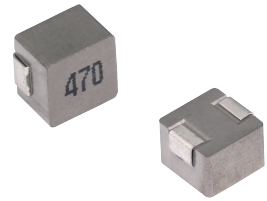


## MCMB-0630 Series

### High Current Molded Power Inductors

#### FEATURES

- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- Frequency range up to 3MHz
- Operate temperature range ....  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$  (Including self temp. rise)
- RoHS compliant



#### APPLICATIONS

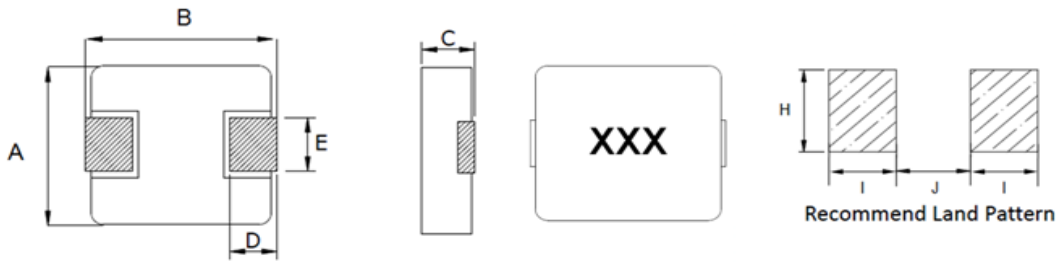
- Voltage Regulator Module (VRM)
- Multi-phase regulators
- Point-of-load modules
- Smart phone POL modules
- SSD modules
- Notebook regulators
- Battery power systems
- Graphics cards
- Data networking and storage systems

#### Explanation of Part Number

MCMB -0630 -1R0 M T

1 2 3 4 5

- ◆ 1:Product Series:Metal Alloy Molding Power Inductor
- ◆ 2:Dimensions:
- ◆ 3: Initial inductance value: 1R0 = 1.0uH
- ◆ 4:Tolerance of Inductance:M:±20%
- ◆ 5:Packing:Tape Carrier Package

**Dimensions: [mm]**


| Series    | A       | B       | C       | D       | E       | I Typ. | J Typ. | H Typ. |
|-----------|---------|---------|---------|---------|---------|--------|--------|--------|
| MCMB-0630 | 6.6±0.2 | 7.0±0.3 | 2.8±0.2 | 1.6±0.3 | 3.0±0.3 | 2.35   | 3.7    | 3.5    |

**Electrical Properties:**

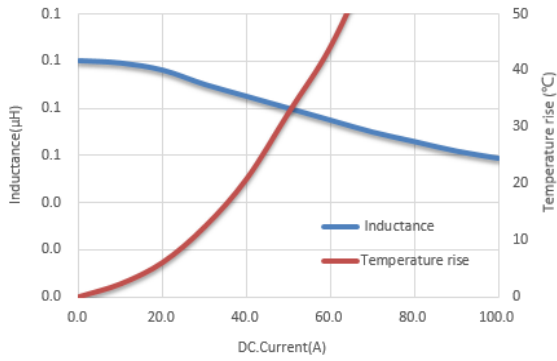
| Part Number     | Inductance  | DC Resistance | Saturation Current |      | Heat Rating Current |      |
|-----------------|-------------|---------------|--------------------|------|---------------------|------|
|                 | @100KHz, 1V | Max.          | Max.               | Typ. | Max.                | Typ. |
| Units           | μH          | mΩ            | A                  |      | A                   |      |
| Symbol          | L           | DCR           | Isat               |      | Irms                |      |
| MCMB-0630-R10MT | 0.10±20%    | 1.7           | 53.0               | 60.0 | 28.5                | 32.5 |
| MCMB-0630-R12MT | 0.12±20%    | 0.77±7%       | 30.0               | 40.0 | 32.0                | 38.0 |
| MCMB-0630-R22MT | 0.22±20%    | 3             | 27.2               | 34.0 | 21.0                | 24.0 |
| MCMB-0630-R24MT | 0.24±20%    | 3.1           | 22.4               | 28.0 | 18.4                | 23.0 |
| MCMB-0630-R33MT | 0.33±20%    | 3.5           | 20.0               | 25.0 | 19.0                | 21.0 |
| MCMB-0630-R47MT | 0.47±20%    | 4.1           | 16.0               | 20.0 | 16.5                | 18.0 |
| MCMB-0630-R56MT | 0.56±20%    | 4.5           | 14.4               | 18.0 | 15.0                | 16.5 |
| MCMB-0630-R68MT | 0.68±20%    | 5.3           | 13.6               | 17.0 | 14.5                | 16.0 |
| MCMB-0630-R82MT | 0.82±20%    | 6.0           | 12.8               | 16.0 | 12.5                | 14.0 |
| MCMB-0630-1R0MT | 1.0±20%     | 7.4           | 12.0               | 15.0 | 10.5                | 12.0 |
| MCMB-0630-1R5MT | 1.5±20%     | 12.1          | 9.60               | 12.0 | 10.5                | 12.0 |
| MCMB-0630-1R8MT | 1.8±20%     | 12.6          | 9.40               | 11.8 | 8.20                | 9.30 |
| MCMB-0630-2R2MT | 2.2±20%     | 15            | 8.00               | 10.0 | 8.50                | 9.50 |
| MCMB-0630-3R3MT | 3.3±20%     | 22            | 7.60               | 9.50 | 7.50                | 8.50 |
| MCMB-0630-4R7MT | 4.7±20%     | 33            | 7.20               | 9.00 | 5.00                | 6.00 |
| MCMB-0630-5R6MT | 5.6±20%     | 42            | 5.20               | 6.50 | 4.80                | 5.50 |
| MCMB-0630-6R8MT | 6.8±20%     | 48            | 4.80               | 6.00 | 4.20                | 5.00 |
| MCMB-0630-8R2MT | 8.2±20%     | 60            | 4.40               | 5.50 | 4.20                | 5.00 |
| MCMB-0630-100MT | 10±20%      | 68            | 4.40               | 5.50 | 3.80                | 4.50 |
| MCMB-0630-150MT | 15±20%      | 113           | 3.20               | 4.00 | 2.30                | 3.00 |
| MCMB-0630-220MT | 22±20%      | 170           | 2.40               | 3.00 | 2.00                | 2.50 |
| MCMB-0630-330MT | 33±20%      | 270           | 2.00               | 2.50 | 1.60                | 2.00 |
| MCMB-0630-470MT | 47±20%      | 385           | 1.60               | 2.00 | 1.20                | 1.50 |

