

Molded Power Inductor

High Current Low DCR AEC-Q200

PIM-0420BMA2 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



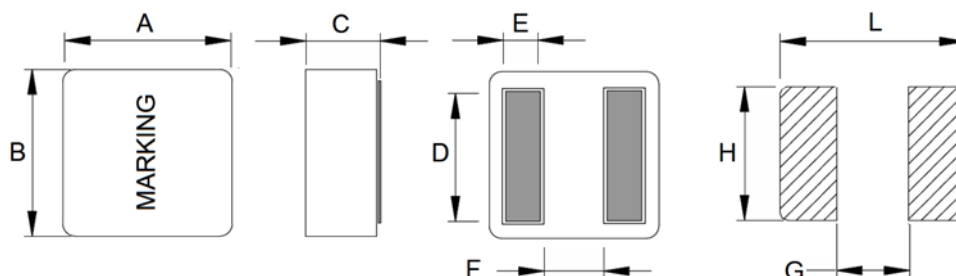
ELECTRICAL CHARACTERISTICS

Item	Inductance (μH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	I _{SAT} Typ. (A)	I _{RMS} (A)	
						20°C Rise	40°C Rise
PIMR10M0420BMA2	0.10	±20%	2.20	2.42	38.00	13.50	18.00
PIMR22M0420BMA2	0.22	±20%	4.10	4.60	19.50	13.00	16.80
PIMR33M0420BMA2	0.33	±20%	5.00	5.50	18.00	12.00	15.50
PIMR36M0420BMA2	0.36	±20%	5.60	6.30	17.00	11.00	14.50
PIMR40M0420BMA2	0.40	±20%	6.90	7.73	15.50	10.00	14.00
PIMR47M0420BMA2	0.47	±20%	7.80	8.58	14.50	9.00	12.50
PIMR56M0420BMA2	0.56	±20%	8.40	9.30	14.00	8.50	12.00
PIMR60M0420BMA2	0.60	±20%	8.60	9.52	13.70	8.00	11.70
PIMR72M0420BMA2	0.72	±20%	10.40	11.60	12.00	7.60	10.50
PIM1R0M0420BMA2	1.00	±20%	13.30	14.60	9.60	6.80	9.60
PIM1R2M0420BMA2	1.20	±20%	16.20	17.90	9.00	6.60	9.00
PIM1R5M0420BMA2	1.50	±20%	21.00	23.50	8.00	5.80	7.60
PIM1R8M0420BMA2	1.80	±20%	25.00	28.00	7.50	5.20	7.00

Note:

1. Inductance test under 100KHz, 0.1V
2. All test data referenced to 25°C ambient
3. I_{SAT} based on inductance change (ΔL/L0: ≤30%) approximately
4. Operating temperature: -55°C ~ +155°C (Including Self-temperature rise)

DIMENSIONS



(Unit: mm)

Size Code	A	B	C	D	E	F	H	G	L
0420B	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

