

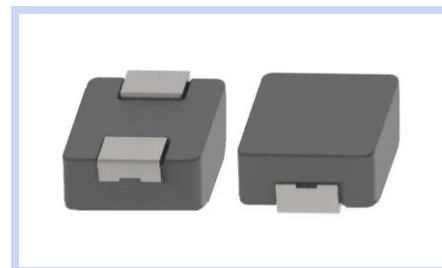
Molded Power Inductor High Current AEC-Q200

PIM-0618MA1 series

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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



ELECTRICAL CHARACTERISTICS

Item	Inductance (μH)	Tolerance (%)	DCR Typ. (mΩ)	DCR Max. (mΩ)	I _{SAT} Typ. (A)	I _{RMS} Typ. (A)
PIMR10N0618MA1	0.10	±30%	2.1	2.5	45.0	18.0
PIMR15M0618MA1	0.15	±20%	2.2	2.6	34.0	18.0
PIMR15N0618MA1	0.15	±30%	2.2	2.6	34.0	18.0
PIMR22M0618MA1	0.22	±20%	2.5	3.0	26.0	16.0
PIMR33M0618MA1	0.33	±20%	4.8	5.8	22.0	14.0
PIMR47M0618MA1	0.47	±20%	6.4	7.4	18.0	12.0
PIMR56M0618MA1	0.56	±20%	8.5	10.0	17.5	11.0
PIMR68M0618MA1	0.68	±20%	9.5	11.0	17.0	10.0
PIMR82M0618MA1	0.82	±20%	11.5	14.0	15.5	8.5
PIM1R0M0618MA1	1.0	±20%	14.5	17.0	14.0	7.0
PIM1R5M0618MA1	1.5	±20%	21.0	25.2	13.0	6.0
PIM2R2M0618MA1	2.2	±20%	31.0	35.0	11.0	6.0
PIM3R3M0618MA1	3.3	±20%	40.0	46.0	9.0	5.0
PIM4R7M0618MA1	4.7	±20%	68.0	76.0	7.0	4.0
PIM5R6M0618MA1	5.6	±20%	78.0	86.0	6.0	3.5
PIM6R8M0618MA1	6.8	±20%	93.0	104	5.5	3.0
PIM8R2M0618MA1	8.2	±20%	123	140	4.5	2.6
PIM100M0618MA1	10	±20%	143	160	3.5	2.3
PIM150M0618MA1	15	±20%	240	280	3.0	2.0
PIM220M0618MA1	22	±20%	300	360	2.5	1.8

Note:

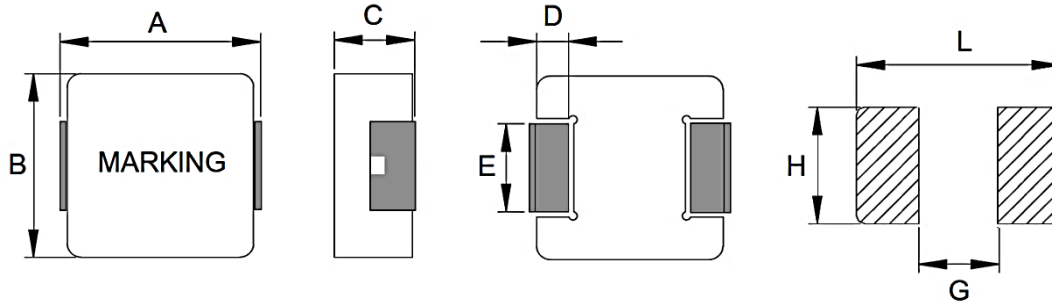
1. Inductance test under 100KHz, 1.0V
2. All test data referenced to 25°C ambient
3. I_{SAT} based on inductance drop ($\Delta L/L_0 \leq 30\%$) approximately
4. I_{RMS} based on temperature rise ($\Delta T: 40^\circ\text{C}$) approximately
5. Operating temperature: -55°C ~ +125°C (Including Self-temperature rise)

