

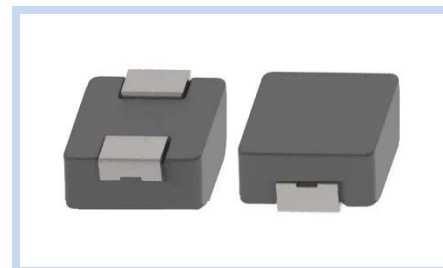
Molded Power Inductor High Current AEC-Q200

PIM-1004MA3 Series

MERITEK

FEATURE

- Low Loss, Low DCR
- High Performance (Isat)
- Ultra-Low Buzz Noise
- Capable of Corresponding High Frequency
- Shielded and Compact Construction Design
- Application: Notebook, PC, Servers, DC/DC Converter, High Current Converter, Battery Powered Devices
- AEC-Q200 Compliant



ELECTRICAL CHARACTERISTICS

| Item | Inductance (μH) | Tolerance (%) | DCR Typ. (mΩ) | DCR Max. (mΩ) | IsAT Typ. (A) | I _{RMS} Typ. (A) | E(mm) |
|----------------|-----------------|---------------|---------------|---------------|---------------|---------------------------|-------|
| PIMR15N1004MA3 | 0.15 | ±30% | 0.50 | 0.60 | 82.0 | 44.0 | 3.0 |
| PIMR22M1004MA3 | 0.22 | ±20% | 0.72 | 0.83 | 70.0 | 36.0 | 3.0 |
| PIMR36M1004MA3 | 0.36 | ±20% | 1.05 | 1.18 | 51.0 | 33.0 | 3.0 |
| PIMR47M1004MA3 | 0.47 | ±20% | 1.3 | 1.5 | 46.0 | 32.0 | 3.0 |
| PIMR56M1004MA3 | 0.56 | ±20% | 1.6 | 1.8 | 34.0 | 25.0 | 2.5 |
| PIMR68M1004MA3 | 0.68 | ±20% | 1.9 | 2.2 | 31.0 | 23.0 | 2.5 |
| PIM1R0M1004MA3 | 1.0 | ±20% | 2.9 | 3.25 | 29.0 | 20.0 | 2.5 |
| PIM1R5M1004MA3 | 1.5 | ±20% | 3.7 | 4.2 | 26.0 | 17.5 | 2.5 |
| PIM1R8M1004MA3 | 1.8 | ±20% | 5.1 | 5.7 | 23.0 | 16.5 | 3.0 |
| PIM2R2M1004MA3 | 2.2 | ±20% | 5.8 | 6.7 | 20.0 | 15.0 | 3.0 |
| PIM3R3M1004MA3 | 3.3 | ±20% | 10.5 | 11.8 | 17.5 | 11.0 | 3.0 |
| PIM4R7M1004MA3 | 4.7 | ±20% | 15.8 | 19.0 | 15.2 | 8.8 | 3.0 |
| PIM5R6M1004MA3 | 5.6 | ±20% | 19.0 | 22.8 | 14.1 | 8.0 | 3.0 |
| PIM6R8M1004MA3 | 6.8 | ±20% | 22.0 | 24.5 | 12.2 | 7.8 | 3.0 |
| PIM8R2M1004MA3 | 8.2 | ±20% | 25.0 | 28.0 | 9.5 | 7.6 | 3.0 |
| PIM100M1004MA3 | 10.0 | ±20% | 27.0 | 30.0 | 8.6 | 7.5 | 3.0 |
| PIM150M1004MA3 | 15.0 | ±20% | 41.0 | 45.0 | 7.0 | 6.25 | 3.0 |
| PIM220M1004MA3 | 22.0 | ±20% | 58.0 | 66.0 | 6.2 | 5.0 | 3.0 |
| PIM330M1004MA3 | 33.0 | ±20% | 84.0 | 91.0 | 5.5 | 4.4 | 3.0 |
| PIM470M1004MA3 | 47.0 | ±20% | 125.0 | 143.0 | 4.0 | 3.5 | 3.0 |

