

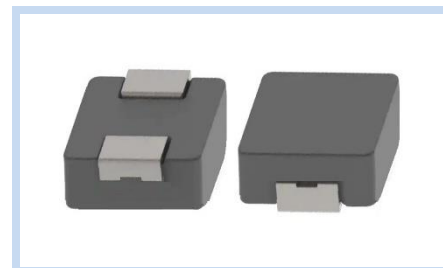
# Molded Power Inductor High Current AEC-Q200

PIM-1004MA3 Series

**MERITEK**

## FEATURE

- Low Loss, Low DCR
- High Performance (Isat)
- Ultra-Low Buzz Noise
- Capable of Corresponding High Frequency
- Shielded and Compact Construction Design
- Application: Notebook, PC, Servers, DC/DC Converter, High Current Converter, Battery Powered Devices
- AEC-Q200 Compliant



## ELECTRICAL CHARACTERISTICS

Item	Inductance (μH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	IsAT Typ. (A)	I <sub>RMS</sub> Typ. (A)	E(mm)
PIMR15N1004MA3	0.15	±30%	0.50	0.60	82.0	44.0	3.0
PIMR22M1004MA3	0.22	±20%	0.72	0.83	70.0	36.0	3.0
PIMR36M1004MA3	0.36	±20%	1.05	1.18	51.0	33.0	3.0
PIMR47M1004MA3	0.47	±20%	1.3	1.5	46.0	32.0	3.0
PIMR56M1004MA3	0.56	±20%	1.6	1.8	34.0	25.0	2.5
PIMR68M1004MA3	0.68	±20%	1.9	2.2	31.0	23.0	2.5
PIM1R0M1004MA3	1.0	±20%	2.9	3.25	29.0	20.0	2.5
PIM1R5M1004MA3	1.5	±20%	3.7	4.2	26.0	17.5	2.5
PIM1R8M1004MA3	1.8	±20%	5.1	5.7	23.0	16.5	3.0
PIM2R2M1004MA3	2.2	±20%	5.8	6.7	20.0	15.0	3.0
PIM3R3M1004MA3	3.3	±20%	10.5	11.8	17.5	11.0	3.0
PIM4R7M1004MA3	4.7	±20%	15.8	19.0	15.2	8.8	3.0
PIM5R6M1004MA3	5.6	±20%	19.0	22.8	14.1	8.0	3.0
PIM6R8M1004MA3	6.8	±20%	22.0	24.5	12.2	7.8	3.0
PIM8R2M1004MA3	8.2	±20%	25.0	28.0	9.5	7.6	3.0
PIM100M1004MA3	10.0	±20%	27.0	30.0	8.6	7.5	3.0
PIM150M1004MA3	15.0	±20%	41.0	45.0	7.0	6.25	3.0
PIM220M1004MA3	22.0	±20%	58.0	66.0	6.2	5.0	3.0
PIM330M1004MA3	33.0	±20%	84.0	91.0	5.5	4.4	3.0
PIM470M1004MA3	47.0	±20%	125.0	143.0	4.0	3.5	3.0

Note:

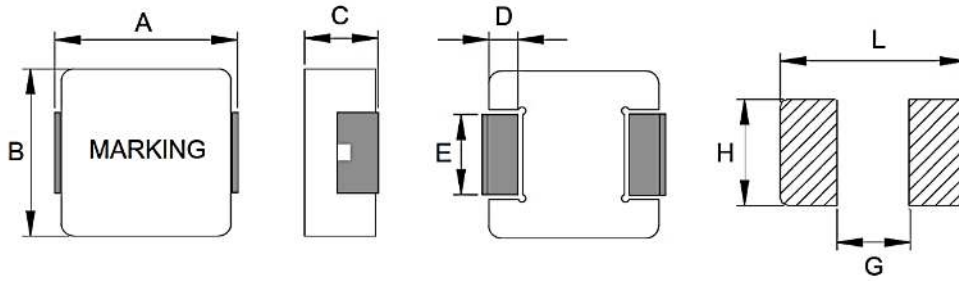
1. Inductance test under 100KHz, 1.0V
2. All test data referenced to 25 °C ambient
3. Testing Instrument(orequ): L: HP4284A, CH11025, CH3302, CH1320, CH1320S LCR METER / Rdc:CH16502, Agilent33420A MICRO OHMMETER
4. IsAT based on inductance change ( $\Delta L/L0: \leq 30\%$ ) approximately
5. I<sub>RMS</sub> based on temperature rise ( $\Delta T: 40 \text{ }^\circ\text{C}$ ) approximately
6. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
7. Special inquiries besides the above common used types can be met on your requirement.