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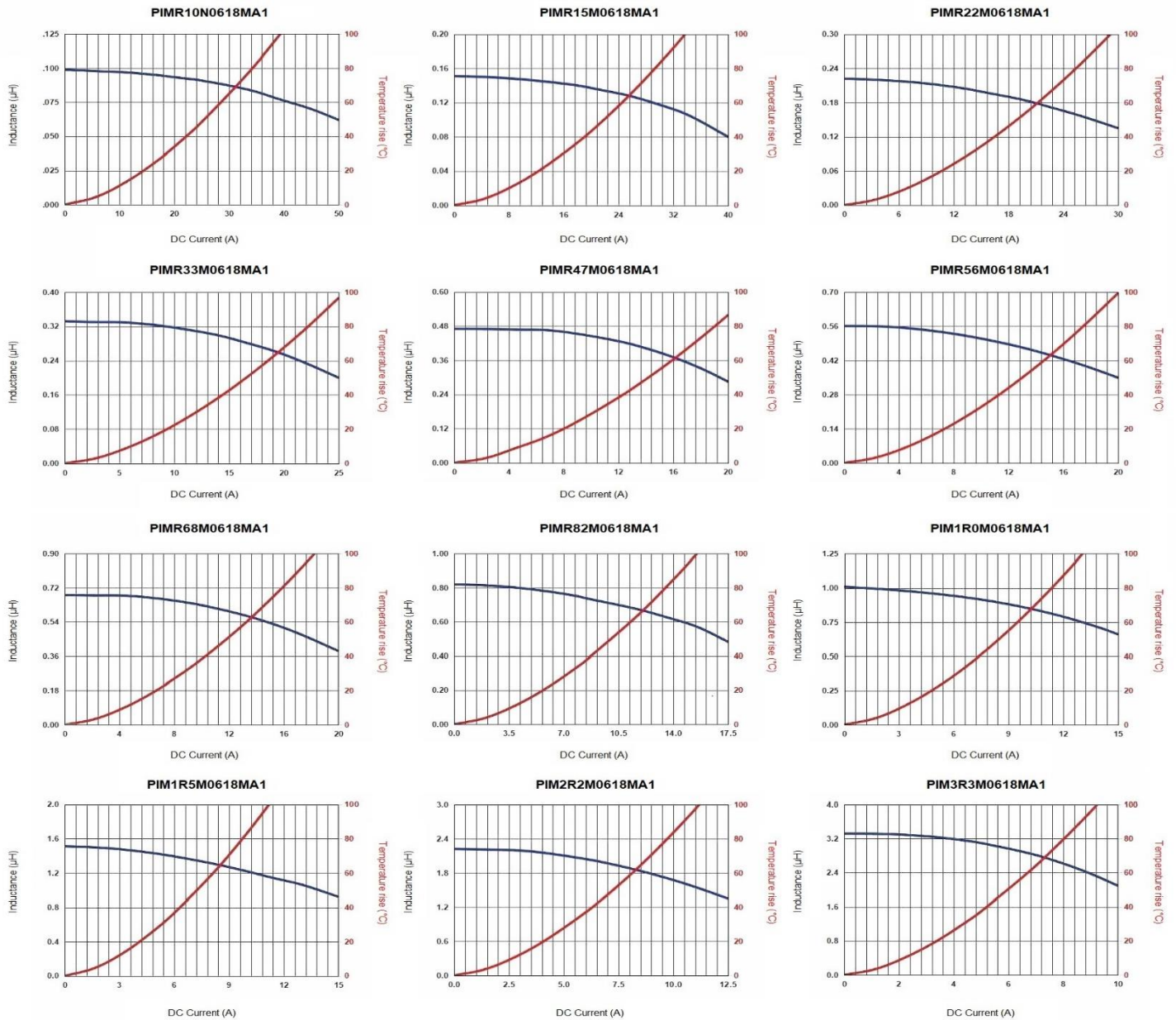
DIMENSIONS