Note:

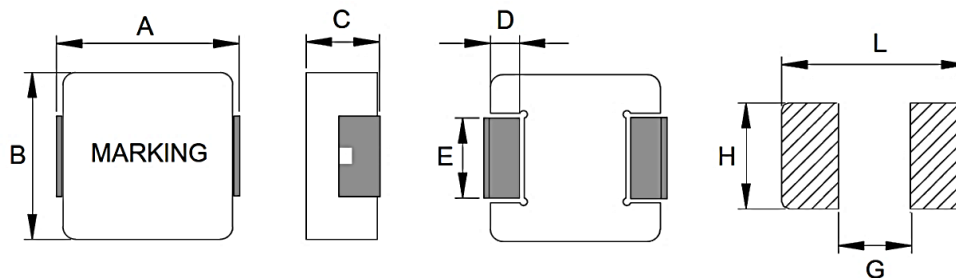
1. Inductance test under 100KHz, 1.0V
2. All test data referenced to 25 °C ambient
3. Testing Instrument(orequ): L: HP4284A, CH11025, CH3302, CH1320, CH1320S LCR METER / Rdc:CH16502, Agilent33420A MICRO OHMMETER
4. IsAT based on inductance change ($\Delta L/L_0 \leq 30\%$) approximately
5. I_{RMS} based on temperature rise ($\Delta T: 40 \text{ }^\circ\text{C}$) approximately
6. The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
7. Special inquiries besides the above common used types can be met on your requirement.

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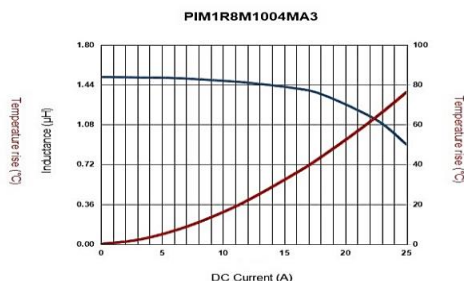
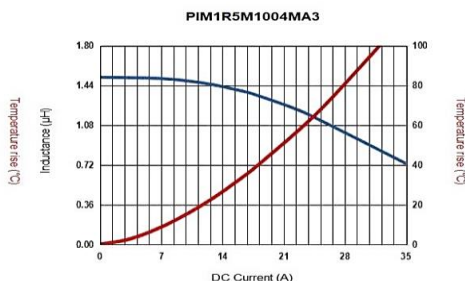
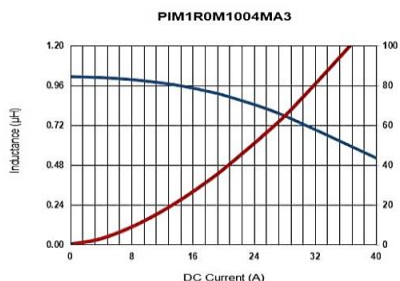
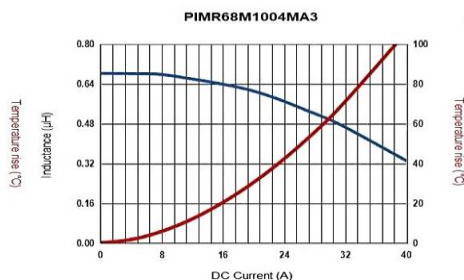
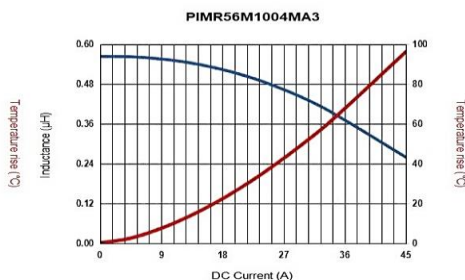
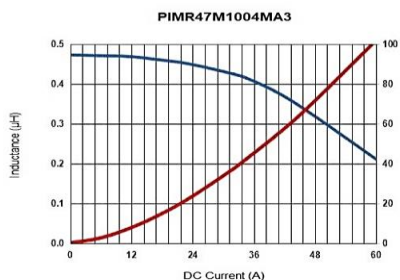
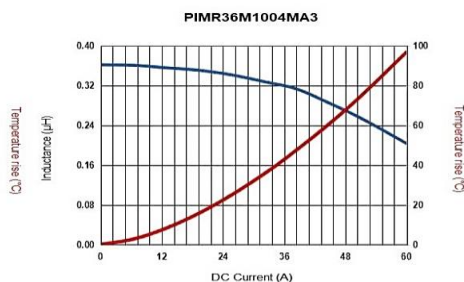
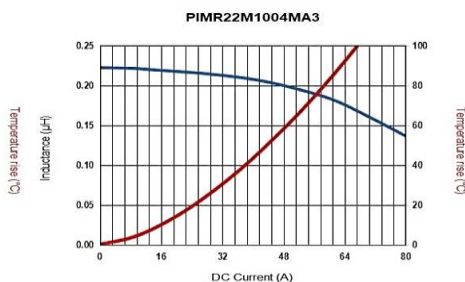
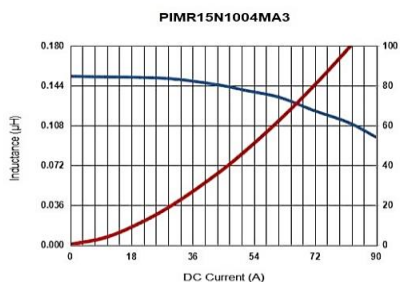
DIMENSIONS



