

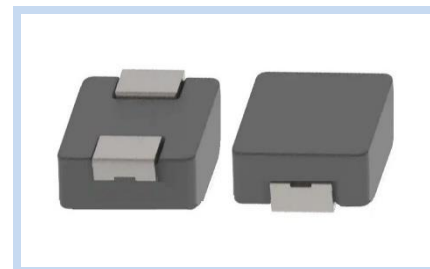
# Molded Power Inductor High Current Shielded Type

PIM-0503A1 series

**MERITEK**

## FEATURE

- High Current, Low DCR, High Efficiency
- Minimized Acoustic and Leakage Flux Noise
- Shielded and Compact Construction Design
- Application: Notebook, PC, Servers, DC/DC Converter, High current converter, Battery powered devices



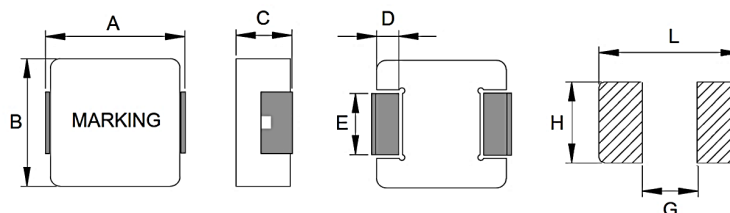
## ELECTRICAL CHARACTERISTICS

Item	Inductance (μH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	IsAT Typ. (A)	I <sub>rms</sub> Typ. (A)
PIMR10N0503A1	0.10	±30%	2.5	3.0	27.0	23.0
PIMR22N0503A1	0.22	±20%	3.7	4.4	21.0	15.5
PIMR33M0503A1	0.33	±20%	4.3	5.0	18.0	14.0
PIMR47M0503A1	0.47	±20%	6.4	7.4	16.0	12.0
PIMR68M0503A1	0.68	±20%	10	12	14.0	8.50
PIM1R0M0503A1	1.00	±20%	13	14	11.0	7.00
PIM1R5M0503A1	1.50	±20%	16	25	10.0	6.00
PIM2R2M0503A1	2.20	±20%	25	35	9.00	5.50
PIM3R3M0503A1	3.30	±20%	32	38	8.00	5.00
PIM4R7M0503A1	4.70	±20%	50	53	6.00	4.60
PIM5R6M0503A1	5.60	±20%	55	63	4.50	4.25
PIM6R8M0503A1	6.80	±20%	68	76.2	4.30	4.00
PIM100M0503A1	10.0	±20%	110	128	3.50	2.75
PIM150M0503A1	15.0	±20%	165	190	2.60	2.10
PIM220M0503A1	22.0	±20%	220	250	1.70	1.90

Note:

1. Inductance test under 100KRz, 1.0V
2. All test data referenced to 25°C ambient
3. IsAT based on inductance drop ( $\Delta L/L_0 \leq 30\%$ ) approximately
4. I<sub>rms</sub> based on temperature rise ( $\Delta T: 40^\circ\text{C}$ ) approximately
5. Operating temperature:  $-40^\circ\text{C} \sim +125^\circ\text{C}$  (Including Self-temperature rise)

## DIMENSIONS



(Unit: mm)

