

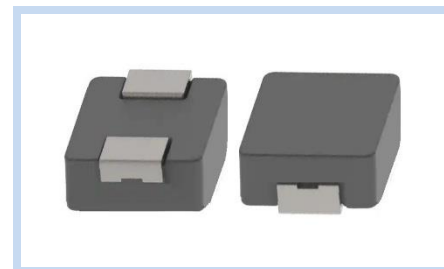
# Molded Power Inductor High Current Shielded Type

PIM-0302A1 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

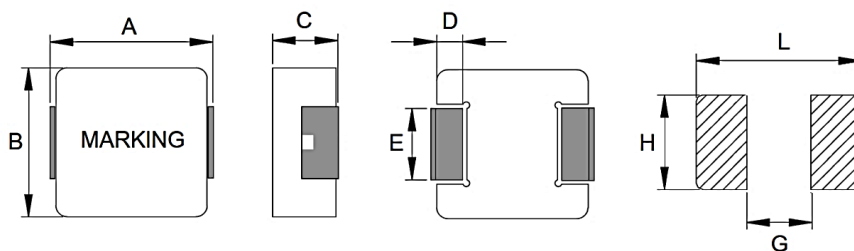
Item	Inductance (μH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	I <sub>SAT</sub> Typ. (A)	I <sub>RMS</sub> Typ. (A)
PIMR10N0302A1	0.10	±30%	6.6	9.0	14.0	10.5
PIMR22N0302A1	0.22	±30%	11.0	14.0	11.2	9.0
PIMR33M0302A1	0.33	±20%	17.0	21.0	10.0	8.0
PIMR47M0302A1	0.47	±20%	19.7	23.0	9.0	7.0
PIMR68M0302A1	0.68	±20%	25.5	29.0	7.0	5.5
PIMR82M0302A1	0.82	±20%	27.0	32.0	6.0	4.8
PIM1R0M0302A1	1.00	±20%	32.0	38.0	5.0	4.0
PIM1R5M0302A1	1.50	±20%	42.0	50.0	4.0	3.8
PIM2R2M0302A1	2.20	±20%	65.0	75.0	3.7	3.5
PIM3R3M0302A1	3.30	±20%	125	145	3.5	3.0
PIM4R7M0302A1	4.70	±20%	172	200	3.0	2.6
PIM5R6M0302A1	5.60	±20%	205	238	2.6	2.2
PIM6R8M0302A1	6.80	±20%	260	300	2.2	1.9
PIM8R2M0302A1	8.20	±20%	340	390	1.9	1.6
PIM100M0302A1	10.00	±20%	366	422	1.6	1.4

**Note:**

1. Inductance test under 100KHz, 1.0V
2. All test data referenced to 25°C ambient

3. I<sub>SAT</sub> 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°C ~ +125°C (Including Self-temperature rise)

## DIMENSIONS



(Unit: mm)

