

# Molded Power Inductor

## High Current Low DCR AEC-Q200

PIM-0703AMA2 series

**MERITEK**

### FEATURE

- High Current, Low DCR, High Efficiency
- Soft Saturation
- 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



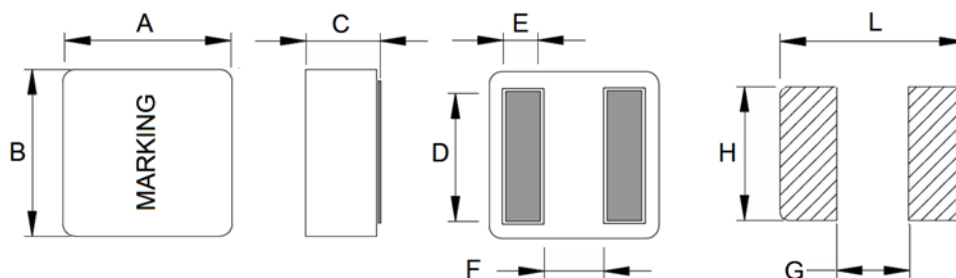
### ELECTRICAL CHARACTERISTICS

Item	Inductance (μH)	Tol. (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	I <sub>SAT</sub> Typ. (A)	I <sub>RMS</sub> (A)		D ±0.3 (mm)
						20°C Rise	40°C Rise	
PIM1R0M0703AMA2	1.0	±20%	4.55	5.00	30.0	16.1	21.8	6.6
PIM1R5M0703AMA2	1.5	±20%	7.50	8.25	25.0	12.0	15.3	6.6
PIM2R2M0703AMA2	2.2	±20%	12.40	13.70	19.0	10.0	13.0	6.2
PIM2R7M0703AMA2	2.7	±20%	14.00	15.40	16.0	9.2	11.4	6.2
PIM3R3M0703AMA2	3.3	±20%	16.30	18.00	15.0	8.0	10.0	6.2
PIM4R7M0703AMA2	4.7	±20%	24.20	26.70	13.5	6.9	9.0	6.2
PIM5R6M0703AMA2	5.6	±20%	30.10	33.20	12.5	5.3	7.3	6.2
PIM6R8M0703AMA2	6.8	±20%	38.60	42.50	12.0	4.5	6.8	6.2
PIM8R2M0703AMA2	8.2	±20%	44.30	48.73	10.2	3	5.9	6.2

Note:

1. Inductance test under 100KHz, 0.1V
2. All test data referenced to 25°C ambient
3. I<sub>SAT</sub> based on inductance change ( $\Delta L/L0: \leq 30\%$ ) approximately
4. Operating temperature: -55°C ~ +155°C (Including Self-temperature rise)

### DIMENSIONS



(Unit: mm)