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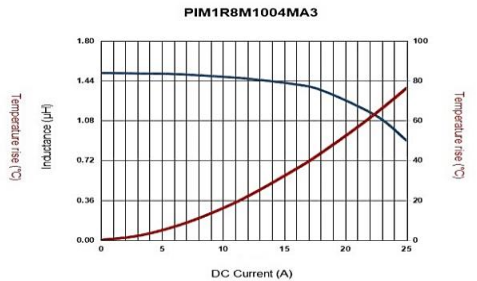
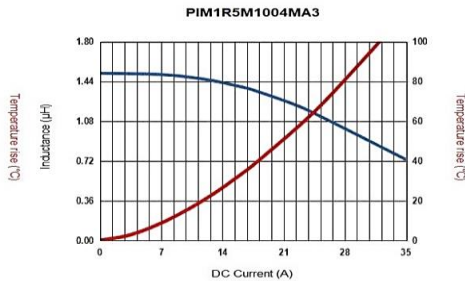
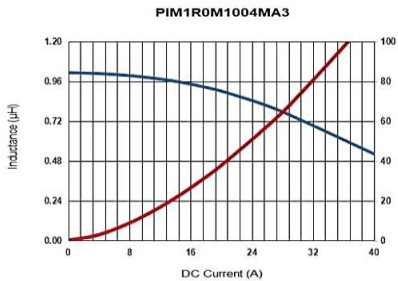
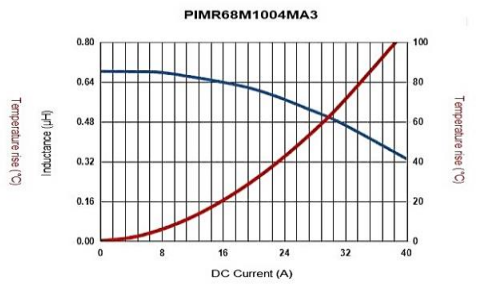
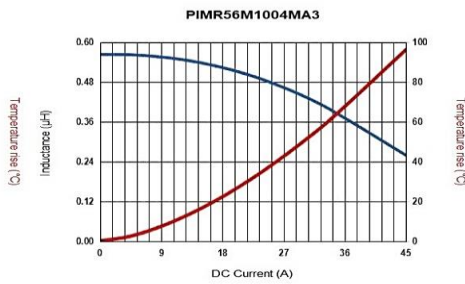
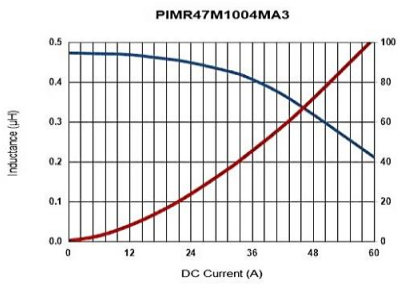
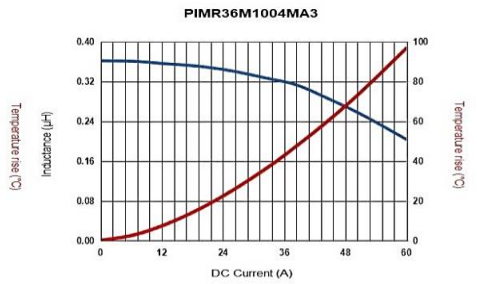
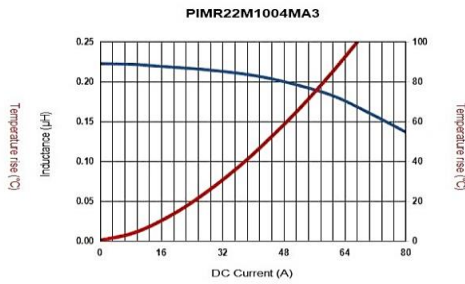
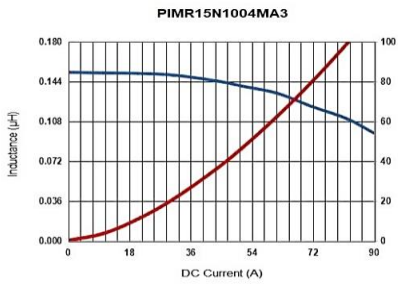
## DIMENSIONS



