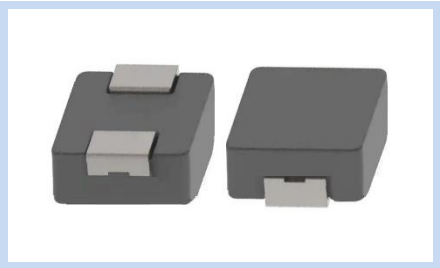
Molded Power Inductor
High Current AEC-Q200

PIM-0302MA1 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



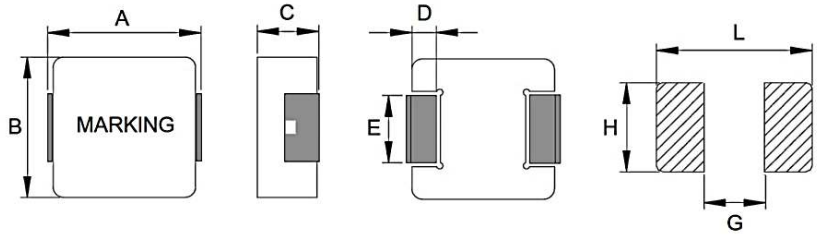
RoHS

ELECTRICAL CHARACTERISTICS

Item	Inductance (µH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	I_{SAT} Typ. (A)	I_{RMS} Typ. (A)
PIMR10N0302MA1	0.10	±30%	6.6	9	14.0	10.5
PIMR22N0302MA1	0.22	±30%	11.0	14	11.2	9.0
PIMR33M0302MA1	0.33	±20%	17.0	21	10.0	8.0
PIMR47M0302MA1	0.47	±20%	19.7	23	9.0	7.0
PIMR68M0302MA1	0.68	±20%	25.5	29	7.0	5.5
PIMR82M0302MA1	0.82	±20%	27	32	6.0	4.8
PIM1R0M0302MA1	1.0	±20%	32	38	5.0	4.0
PIM1R5M0302MA1	1.5	±20%	42	50	4.0	3.8
PIM2R2M0302MA1	2.2	±20%	65	75	3.7	3.5
PIM3R3M0302MA1	3.3	±20%	125	145	3.5	3.0
PIM4R7M0302MA1	4.7	±20%	172	200	3.0	2.6
PIM5R6M0302MA1	5.6	±20%	205	238	2.6	2.2
PIM6R8M0302MA1	6.8	±20%	260	300	2.2	1.9
PIM8R2M0302MA1	8.2	±20%	340	390	1.9	1.6
PIM100M0302MA1	10	±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_{SAT} based on inductance drop (ΔL/L0: ≦30%) approximately
4. I_{RMS} based on temperature rise (ΔT: 40 ˚C) approximately
5. Operating temperature: -55°C ~ +125°C (Including Self-temperature rise)

