

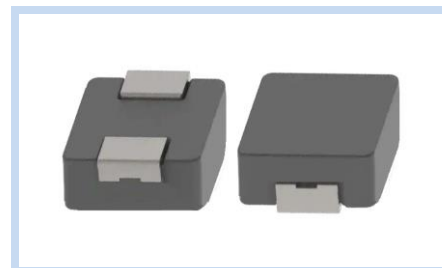
Molded Power Inductor High Current AEC-Q200

PIM-1235MA1 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



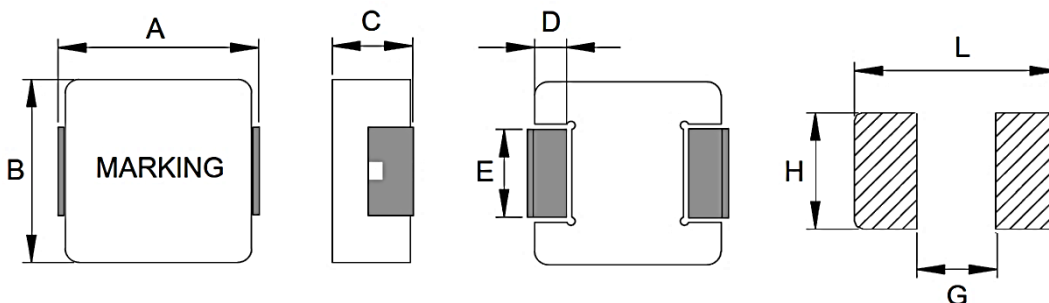
ELECTRICAL CHARACTERISTICS

| Item | Inductance (μH) | Tolerance (%) | DCR Typ. (mΩ) | DCR Max. (mΩ) | I _{SAT} Typ. (A) | I _{RMS} Typ. (A) |
|----------------|-----------------|---------------|---------------|---------------|---------------------------|---------------------------|
| PIM1R0M1235MA1 | 1.0 | ±20% | 2.7 | 3.5 | 40 | 24.0 |
| PIM1R5M1235MA1 | 1.5 | ±20% | 4.8 | 5.5 | 35 | 19.0 |
| PIM2R2M1235MA1 | 2.2 | ±20% | 6.3 | 8.0 | 29 | 16.0 |
| PIM3R3M1235MA1 | 3.3 | ±20% | 11.0 | 13.5 | 27 | 12.0 |
| PIM4R7M1235MA1 | 4.7 | ±20% | 15.3 | 18.5 | 24 | 10.0 |
| PIM5R6M1235MA1 | 5.6 | ±20% | 18.0 | 22.0 | 19 | 9.5 |
| PIM6R8M1235MA1 | 6.8 | ±20% | 20.0 | 24.0 | 18 | 9.0 |
| PIM8R2M1235MA1 | 8.2 | ±20% | 23.0 | 28.0 | 16 | 8.5 |
| PIM100M1235MA1 | 10 | ±20% | 29.0 | 34.0 | 14 | 7.5 |

Note:

1. Inductance test under 100KHz, 1.0V
2. All test data referenced to 25°C ambient
3. I_{SAT} based on inductance drop ($\Delta L/L0: \leq 30\%$) 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)

DIMENSIONS



(Unit: mm)

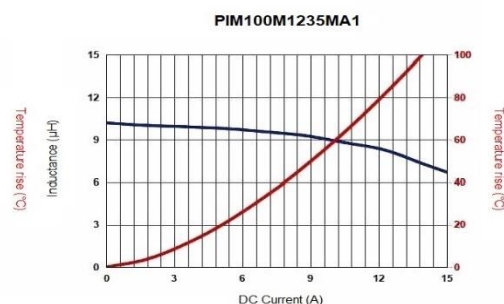
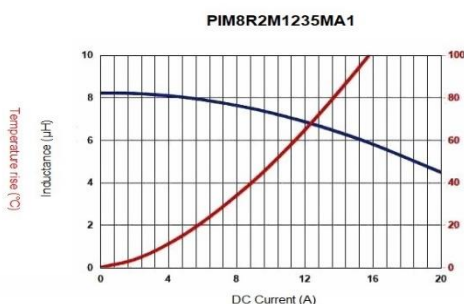
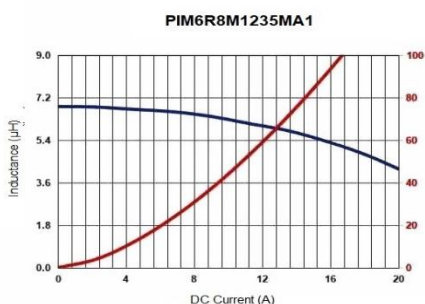
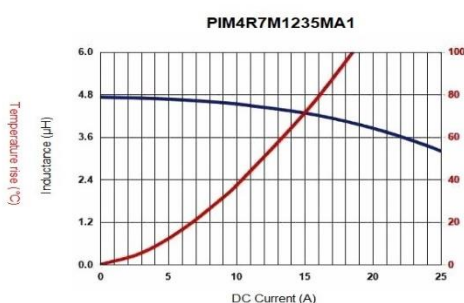
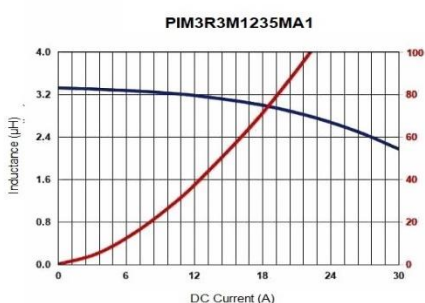
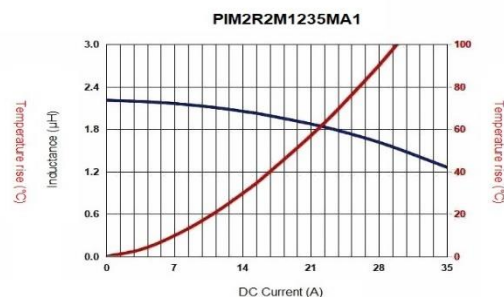
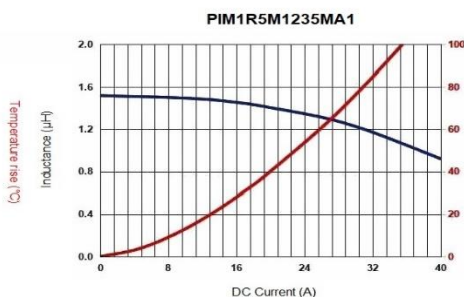
| Size Code | A | B | C | D | E | L | G | H |
|-----------|-----------|-----------|---------|----------|----------|------|-----|-----|
| 1235 | 13.5±0.50 | 12.5±0.30 | 3.3±0.2 | 2.3±0.30 | 4.7±0.30 | 14.2 | 8.0 | 5.0 |