**Notes**

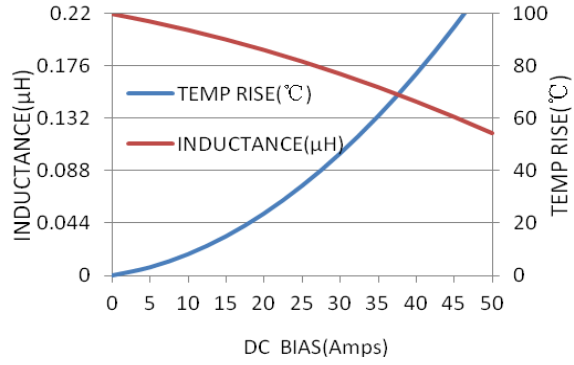
- ※1: All test data is referenced to 20°C ambient;
- ※2: Rated current: Isat or Irms, whichever is smaller;
- ※3: Isat(Typ): DC current at which the inductance drops approximate 30% from its value without current;
- ※4: Isat(Max): DC current at which the inductance drops approximate 20% from its value without current;
- ※5: Irms(Typ): DC current that causes the temperature rise (ΔT =40°C) from 20°C ambient.
- ※6: Irms(Max): DC current that causes the temperature rise (ΔT =20°C) from 20°C ambient.
- ※7: Absolute maximum voltage 30VDC