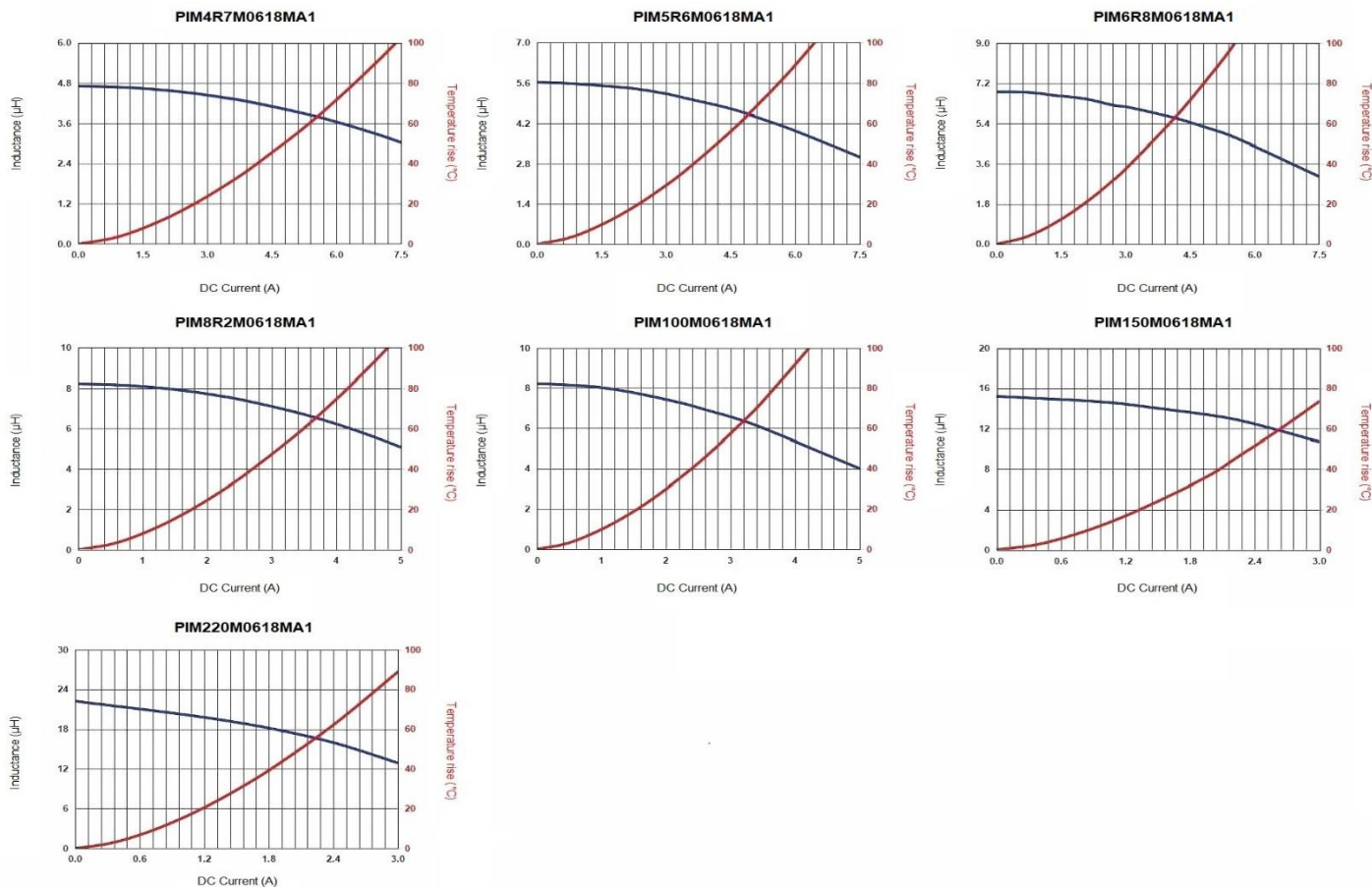
(Unit: mm)