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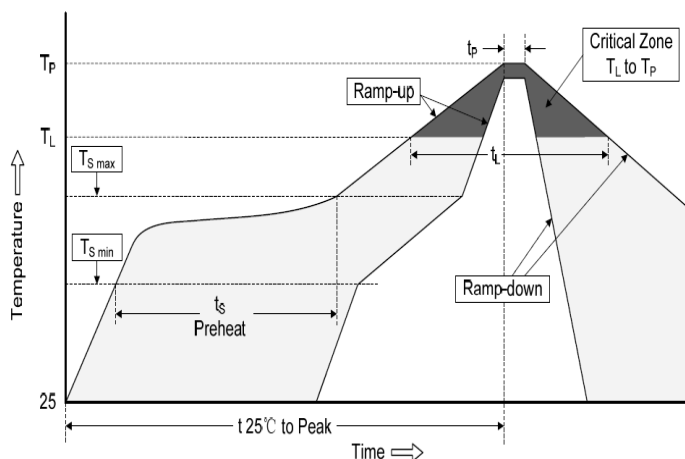
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CHARACTERISTIC CURVES



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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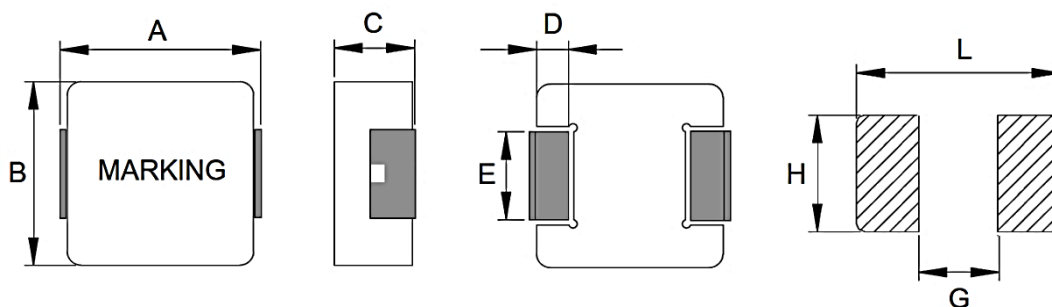
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PART NUMBERING SYSTEM

PIM (1) **1R0** (2) **M** (3) **1235** (4) **MA1** (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 | 1235 | 1235: 13.5x3.3mm | 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 |

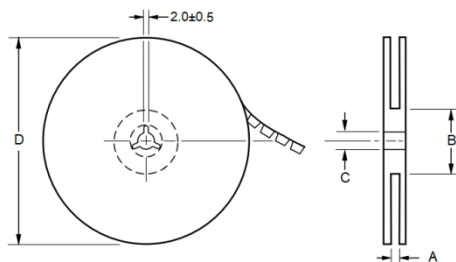
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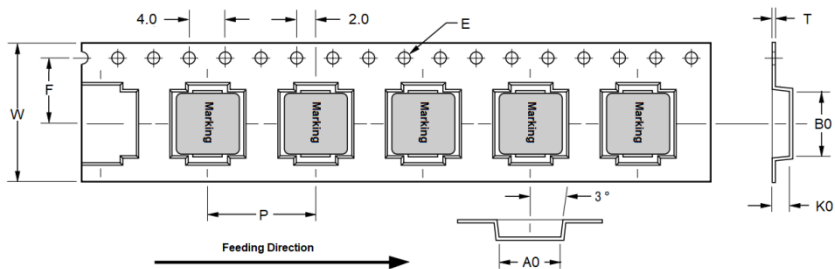
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PACKAGING DIMENSION – PIM-MA1 series

REEL DIMENSION



TAPE 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 ± 0.05 | |
| 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.