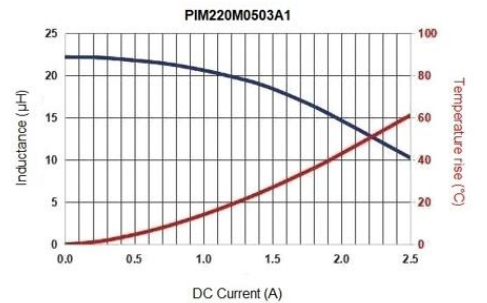
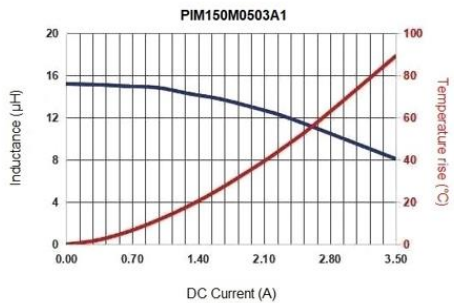
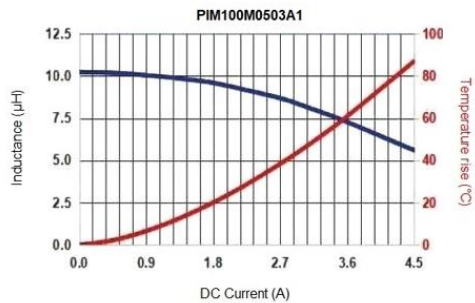
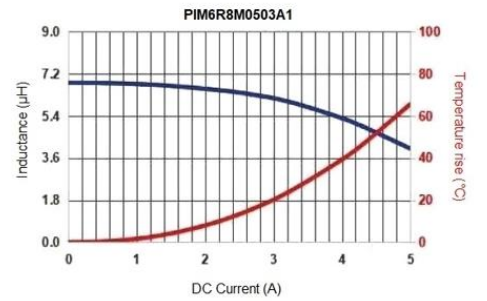
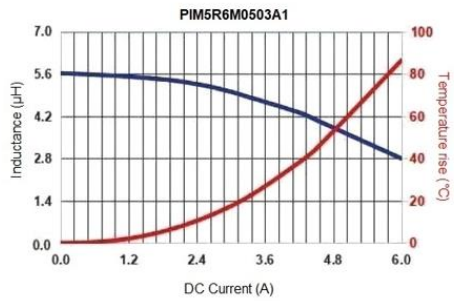
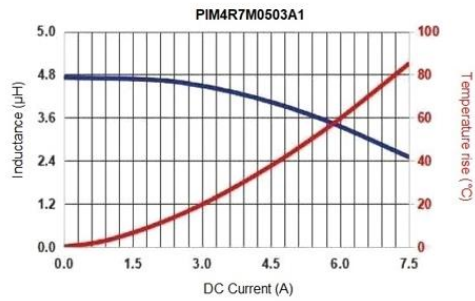
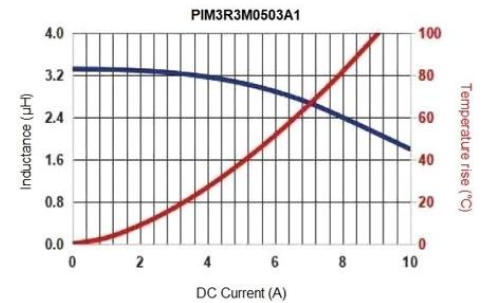
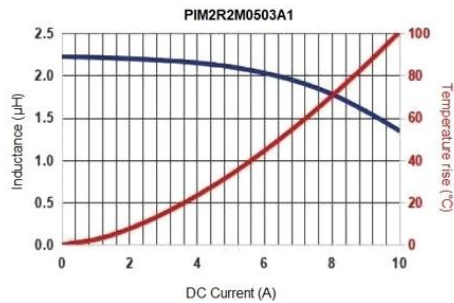
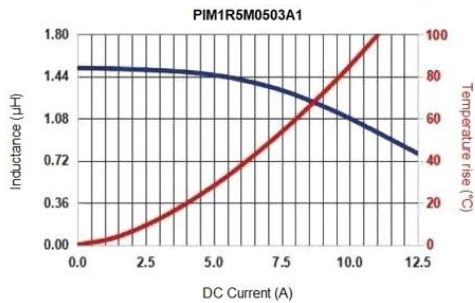