Size Code	A	B	C	D	E	L	G	H
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

CHARACTERISTIC CURVES

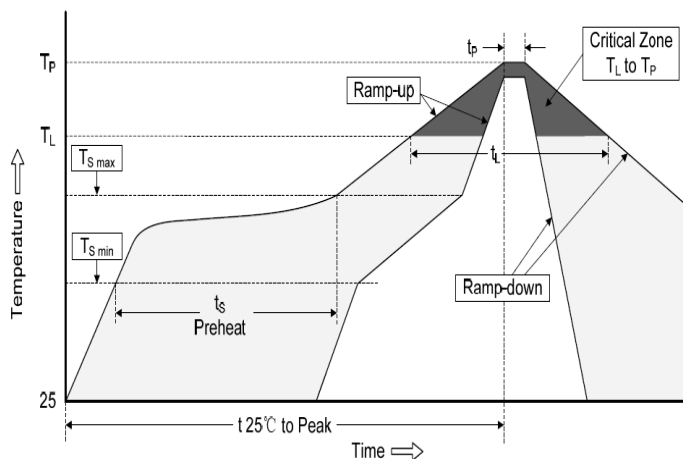


CHARACTERISTIC CURVES



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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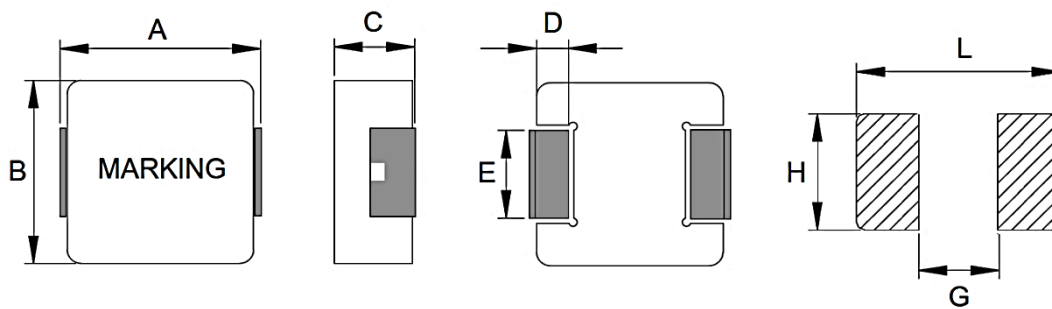
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PART NUMBERING SYSTEM

PIM (1) **1R0** (2) **M** (3) **0618** (4) **MA1** (5)

No	item	Code	Description	
(1)	Product Code	PIM	Power Inductor Series, Molded Surface Mount Type	
(2)	Inductance	1R0	1R0: 1.0 μ H	R47: 0.47 μ H, 2R2: 2.2 μ H, 100: 10 μ H
(3)	Tolerance	M	M: \pm 20%	N: \pm 30%
(4)	Size Code	0618	0618: 7.0x1.6mm	Width x Height (mm)
(5)	Series Code	MA1	High Current AEC-Q200	Internal control or project reference

DIMENSIONS – PIM-MA1 series



(Unit: mm)