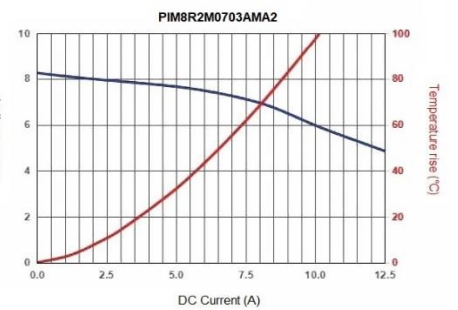
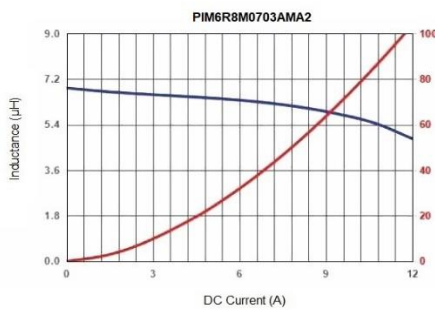
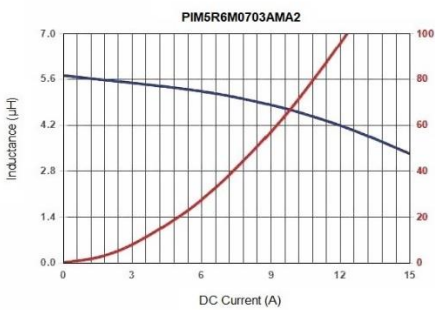
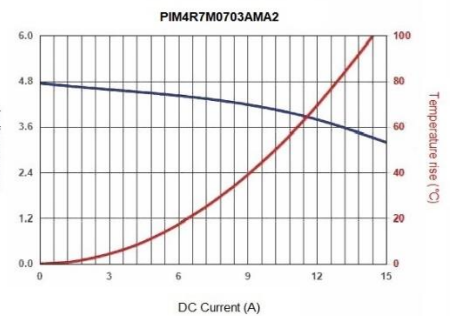
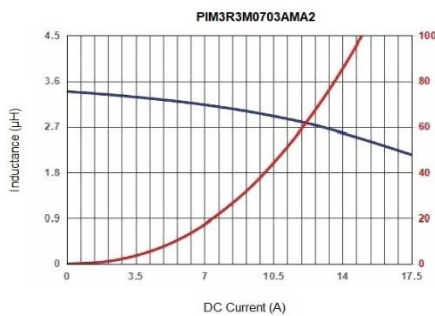
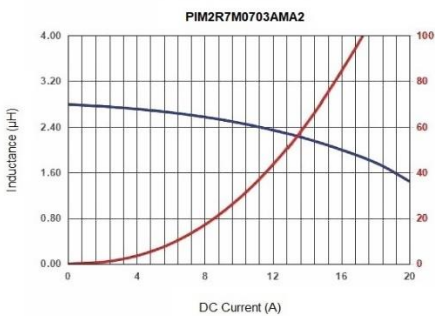
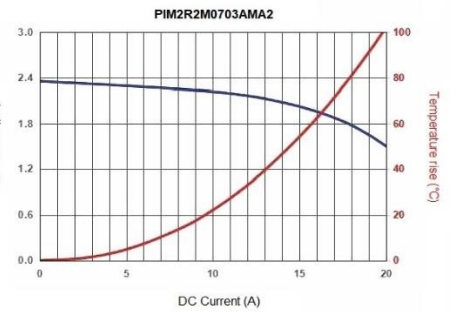
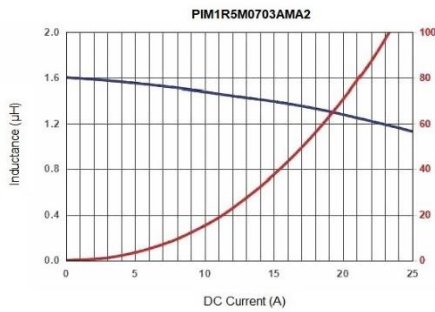
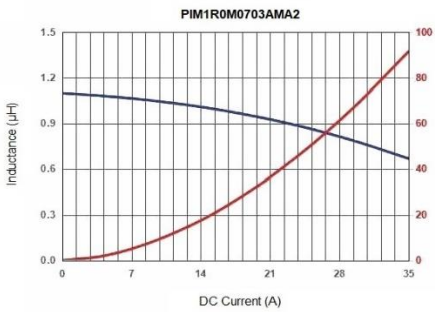
Size Code	A	B	C	D	E	F	L	G	H
0703A	7.80±0.25	7.60±0.20	2.90±0.2	See Table	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref

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## CHARACTERISTIC CURVES



# Molded Power Inductor

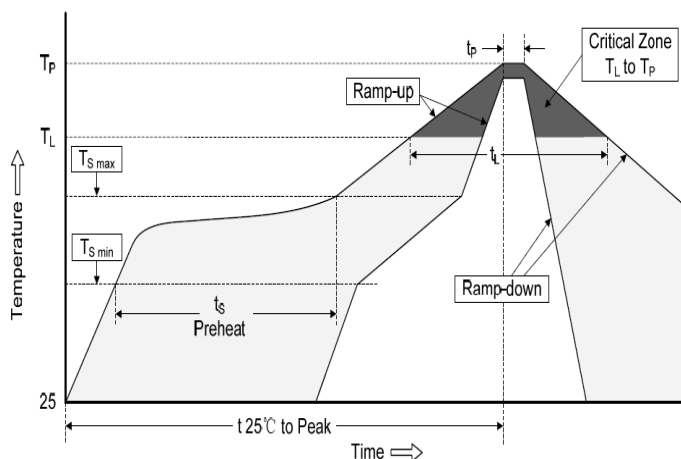
## High Current Low DCR AEC-Q200

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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    1R0    M    0703A    MA2  
 (1)    (2)    (3)    (4)    (5)

No	Item	Code	Description	
(1)	Product Code	PIM	Power Inductor, Molded Type	
(2)	Inductance	1R0	1R0: 1.0μH	R47: 0.47μH, 2R2: 2.2μH, 100: 10μH
(3)	Tolerance	M	M: ±20%	+20% ~ -20%
(4)	Size Code	0703A	0703A: 7.8 x 2.9mm	Width x Height (mm)
(5)	Series Code	MA2	Molded High Current, Low RDC AEC-Q200 series	