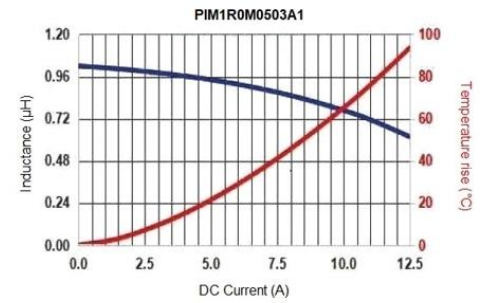
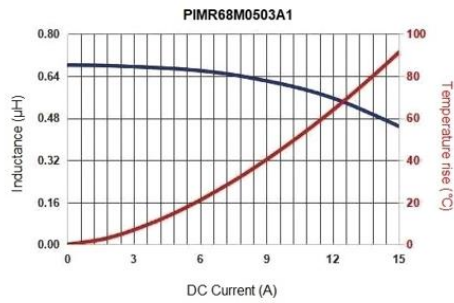
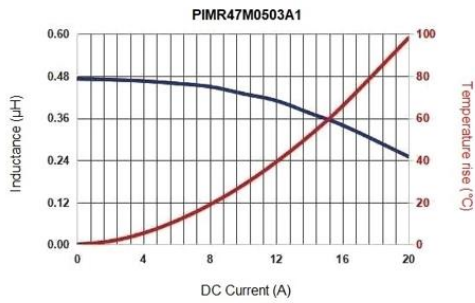
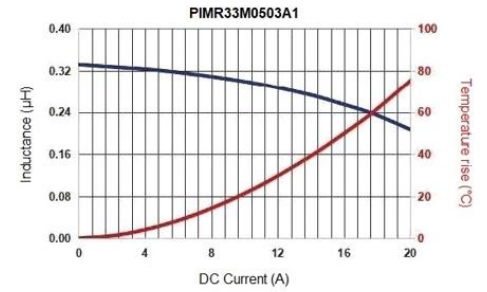
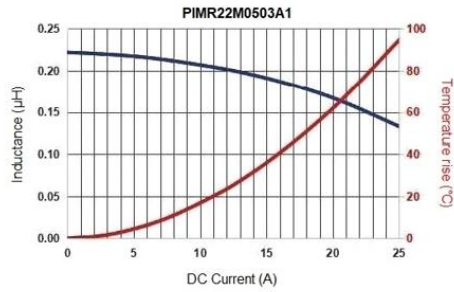
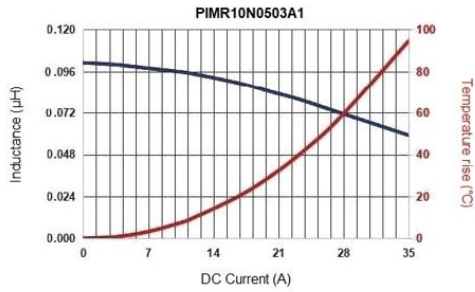
Size Code	A	B	C	D	E	L	G	H
0503	5.7±0.30	5.2±0.20	2.8±0.20	1.1±0.30	1.5±0.30	6.5	2.5	2.8