(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
1004	11.0±0.3	10.0±0.3	3.8±0.2	2.0±0.3	See Spec Table	12.5	5.4	3.5

## CHARACTERISTIC CURVES

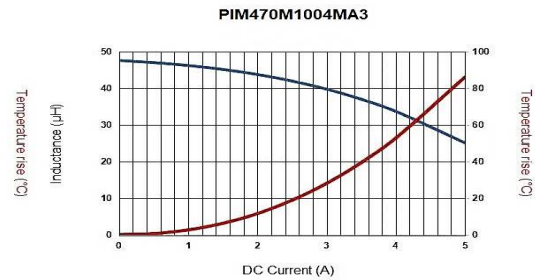
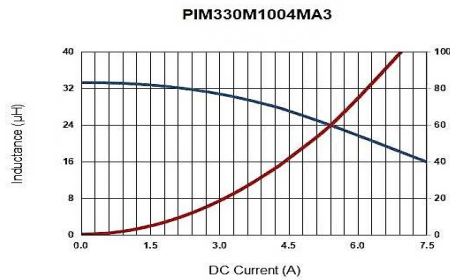
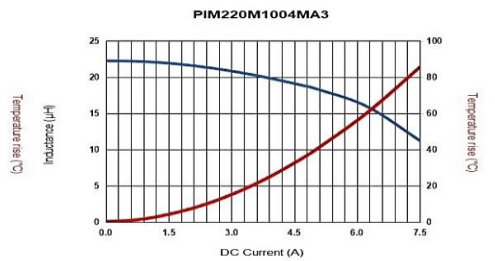
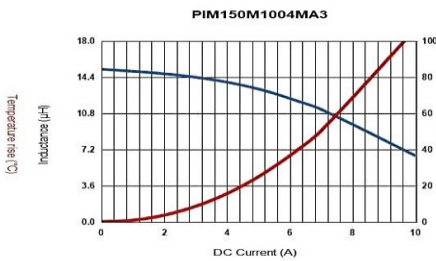
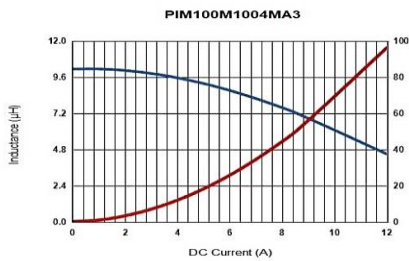
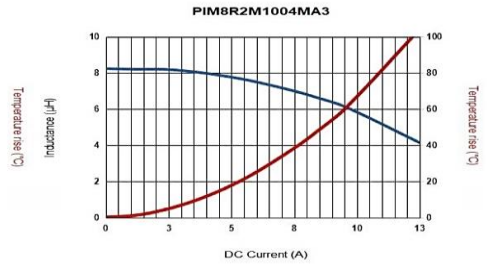
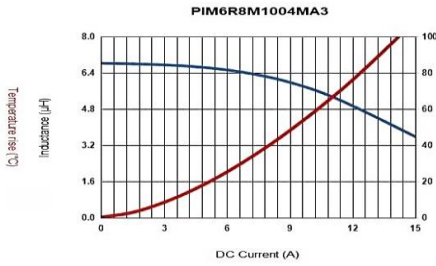
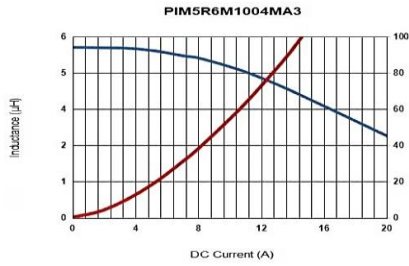
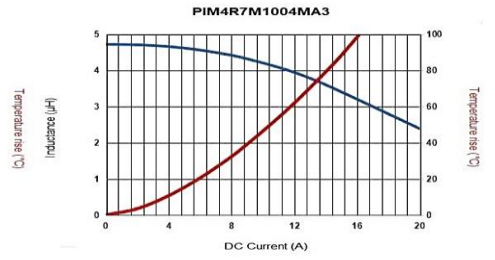
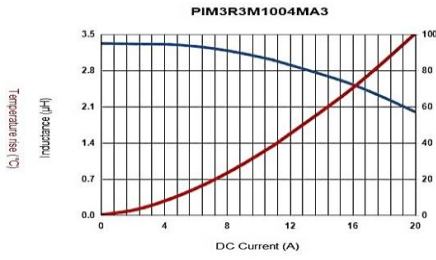
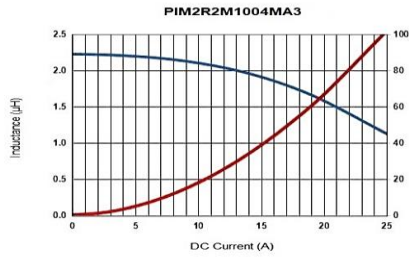


