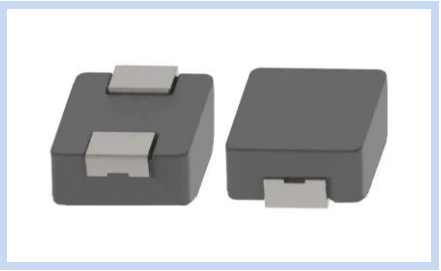
Molded Power Inductor
High Current AEC-Q200

PIM-1770MA1 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)
PIMR45M1770MA1	0.45	±20%	0.80	0.96	125	62.0
PIMR47M1770MA1	0.47	±20%	0.95	1.03	123	62.0
PIM1R0M1770MA1	1.0	±20%	1.60	2.00	70	52.0
PIM1R5M1770MA1	1.5	±20%	2.00	2.50	65	47.0
PIM2R2M1770MA1	2.2	±20%	2.40	2.70	62	43.5
PIM3R3M1770MA1	3.3	±20%	3.50	3.90	54	28.0
PIM4R7M1770MA1	4.7	±20%	4.80	5.50	50	25.0
PIM5R6M1770MA1	5.6	±20%	5.80	7.05	45	21.0
PIM6R8M1770MA1	6.8	±20%	8.40	9.20	39	19.0
PIM8R2M1770MA1	8.2	±20%	9.60	10.8	31	18.0
PIM100M1770MA1	10	±20%	11.8	13.0	29	16.5
PIM150M1770MA1	15	±20%	17.8	20.5	27	12.5
PIM220M1770MA1	22	±20%	25.1	26.5	23	12.0
PIM330M1770MA1	33	±20%	38.0	44.0	20	10.7
PIM470M1770MA1	47	±20%	48.0	55.0	16	8.7
PIM560M1770MA1	56	±20%	54.0	62.0	15	7.8
PIM680M1770MA1	68	±20%	68.0	80.0	13	7.0
PIM820M1770MA1	82	±20%	87.0	100	12	5.7
PIM101M1770MA1	100	±20%	102	118	12	5.3

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)