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PIM-0503A1 series

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## CHARACTERISTIC CURVES

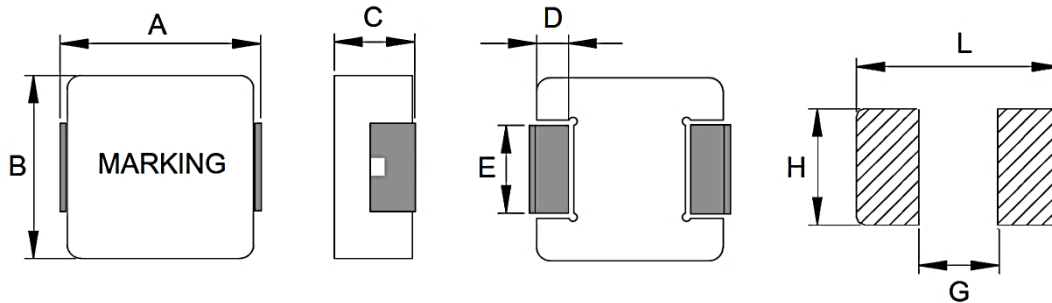


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## DIMENSIONS – PIM-A1 series



(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
0302	3.5±0.20	3.2±0.20	1.8±0.2	0.7±0.20	1.2±0.20	4.1	1.9	1.45
0312	3.5±0.20	3.2±0.20	1.0±0.2	0.7±0.20	1.2±0.20	4.1	1.9	1.45
0315	3.5±0.20	3.2±0.20	1.3±0.2	0.7±0.20	1.2±0.20	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	2.4
0415	4.45±0.25	4.06±0.25	1.3±0.2	0.76±0.30	2.0±0.20	5.2	2.2	2.4
0502	5.7±0.30	5.2±0.20	1.8±0.2	1.1±0.30	2.5±0.30	6.2	2.2	2.8
0503	5.7±0.30	5.2±0.20	2.8±0.2	1.1±0.30	1.5±0.20	6.2	2.5	1.8
0512	5.7±0.30	5.2±0.20	1.0±0.2	1.1±0.30	2.5±0.30	6.2	2.2	2.8
0515	5.7±0.30	5.2±0.20	1.3±0.2	1.1±0.30	2.5±0.30	6.2	2.2	2.8
0518	5.7±0.30	5.2±0.20	1.6±0.2	1.1±0.30	2.5±0.30	6.2	2.2	2.8
053P	5.7±0.30	5.2±0.20	2.8±0.2	1.1±0.30	2.5±0.30	6.5	2.5	2.8
053T	4.9±0.30	4.7±0.20	2.8±0.2	1.0±0.30	1.5±0.30	7.0	3.0	2.5
0612	7.0±0.30	6.6±0.30	1.0±0.2	1.8±0.30	2.5±0.30	7.7	2.5	3.0
0615	7.0±0.30	6.6±0.30	1.3±0.2	1.8±0.30	3.0±0.30	7.7	2.5	3.5
0618	7.0±0.30	6.6±0.30	1.6±0.2	1.8±0.30	3.0±0.30	7.7	2.5	3.5
0602	7.0±0.30	6.6±0.30	1.8±0.2	1.8±0.30	3.0±0.30	7.7	2.5	3.5
0624	7.3±0.30	6.6±0.30	2.2±0.2	1.8±0.30	3.0±0.30	7.7	2.5	3.5
0603	7.3±0.30	6.6±0.30	2.8±0.2	1.8±0.30	3.0±0.30	8.4	2.5	3.5
0604	7.3±0.30	6.6±0.30	3.8±0.2	1.8±0.30	3.0±0.30	8.4	2.5	3.5
0605	7.3±0.30	6.6±0.30	4.8±0.2	1.8±0.30	3.0±0.30	8.4	2.5	3.5
0803	8.8±0.40	8.4±0.30	2.8±0.2	1.6±0.30	5.0±0.30	9.6	4.5	5.5
0840	8.8±0.40	8.4±0.30	3.8±0.2	1.6±0.30	5.0±0.30	9.6	4.5	5.5
1002	11.0±0.50	10.0±0.30	1.8±0.2	2.3±0.30	3.0±0.30	12.5	5.4	3.5
1003	11.0±0.50	10.0±0.30	2.8±0.2	2.3±0.30	3.0±0.30	13.6	5.4	3.5
1004	11.0±0.50	10.0±0.30	3.8±0.2	2.3±0.30	3.0±0.30	13.6	5.4	3.5
1005	11.0±0.50	10.0±0.30	4.8±0.2	2.3±0.30	3.0±0.30	13.6	5.4	3.5
1235	13.5±0.50	12.5±0.30	3.3±0.2	2.3±0.30	4.7±0.30	14.2	8.0	5.0
1205	13.5±0.50	12.5±0.30	4.8±0.2	2.3±0.30	4.7±0.30	14.2	8.0	5.0
1206	13.5±0.50	12.5±0.30	5.7±0.2	2.3±0.30	4.7±0.30	14.2	8.0	5.0
1265	13.5±0.50	12.5±0.30	6.2±0.3	2.3±0.30	4.7±0.30	14.2	8.0	5.0
1707	18.0 max	16.9±0.30	6.7±0.3	2.1±0.30	11.9±0.30	18.5	12.2	12.5

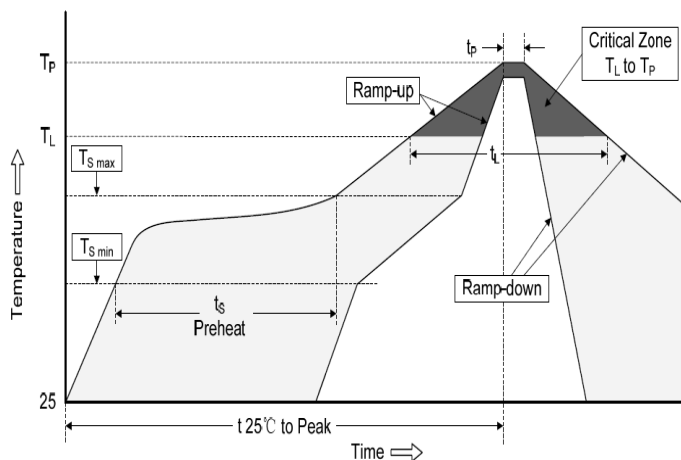
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## RECOMMENDED SOLDERING PROFILES

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    R47    M    0503    A1  
(1)        (2)        (3)        (4)        (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	0503	0503: 5.7x2.8mm                      Width x Height (mm)
(5)	Series Code	A1	High Current Molded Type                      Internal control or project reference

\*Specifications subject to change without notice.