43.0	48.0	9.0	5.0
PIM6R8M0603MA1	6.8	±20%	54.0	60.0	8.0	4.5
PIM8R2M0603MA1	8.2	±20%	64.0	68.0	7.5	4.0
PIM100M0603MA1	10	±20%	75.0	85.0	6.0	3.5
PIM150M0603MA1	15	±20%	107	123	4.0	3.0
PIM220M0603MA1	22	±20%	165	190	3.5	2.0

Note:

1. Inductance test under 100KHz, 1.0V
2. All test data referenced to 25°C ambient
3. I_{SAT} based on inductance drop ($\Delta L/L_0$: $\leq 30\%$) approximately
4. I_{RMS} based on temperature rise (ΔT : 40 °C) approximately
5. Operating temperature: -55°C ~ +125°C (Including Self-temperature rise)

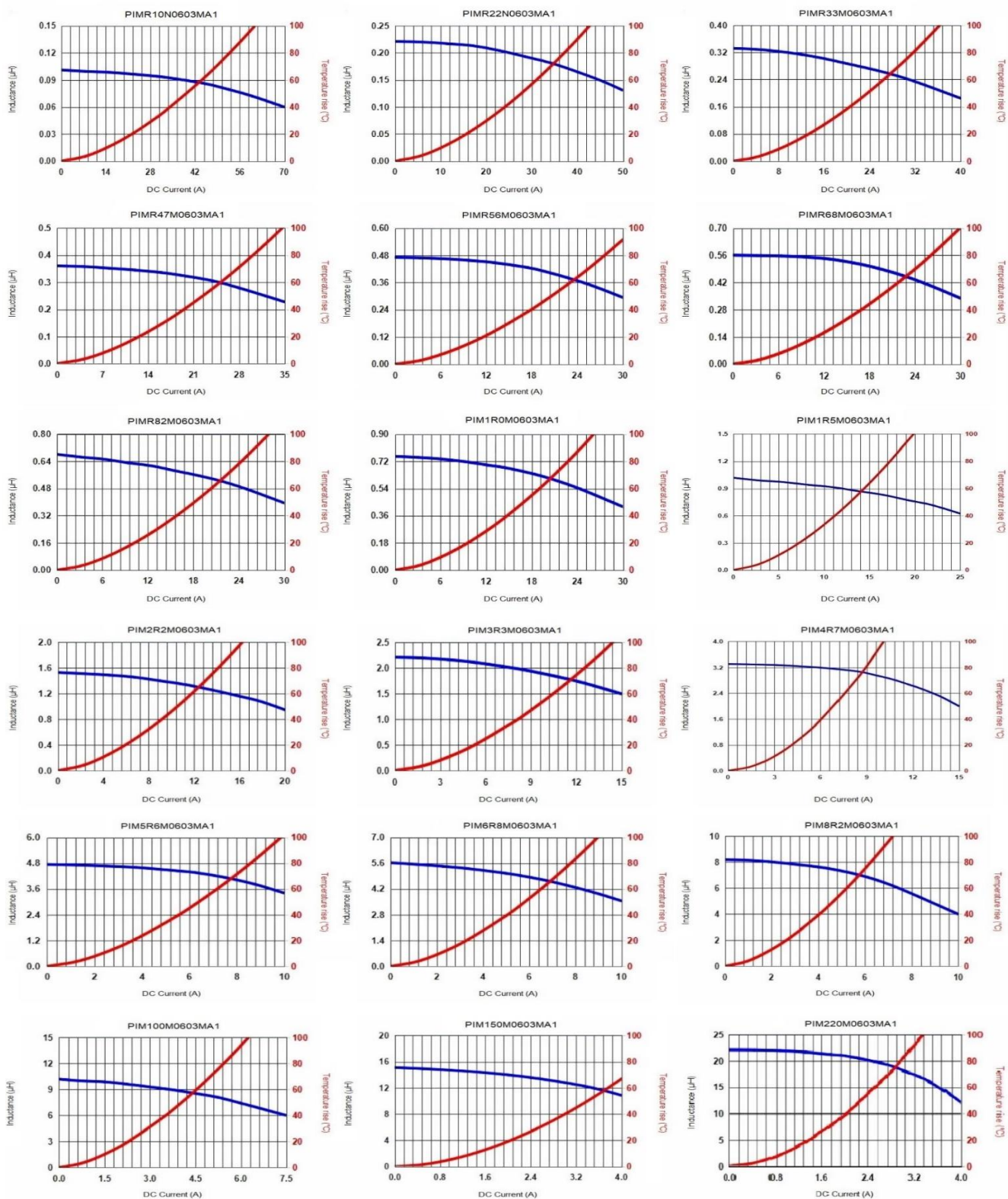
DIMENSIONS



(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
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

CHARACTERISTIC CURVES

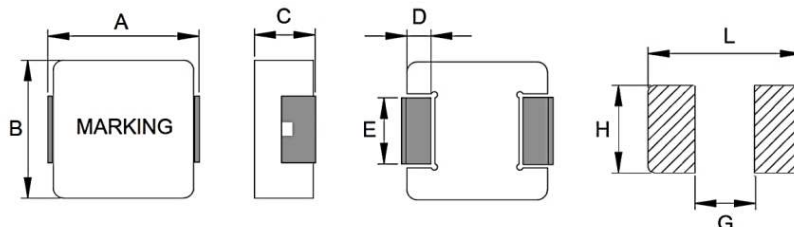


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DIMENSIONS – PIM-MA1 series



(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

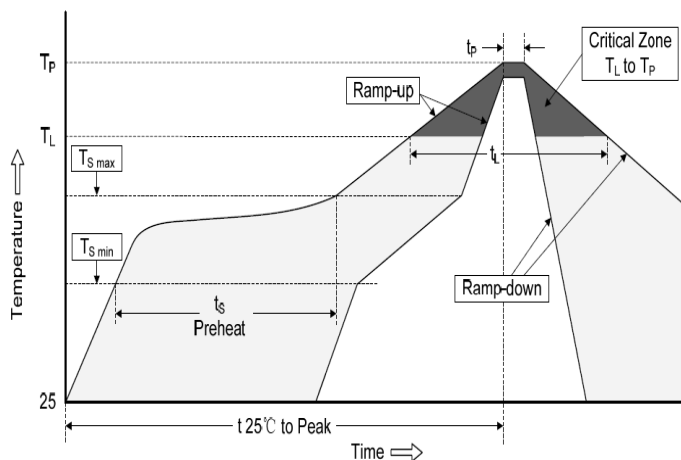
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RECOMMENDED SOLDERING PROFILES

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) 1R0 (2) M (3) 0603 (4) MA1 (5)

No	Item	Code	Description
(1)	Product Code	PIM	Power Inductor Series, Molded Surface Mount Type
(2)	Inductance	1R0	1R0: 1.0μH R47: 0.47μH, 2R2: 2.2μH, 100: 10μH
(3)	Tolerance	M	M: ±20% N: ±30%
(4)	Size Code	0603	0603: 7.3x2.8mm Width x Height (mm)
(5)	Series Code	MA1	High Current AEC-Q200

*Specifications subject to change without notice.