(Unit: mm)

| Size Code | A | B | C | D | E | L | G | H |
|-----------|----------|----------|---------|---------|----------------|------|-----|-----|
| 1004 | 11.0±0.3 | 10.0±0.3 | 3.8±0.2 | 2.0±0.3 | See Spec Table | 12.5 | 5.4 | 3.5 |

CHARACTERISTIC CURVES

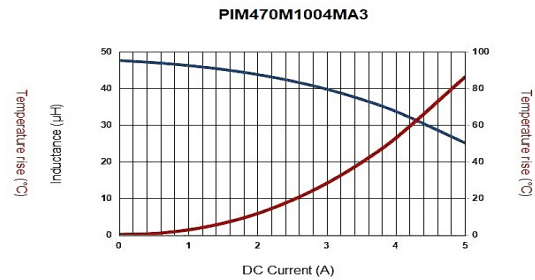
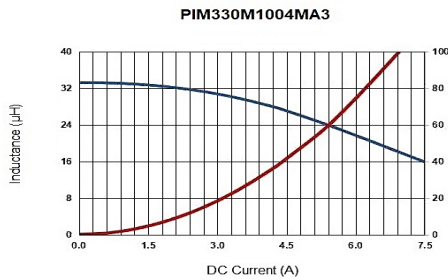
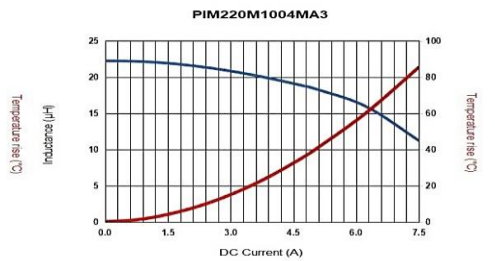
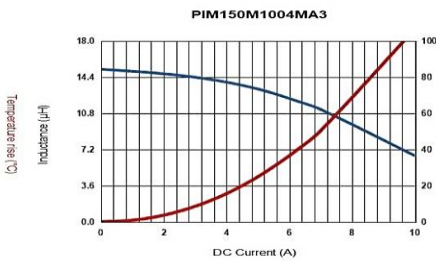
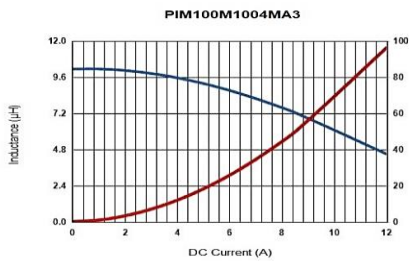