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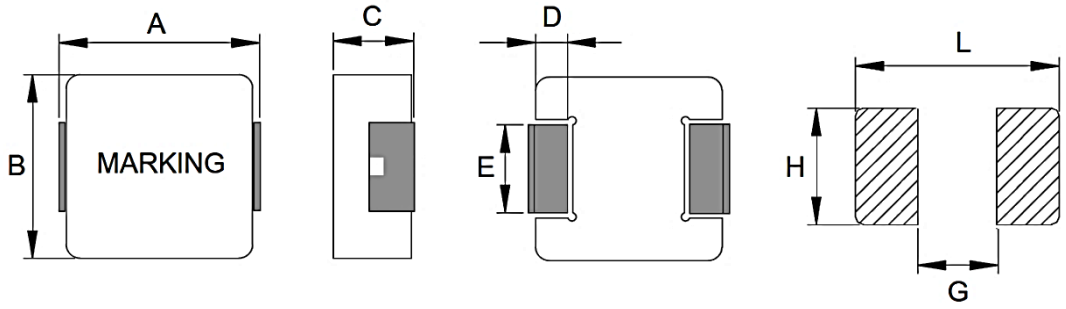
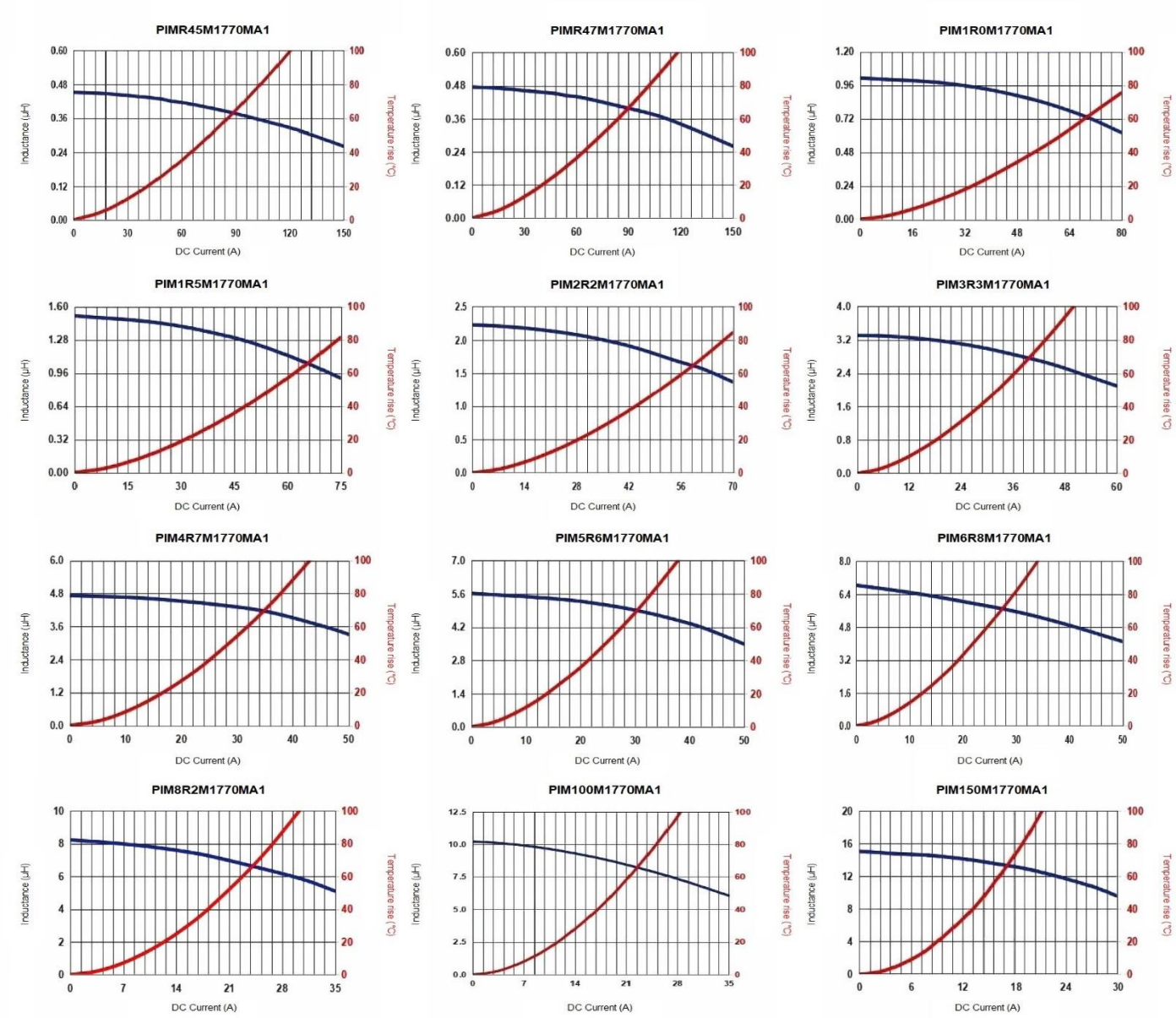
DIMENSIONS



(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
1770	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