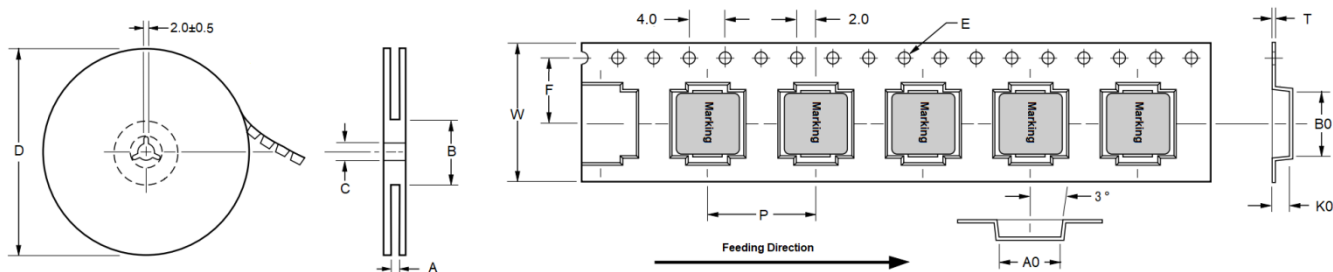
Size Code	A	B	C	D	E	L	G	H
0612	7.0 \pm 0.30	6.6 \pm 0.30	1.0 \pm 0.2	1.8 \pm 0.30	2.5 \pm 0.30	7.7	2.5	3.0
0615	7.0 \pm 0.30	6.6 \pm 0.30	1.3 \pm 0.2	1.8 \pm 0.30	3.0 \pm 0.30	7.7	2.5	3.5
0618	7.0 \pm 0.30	6.6 \pm 0.30	1.6 \pm 0.2	1.8 \pm 0.30	3.0 \pm 0.30	7.7	2.5	3.5
0620	7.0 \pm 0.30	6.6 \pm 0.30	1.8 \pm 0.2	1.8 \pm 0.30	3.0 \pm 0.30	7.7	2.5	3.5
0624	7.3 \pm 0.30	6.6 \pm 0.30	2.2 \pm 0.2	1.8 \pm 0.30	3.0 \pm 0.30	7.7	2.5	3.5
0630	7.3 \pm 0.30	6.6 \pm 0.30	2.8 \pm 0.2	1.8 \pm 0.30	3.0 \pm 0.30	8.4	2.5	3.5
0640	7.3 \pm 0.30	6.6 \pm 0.30	3.8 \pm 0.2	1.8 \pm 0.30	3.0 \pm 0.30	8.4	2.5	3.5
0650	7.3 \pm 0.30	6.6 \pm 0.30	4.8 \pm 0.2	1.8 \pm 0.30	3.0 \pm 0.30	8.4	2.5	3.5
8030	8.8 \pm 0.40	8.4 \pm 0.30	2.8 \pm 0.2	1.6 \pm 0.30	5.0 \pm 0.30	9.6	4.5	5.5
8040	8.8 \pm 0.40	8.4 \pm 0.30	3.8 \pm 0.2	1.6 \pm 0.30	5.0 \pm 0.30	9.6	4.5	5.5
1020	11.0 \pm 0.50	10.0 \pm 0.30	1.8 \pm 0.2	2.3 \pm 0.30	3.0 \pm 0.30	12.5	5.4	3.5
1030	11.0 \pm 0.50	10.0 \pm 0.30	2.8 \pm 0.2	2.3 \pm 0.30	3.0 \pm 0.30	13.6	5.4	3.5
1040	11.0 \pm 0.50	10.0 \pm 0.30	3.8 \pm 0.2	2.3 \pm 0.30	3.0 \pm 0.30	13.6	5.4	3.5
1050	11.0 \pm 0.50	10.0 \pm 0.30	4.8 \pm 0.2	2.3 \pm 0.30	3.0 \pm 0.30	13.6	5.4	3.5
1235	13.5 \pm 0.50	12.5 \pm 0.30	3.3 \pm 0.2	2.3 \pm 0.30	4.7 \pm 0.30	14.2	8.0	5.0
1250	13.5 \pm 0.50	12.5 \pm 0.30	4.8 \pm 0.2	2.3 \pm 0.30	4.7 \pm 0.30	14.2	8.0	5.0
1260	13.5 \pm 0.50	12.5 \pm 0.30	5.7 \pm 0.2	2.3 \pm 0.30	4.7 \pm 0.30	14.2	8.0	5.0
1265	13.5 \pm 0.50	12.5 \pm 0.30	6.2 \pm 0.3	2.3 \pm 0.30	4.7 \pm 0.30	14.2	8.0	5.0
1770	18.0 max	16.9 \pm 0.30	6.7 \pm 0.3	2.1 \pm 0.30	11.9 \pm 0.30	18.5	12.2	12.5

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PACKAGING DIMENSION – PIM-MA1 series



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 ±0.05	
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.