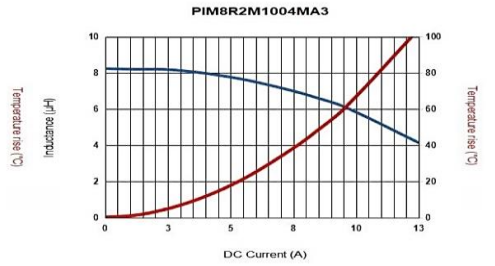
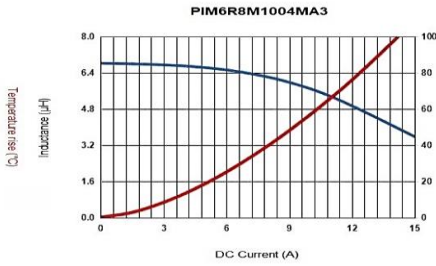
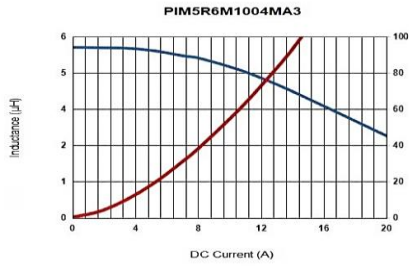
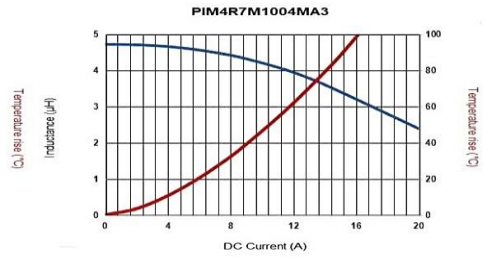
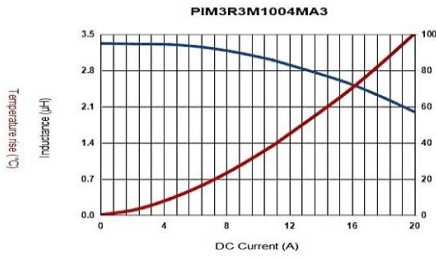
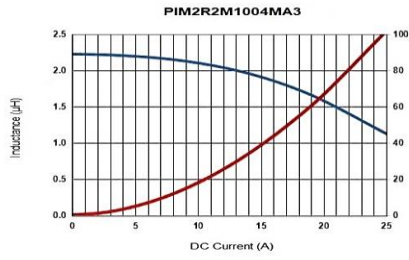


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CHARACTERISTIC CURVES

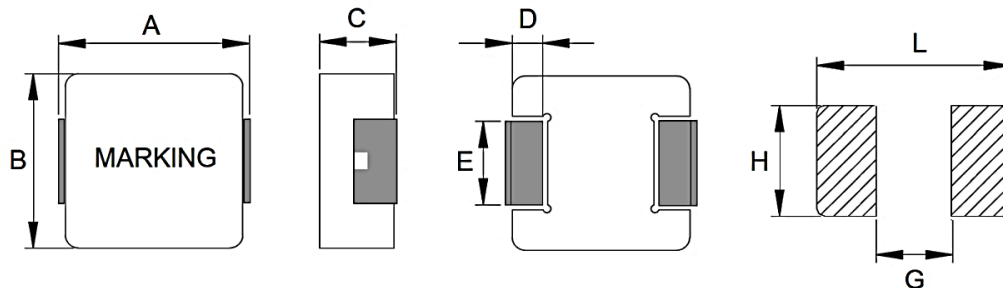


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PIM-1004MA3 Series

MERITEK

DIMENSIONS – PIM-MA3 series



(Unit: mm)