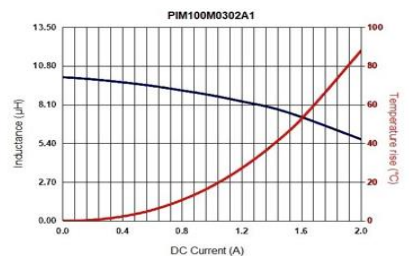
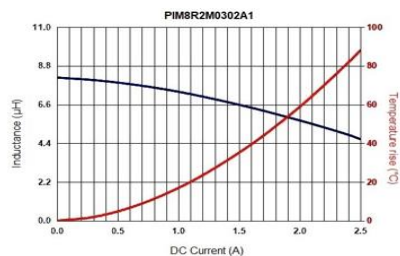
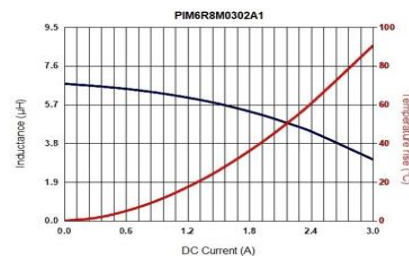
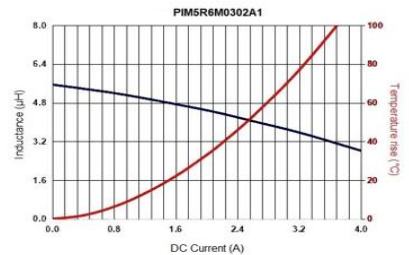
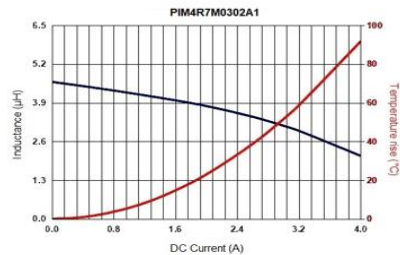
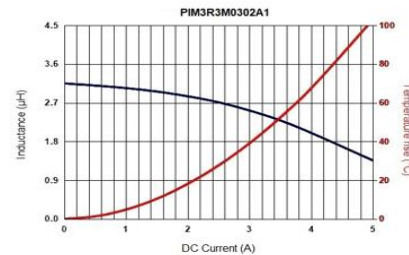
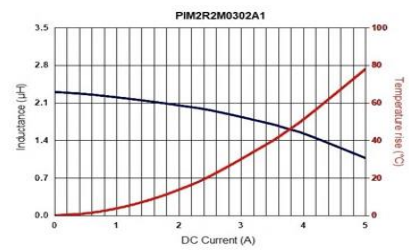
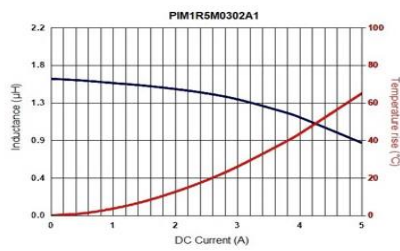
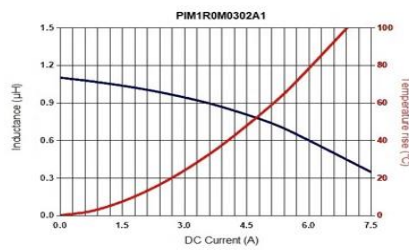
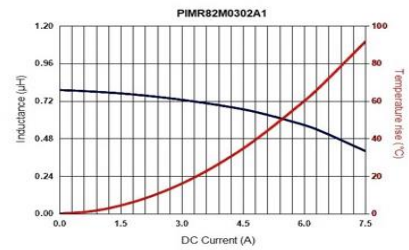
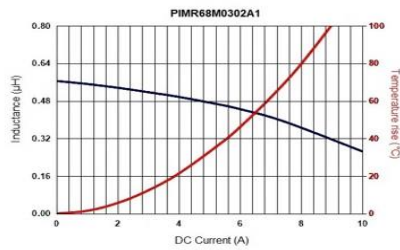
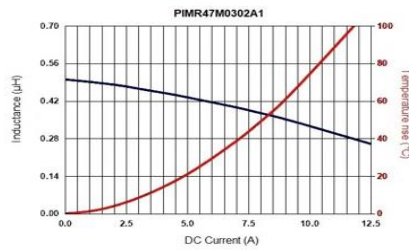
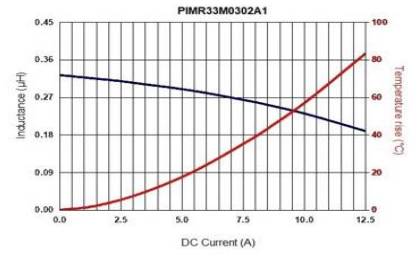
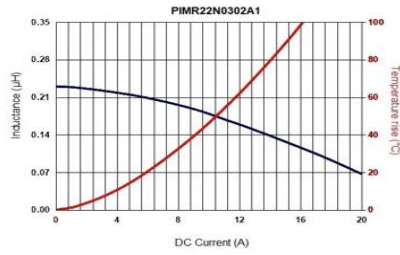
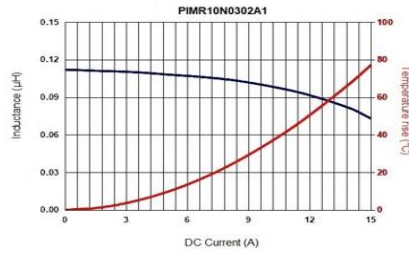
Size Code	A	B	C	D	E	L	G	H
0302	3.5±0.20	3.2±0.20	1.8±0.2	0.7±0.20	1.2±0.20	4.1	1.9	1.45

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PIM-0302A1 series

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## CHARACTERISTIC CURVES

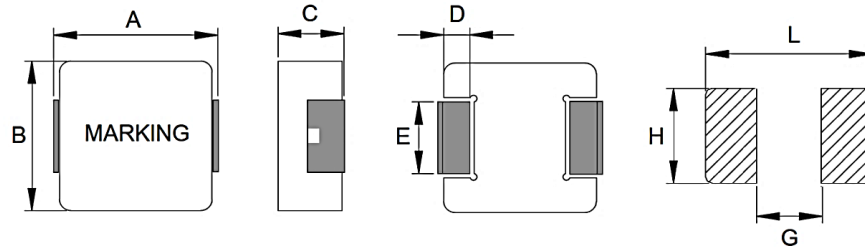


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## DIMENSIONS – PIM-A1 series



(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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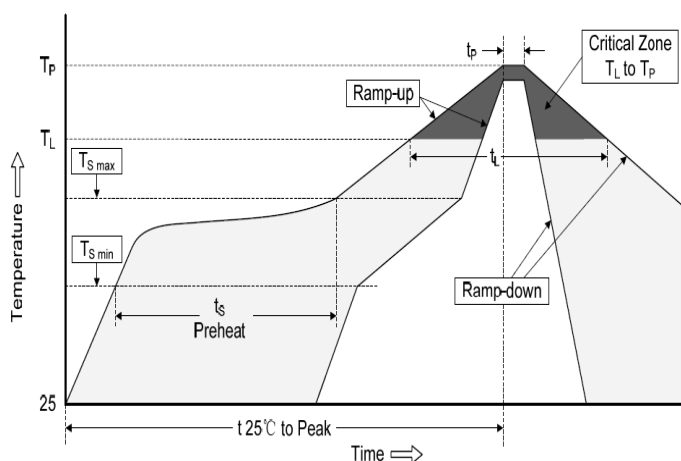
## PART NUMBERING SYSTEM

PIM (1)    R47 (2)    M (3)    0302 (4)    A1 (5)

No	Item	Code	Description	
(1)	Product Code	PIM	Power Inductor Series, Molded Surface Mount Type	
(2)	Inductance	R47	R47: 0.47 $\mu$ H	2R2: 2.2 $\mu$ H, 100: 10 $\mu$ H
(3)	Tolerance	M	M: $\pm$ 20%	N: $\pm$ 30%
(4)	Size Code	0302	0302: 3.5x1.8mm	Width x Height (mm)
(5)	Series Code	A1	High Current Molded Type	

## 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.



\*Specifications subject to change without notice.