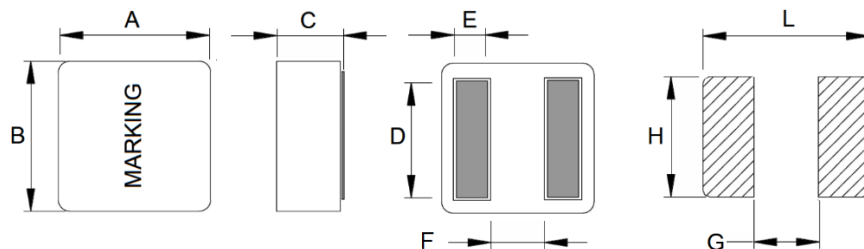
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## High Current Low DCR AEC-Q200

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### DIMENSIONS – PIM-MA2 series



(Unit: mm)

Size Code	A	B	C	D	E	F	L	G	H
0402A/R	4.1±0.2	4.1±0.2	1.9±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
0402B/L	4.4±0.2	4.4±0.2	1.9±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
0403R	4.1±0.25	4.1±0.25	2.8±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
0403L	4.4±0.2	4.4±0.2	2.8±0.2	3.4±0.3	0.88±0.2	1.6±0.25	3.4 ref	1.4 ref	3.8 ref
0502A	5.5±0.2	5.3±0.2	1.9±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
0502B	6.0±0.2	5.7±0.2	1.9±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
0503A	5.5±0.2	5.3±0.2	2.9±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
0503B	6.0±0.2	5.7±0.2	2.9±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
0505R	5.5±0.2	5.3±0.2	4.8±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
0505L	6.0±0.2	5.7±0.2	4.8±0.2	4.3±0.3	1.1±0.2	2.3±0.25	4.5 ref	2.0 ref	4.7 ref
0603A	6.6±0.2	6.4±0.2	2.9±0.2	See Table	1.4±0.2	2.6±0.25	5.8 ref	2.5 ref	5.6 ref
0603B	7.2±0.2	6.9±0.2	2.9±0.2	See Table	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
0604B	7.2±0.2	6.9±0.2	3.8±0.2	See Table	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
0605A	6.6±0.2	6.4±0.2	4.8±0.2	See Table	1.4±0.2	2.6±0.25	5.8 ref	2.5 ref	5.6 ref
0605B	7.2±0.2	6.9±0.2	4.8±0.2	See Table	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
0606R	6.6±0.2	6.4±0.2	5.8±0.2	5.3±0.3	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
0606B/L	7.2±0.2	6.9±0.2	5.8±0.2	5.3±0.3	1.4±0.2	2.6±0.25	5.6 ref	2.5 ref	5.6 ref
0702A	7.80±0.25	7.60±0.20	1.85±0.2	6.2±0.3	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
0702B	8.4±0.3	8.0±0.3	1.85±0.2	See Table	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
0703A	7.80±0.25	7.60±0.20	2.90±0.2	See Table	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
0703B	8.4±0.3	8.0±0.3	2.9±0.2	See Table	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
0705A	7.80±0.25	7.80±0.25	4.80±0.2	6.2±0.3	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
0705B	8.4±0.3	8.0±0.3	4.8±0.2	6.2±0.3	1.75±0.2	3.15±0.25	7.4 ref	2.8 ref	7.2 ref
0707A	7.80±0.25	7.80±0.25	6.70±0.30	See Table	1.75±0.20	3.15±0.25	7.8 ref	2.8 ref	6.7 ref
0707B	8.4±0.3	8.0±0.3	6.7±0.3	See Table	1.75±0.2	3.15±0.25	7.8 ref	2.8 ref	6.7 ref
0808B	8.9±0.3	8.5±0.3	7.7±0.3	6.9±0.4	1.8±0.2	3.5±0.3	8.0 ref	2.7 ref	7.8 ref
1010B	11.9±0.3	11.0±0.3	9.7±0.3	See Table	2.4±0.2	4.4±0.3	10.5 ref	3.7 ref	12.0 ref
1031L	11.9±0.3	11.0±0.30	2.9±0.2	9.0±0.5	2.4±0.2	4.4±0.3	10.5 ref	3.7 ref	13.0 ref
1006B	11.9±0.3	11.0±0.3	5.7±0.3	See Table	2.4±0.2	4.5±0.3	10.5 ref	3.7 ref	11.0 ref
1508A	16.5±0.3	15.5±0.3	7.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref
1508B	17.5±0.3	16.5±0.3	7.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref
1510A	16.5±0.3	15.5±0.3	9.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref
1510B	17.5±0.3	16.5±0.3	9.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref
1513A	16.5±0.3	15.5±0.3	12.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref
1513B	17.5±0.3	16.5±0.3	12.7±0.3	13.2±0.5	3.2±0.2	7.0±0.3	15.0 ref	6.0 ref	15.0 ref

\*Specifications subject to change without notice.