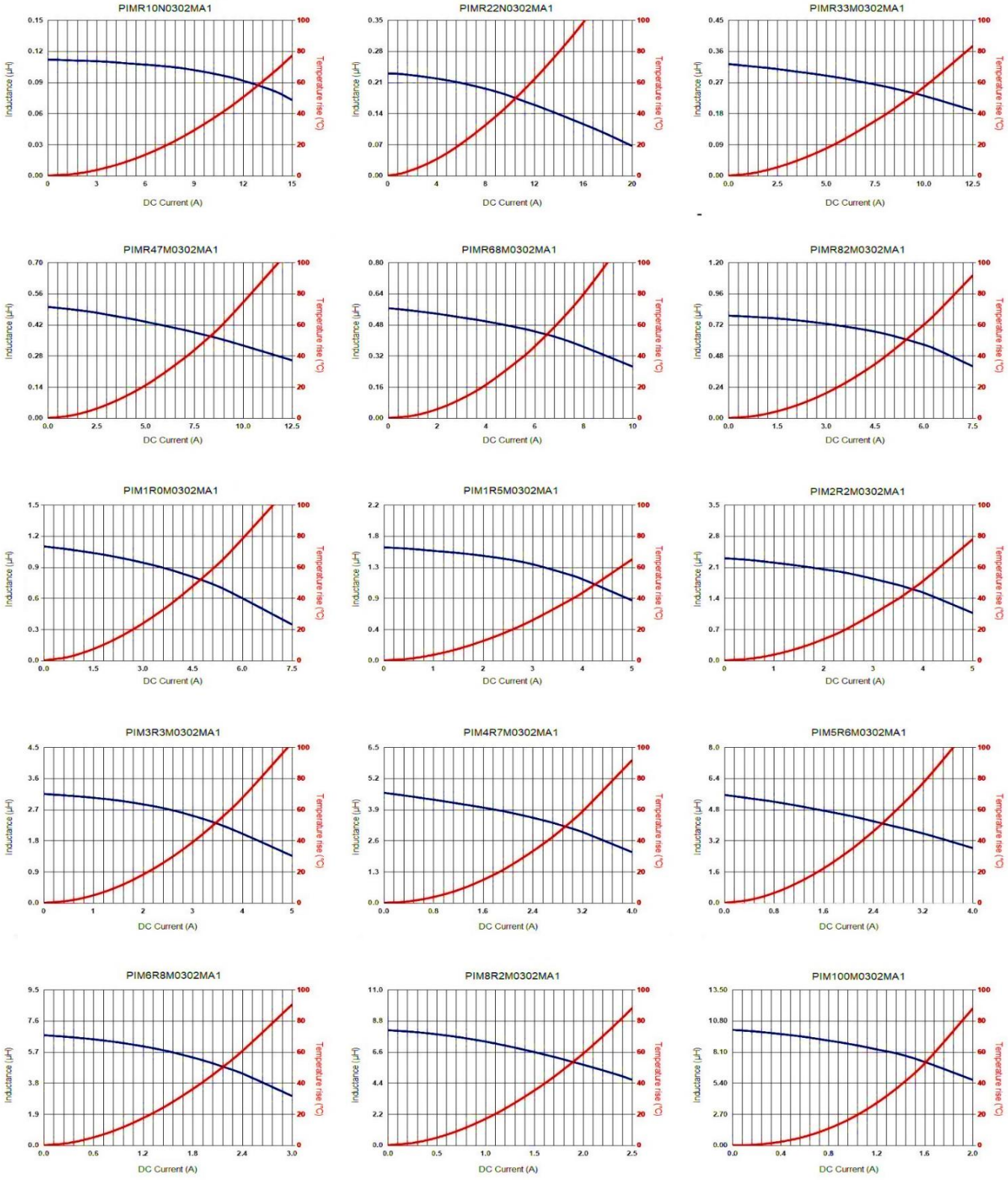
DIMENSIONS



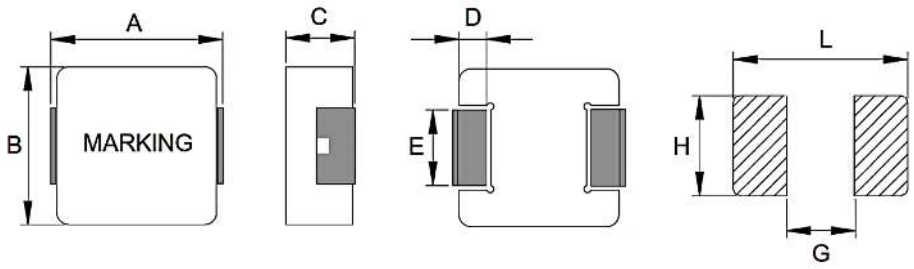
(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
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

CHARACTERISTIC CURVES



DIMENSIONS – PIM-MA1 series

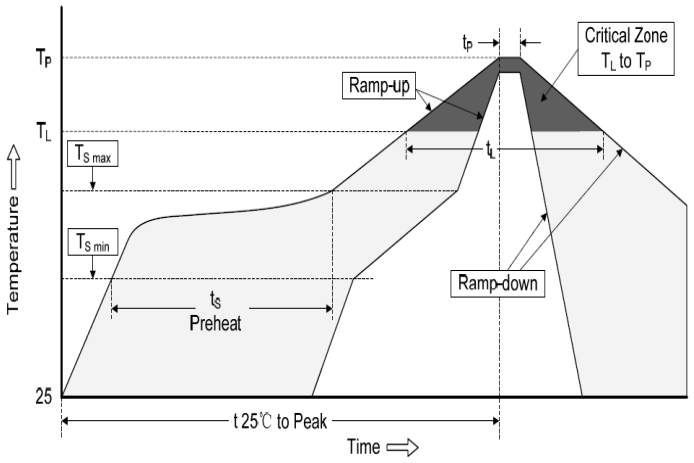


(Unit: mm)

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	3	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
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	Spec table	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	5
1206	13.5±0.5	12.5±0.3	5.7±0.3	2.3±0.3	4.7±0.3	14.2	8	5
1235	13.5±0.5	12.5±0.3	3.3±0.2	2.3±0.3	4.7±0.3	14.2	8	5
1265	13.5±0.5	12.5±0.3	6.2±0.3	2.3±0.3	4.7±0.3	14.2	8	5
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

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	0302	MA1
(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**	0302	0302: 3.5 x1.8mm	Width x Height (mm)
(5)	**Series Code**	MA1	High Current AEC-Q200	

*Specifications subject to change without notice.