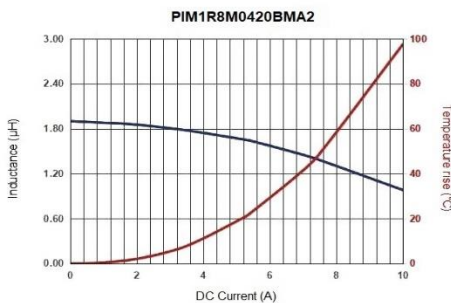
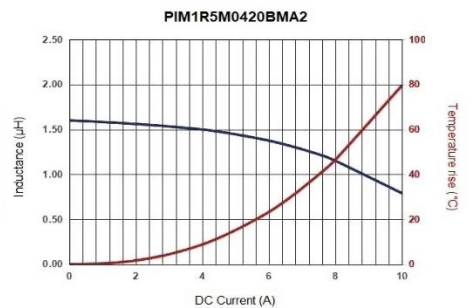
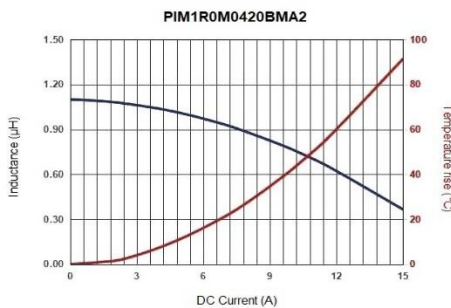
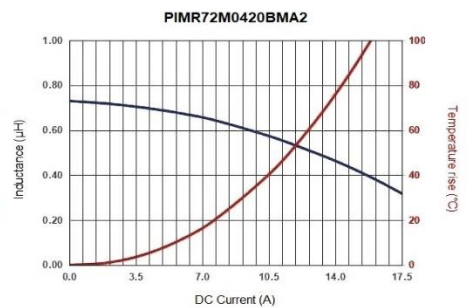
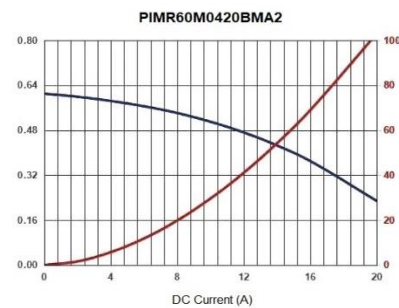
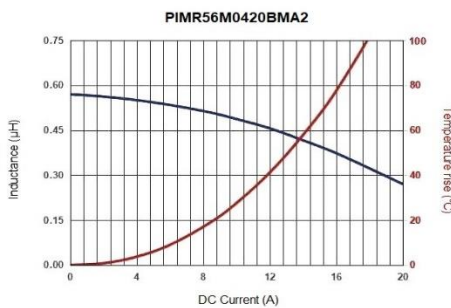
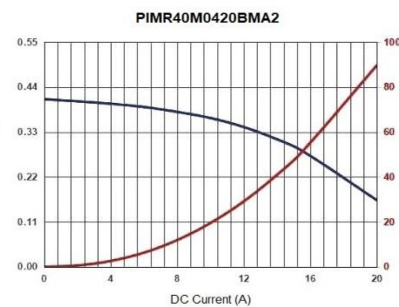
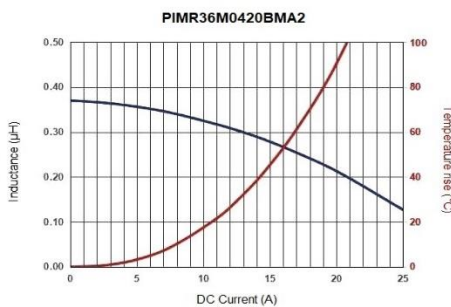
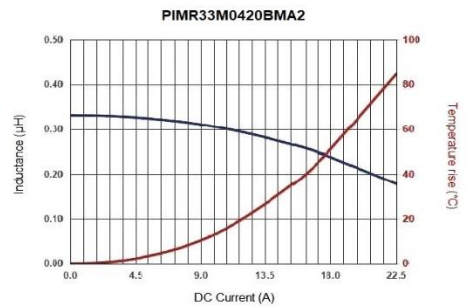
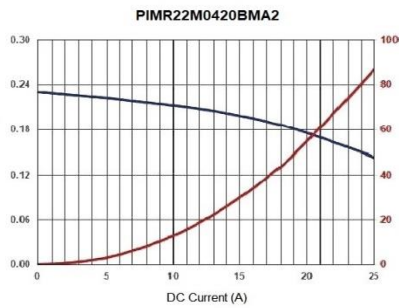
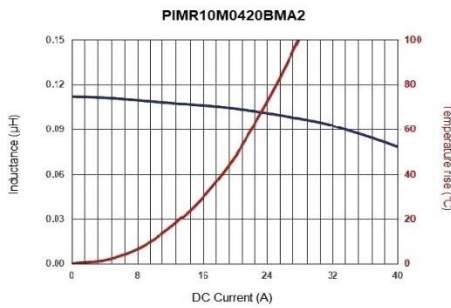
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CRARACTERISTIC CURVES



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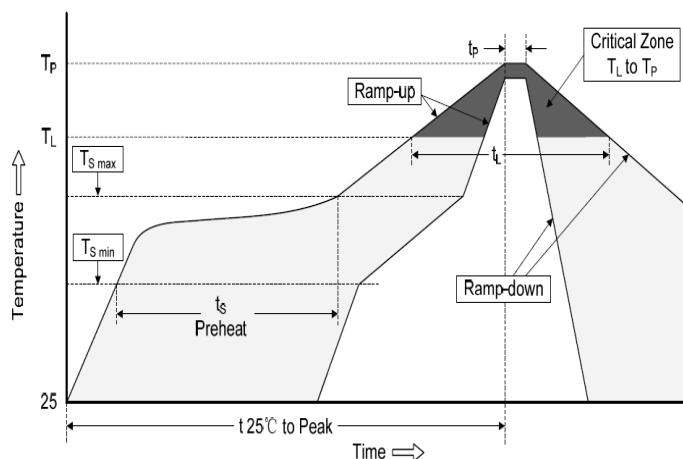
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RECOMMENDED SOLDERING PROFILES

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 0420B MA2
 (1) (2) (3) (4) (5)

No	item	Code	Description	
(1)	Meritek Series	PIM	Power Inductor Series High Current Molded Type	
(2)	Inductance	1R0	1R0: 1.0μH	R47: 0.47μR, 2R2: 2.2μR, 100: 10μR
(3)	Tolerance	M	M: ±20%	+20% ~ -20%
(4)	Size Code	0420B	0420B: 4.4 x 1.9mm	Width x Height (mm)
(5)	Internal Code	MA2	High Current Low RDC AEC-Q200 Type	Internal control or project reference