| Size Code | A | B | C | D | E | L | G | H |
|-----------|----------|----------|----------|---------|-----------|------|------|------|
| 0503 | 5.7±0.3 | 5.2±0.2 | 2.8±0.2 | 1.0±0.3 | 2.0±0.2 | 6.0 | 2.8 | 2.5 |
| 0603 | 7.1±0.3 | 6.6±0.2 | 2.8±0.2 | 1.6±0.3 | 3.0±0.2 | 8.0 | 3.7 | 3.4 |
| 0604 | 7.1±0.3 | 6.6±0.2 | 3.8±0.2 | 1.6±0.3 | 3.0±0.2 | 8.0 | 3.7 | 3.4 |
| 0605 | 7.3±0.3 | 6.6±0.3 | 4.8±0.2 | 1.6±0.3 | 3.0±0.2 | 8.0 | 3.5 | 3.4 |
| 1004 | 11.0±0.3 | 10.0±0.3 | 3.8±0.2 | 2.0±0.3 | See Table | 12.5 | 5.4 | 3.5 |
| 1005 | 11.0±0.5 | 10.0±0.3 | 4.8±0.2 | 2.0±0.3 | See Table | 12.5 | 5.4 | 3.5 |
| 1205 | 13.5±0.5 | 12.6±0.2 | 4.7±0.3 | 2.3±0.3 | See Table | 14.5 | 8.0 | 5.0 |
| 1206 | 13.5±0.5 | 12.6±0.2 | 5.7±0.3 | 2.3±0.3 | See Table | 14.5 | 8.0 | 5.0 |
| 1265 | 13.5±0.5 | 12.6±0.2 | 6.2±0.3 | 2.3±0.3 | See Table | 14.5 | 8.0 | 5.0 |
| 1707 | 17.8±0.5 | 16.9±0.3 | 6.7±0.3 | 2.3±0.3 | 11.9±0.3 | 18.5 | 12 | 12.5 |
| 2313 | 23.5±0.5 | 22.0±0.3 | 12.6±0.4 | 5.0±0.4 | 19±0.3 | 24.0 | 12.5 | 19.6 |

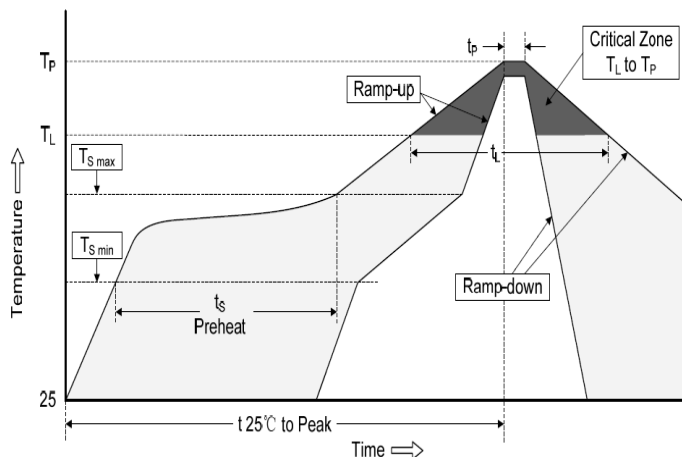
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RECOMMENDED SOLDERING PROFILES

| 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 (1) 1R0 (2) M (3) 1004 (4) MA3 (5)

| No | Item | Code | Description |
|-----|----------------|------|--|
| (1) | Meritek Series | PIM | Power Inductor Series High Current Molded 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 | 1004 | 1004: 10.0 x 3.8mm Width x Height (mm) |
| (5) | Series Code | MA3 | Automotive High Current Type |

*Specifications subject to change without notice.