CHARACTERISTIC CURVES



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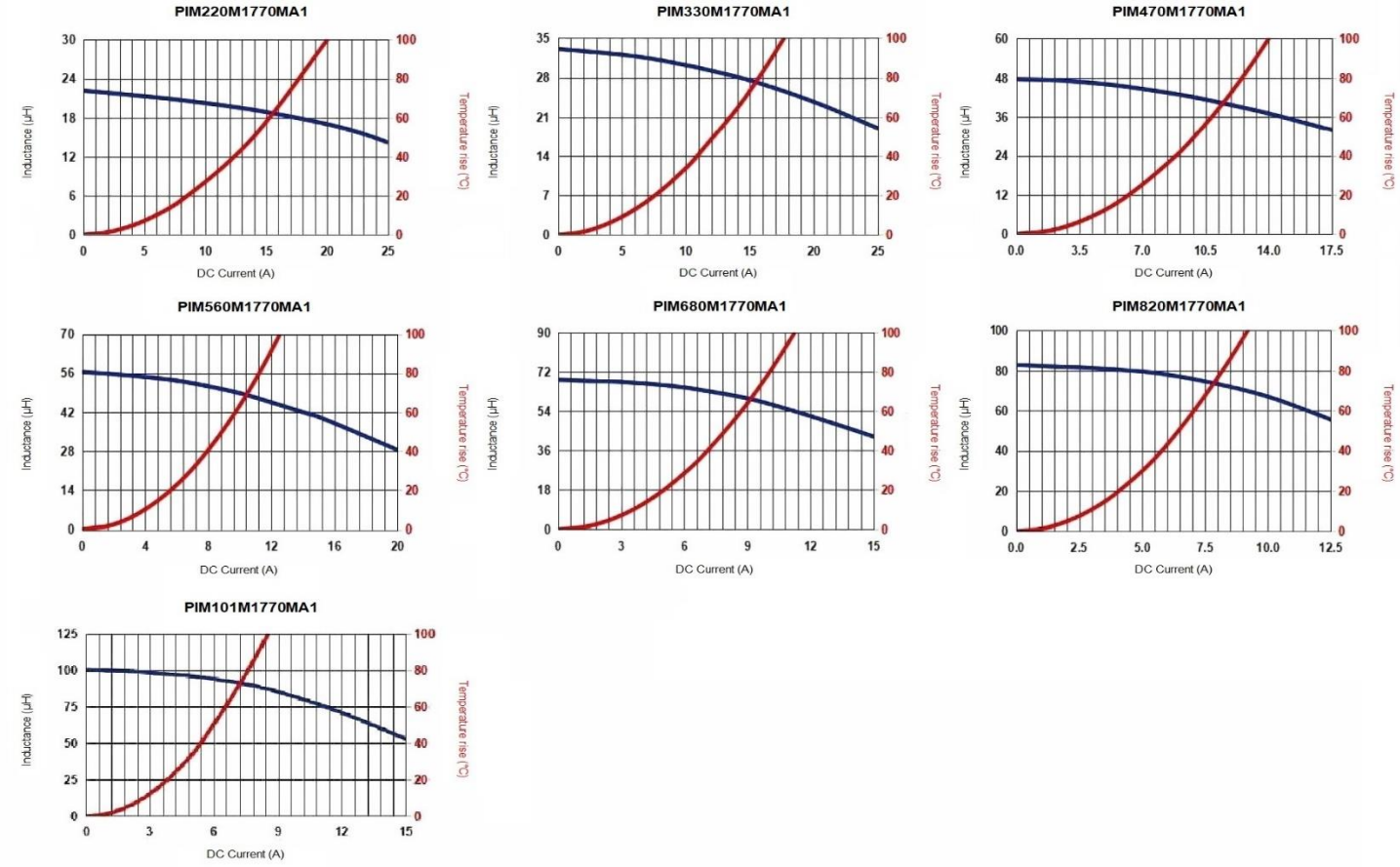
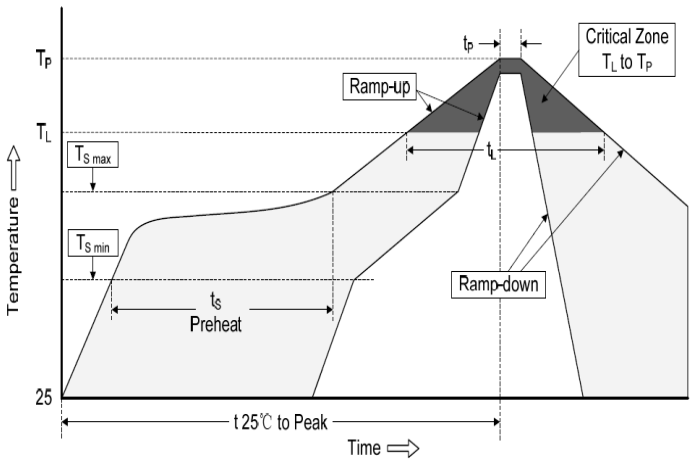
CHARACTERISTIC CURVES



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.



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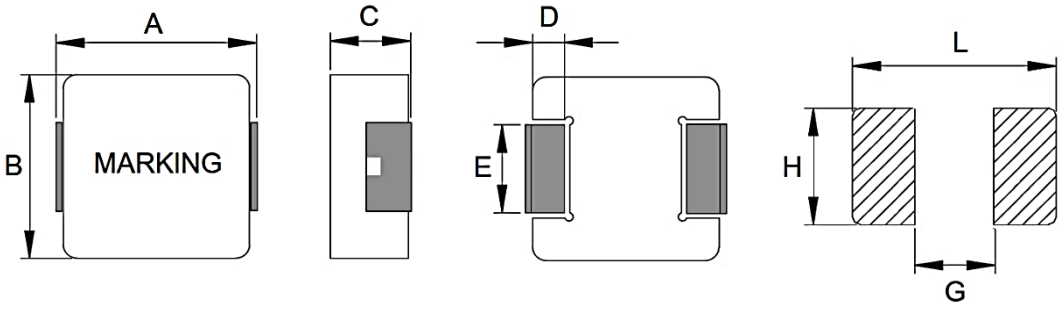
PART NUMBERING SYSTEM