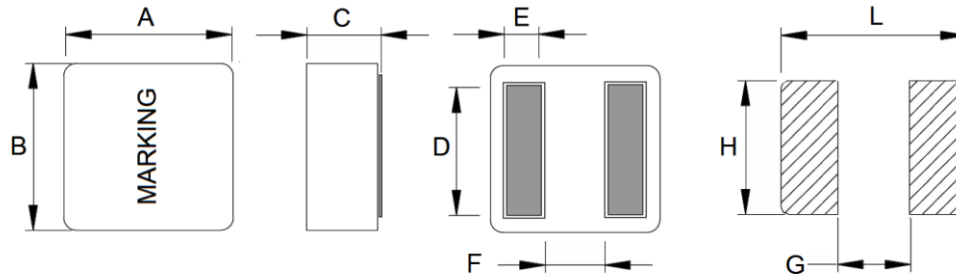
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PIM-0420BMA2 series

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DIMENSIONS – PIM-MA2 series



(Unit: mm)

Size Code	A	B	C	D	E	F	H	G	L
0420A/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
0420B/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
0430R	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
0430L	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
0520A	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
0520B	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
0530A	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
0530B	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
0550R	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
0550L	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
0630A	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
0630B	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
0640B	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
0650A	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
0650B	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
0660R	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
0660B/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
0720A	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
0720B	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
0730A	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
0730B	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
0750A	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
0750B	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
0770A	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
0770B	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
0880B	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
1060B	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
1580A	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
1580B	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

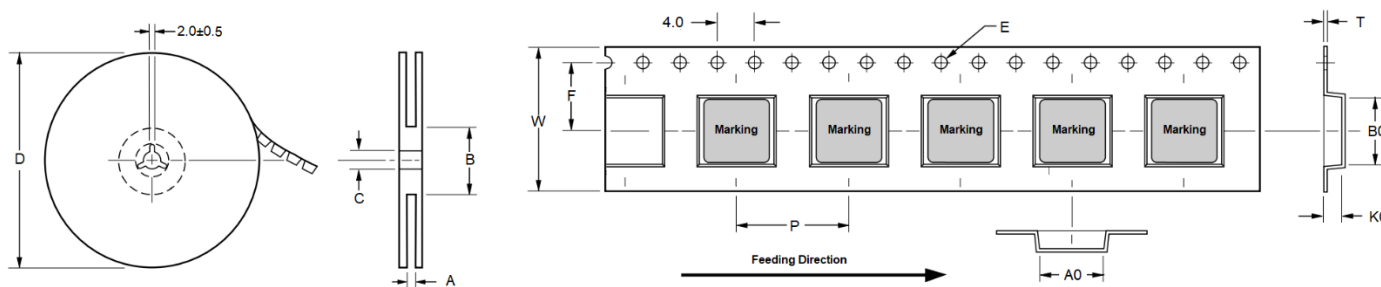
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PACKAGING DIMENSION



Size Code	Reel Dimension (mm)				Tape Dimensions (mm)								Qty 13"
	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 ±0.1	
0420	12.4	100	13	330	12.0	5.5	8.0	1.5	4.7	4.7	2.3	0.35	3000
0430	12.4	100	13	330	12.0	5.5	8.0	1.5	4.7	4.7	3.3	0.35	2000
0520	12.4	100	13	330	12.0	5.5	8.0	1.5	6.4	6.1	2.3	0.35	3000
0530	16.4	100	13	330	16.0	7.5	8.0	1.5	6.4	6.1	3.3	0.35	2000
0550	16.4	100	13	330	16.0	7.5	8.0	1.5	6.4	6.1	5.3	0.35	1500
0630	16.4	100	13	330	16.0	7.5	12.0	1.5	7.6	7.3	3.3	0.35	1000
0640	16.4	100	13	330	16.0	7.5	12.0	1.5	7.6	7.3	4.3	0.35	800
0650	16.4	100	13	330	16.0	7.5	12.0	1.5	7.6	7.3	5.3	0.35	800
0660	16.4	100	13	330	16.0	7.5	12.0	1.5	7.6	6.3	6.3	0.35	750
0720	16.4	100	13	330	16.0	7.5	12.0	1.5	8.8	8.4	2.3	0.35	2000
0730	16.4	100	13	330	16.0	7.5	12.0	1.5	8.8	8.4	3.3	0.35	1500
0750	16.4	100	13	330	16.0	7.5	12.0	1.5	8.8	8.4	5.3	0.35	800
0770	16.4	100	13	330	16.0	7.5	12.0	1.5	8.8	8.4	7.3	0.35	700
0880	24.4	100	13	330	24.0	7.5	16.0	1.5	9.4	8.9	8.5	0.35	450
1060	24.4	100	13	330	24.0	11.5	16.0	1.5	12.4	11.5	6.3	0.35	500
1010	24.4	100	13	330	24.0	11.5	16.0	1.5	12.4	11.5	10.3	0.35	300
1031	24.4	100	13	330	24.0	11.5	16.0	1.5	12.4	11.5	3.3	0.35	1000
1580	32.4	100	13	330	32.0	14.2	24.0	1.5	18.0	17.0	8.5	0.50	200
1510	32.4	100	13	330	32.0	14.2	24.0	1.5	18.0	17.0	10.5	0.50	150
1513	32.4	100	13	330	32.0	14.2	24.0	1.5	18.0	17.0	13.6	0.50	100

*Specifications subject to change without notice.