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## CHARACTERISTIC CURVES

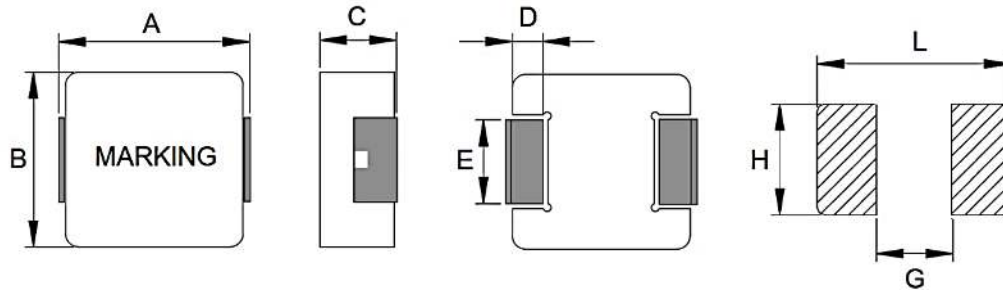


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PIM-1004MA3 Series

**MERITEK**

## DIMENSIONS – PIM-MA3 series



(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
0503	5.7±0.3	5.2±0.2	2.8±0.2	1.0±0.3	2.0±0.2	6.0	2.8	2.5
0603	7.1±0.3	6.6±0.2	2.8±0.2	1.6±0.3	3.0±0.2	8.0	3.7	3.4
0604	7.1±0.3	6.6±0.2	3.8±0.2	1.6±0.3	3.0±0.2	8.0	3.7	3.4
0605	7.3±0.3	6.6±0.3	4.8±0.2	1.6±0.3	3.0±0.2	8.0	3.5	3.4
1004	11.0±0.3	10.0±0.3	3.8±0.2	2.0±0.3	See Table	12.5	5.4	3.5
1005	11.0±0.5	10.0±0.3	4.8±0.2	2.0±0.3	See Table	12.5	5.4	3.5
1205	13.5±0.5	12.6±0.2	4.7±0.3	2.3±0.3	See Table	14.5	8.0	5.0
1206	13.5±0.5	12.6±0.2	5.7±0.3	2.3±0.3	See Table	14.5	8.0	5.0
1265	13.5±0.5	12.6±0.2	6.2±0.3	2.3±0.3	See Table	14.5	8.0	5.0
1707	17.8±0.5	16.9±0.3	6.7±0.3	2.3±0.3	11.9±0.3	18.5	12	12.5
2313	23.5±0.5	22.0±0.3	12.6±0.4	5.0±0.4	19±0.3	24.0	12.5	19.6

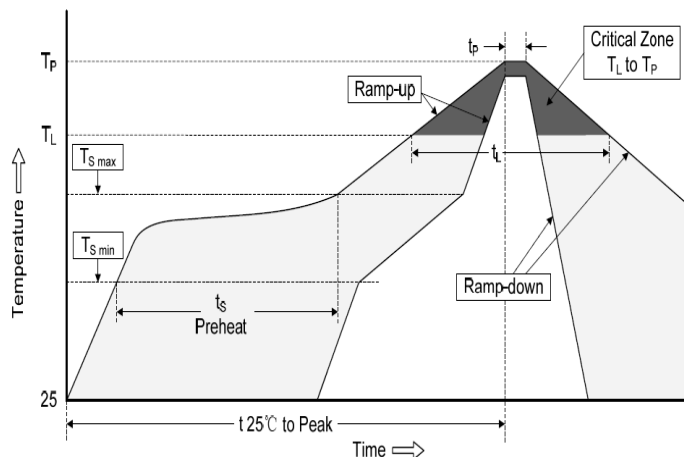
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## RECOMMENDED SOLDERING PROFILES

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)    1004 (4)    MA3 (5)

No	Item	Code	Description
(1)	Meritek Series	PIM	Power Inductor Series High Current Molded 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	1004	1004: 10.0 x 3.8mm      Width x Height (mm)
(5)	Series Code	MA3	Automotive High Current Type

\*Specifications subject to change without notice.