PIM	1R0	M	1770	MA1
(1)	(2)	(3)	(4)	(5)

No	item	Code	Description	
(1)	**Product Code**	PIM	Power Inductor Series, Molded Surface Mount 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**	1770	1770: 18.0x6.7mm	Width x Height (mm)
(5)	**Series Code**	MA1	High Current AEC-Q200	Internal control or project reference

DIMENSIONS – PIM-MA1 series



(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
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
0620	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
0630	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
0640	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
0650	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
8030	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
8040	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
1020	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
1030	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
1040	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
1050	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
1250	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
1260	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
1770	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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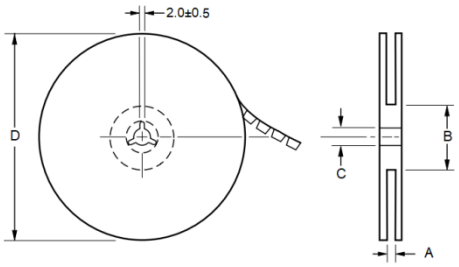
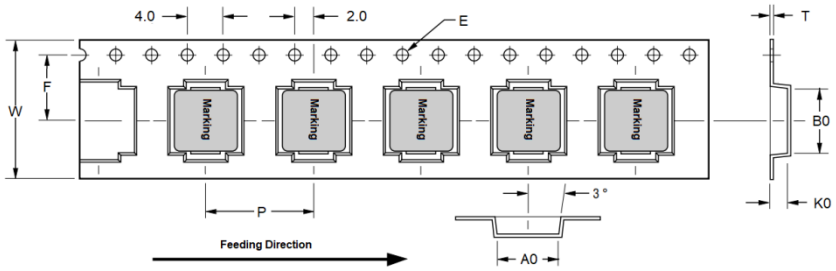
PACKAGING DIMENSION – PIM-MA1 series

REEL DIMENSION



TAPE DIMENSION



Size Code	Reel Dimension (mm)				Tape Dimensions (mm)								Qty
	A +2/-0	B ±2.0	C ±0.5	D	W ±0.3	F ±0.1	P ±0.1	E ±0.1	A0 ±0.1	B0 ±0.1	K0 ±0.1	T ±0.05	13”
0612	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	1.5	0.35	3000
0615	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	1.8	0.35	2000
0618	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	2.1	0.35	2000
0620	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	2.3	0.35	1500
0624	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	2.7	0.35	1500
0630	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	3.3	0.35	1000
0640	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	4.3	0.35	1000
0650	16.4	100	13.5	330	16.0	7.5	12.0	1.5	7.0	7.7	5.3	0.35	800
8030	24.4	100	13.5	330	24.0	11.5	16.0	1.5	8.9	10.1	3.3	0.35	1000
8040	24.4	100	13.5	330	24.0	11.5	16.0	1.5	8.9	10.1	4.5	0.35	800
1020	24.4	100	13.5	330	24.0	11.5	16.0	1.5	8.9	10.1	2.3	0.35	500
1030	24.4	100	13.5	330	24.0	11.5	16.0	1.5	8.9	10.1	3.3	0.35	500
1040	24.4	100	13.5	330	24.0	11.5	16.0	1.5	10.4	11.6	4.5	0.35	500
1050	24.4	100	13.5	330	24.0	11.5	16.0	1.5	10.4	11.6	5.3	0.35	500
1235	24.4	100	13.5	330	24.0	11.5	16.0	1.5	12.9	14.1	4.0	0.35	500
1250	24.4	100	13.5	330	24.0	11.5	16.0	1.5	12.9	14.1	5.5	0.35	500
1260	24.4	100	13.5	330	24.0	11.5	16.0	1.5	12.9	14.1	6.5	0.35	500
1265	24.4	100	13.5	330	24.0	11.5	16.0	1.5	13.0	14.2	7.0	0.35	500
1770	32.4	100	13.5	330	32.0	14.2	24.0	1.5	17.5	18.5	7.5	0.50	200

*Specifications subject to change without notice.