## TYPICAL ELECTRICAL CHARACTERISTICS

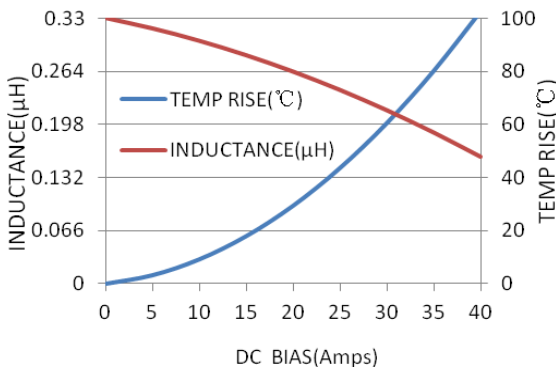
**MCMB-0630-R10MT**



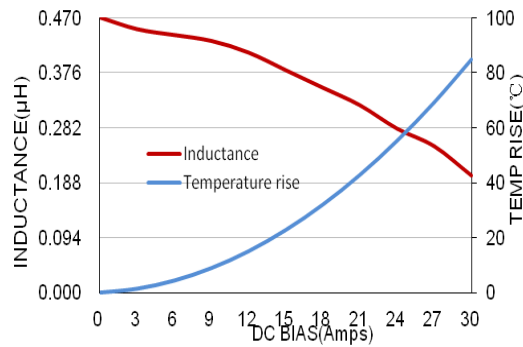
**MCMB-0630-R22MT**



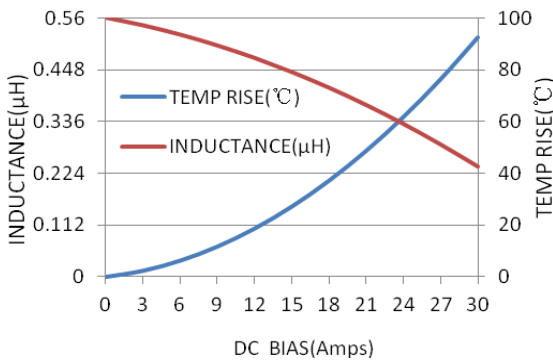
**MCMB-0630-R33MT**



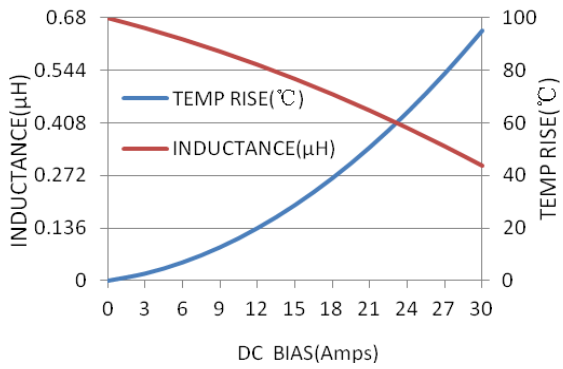
**MCMB-0630-R47MT**



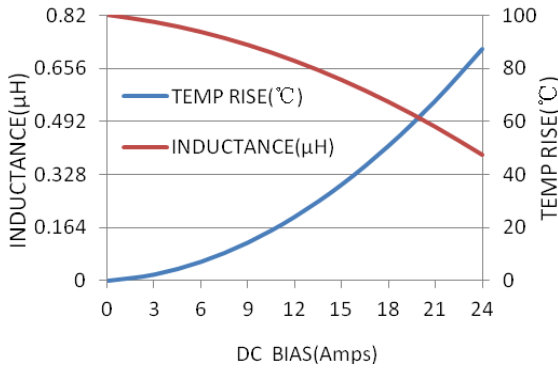
**MCMB-0630-R56MT**



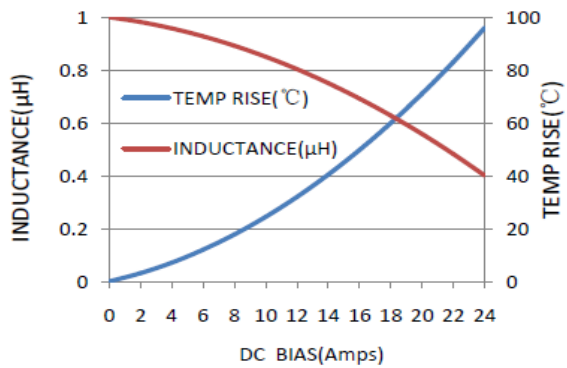
**MCMB-0630-R68MT**

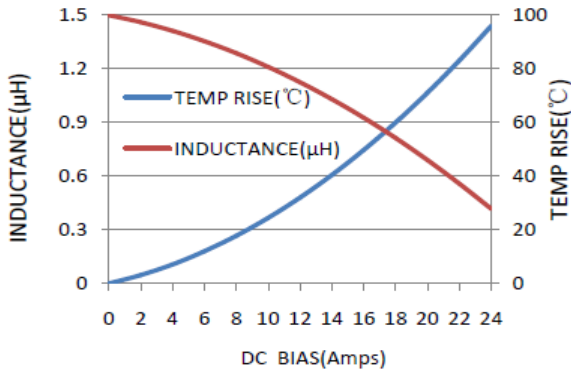
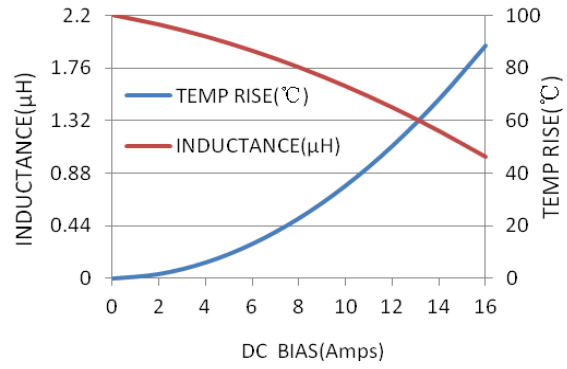
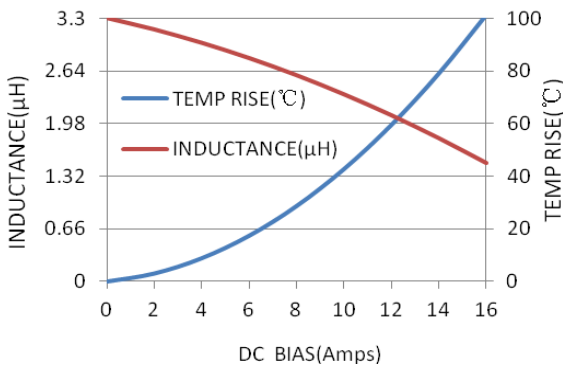
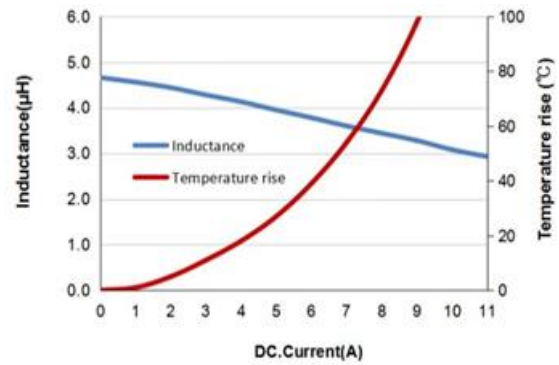
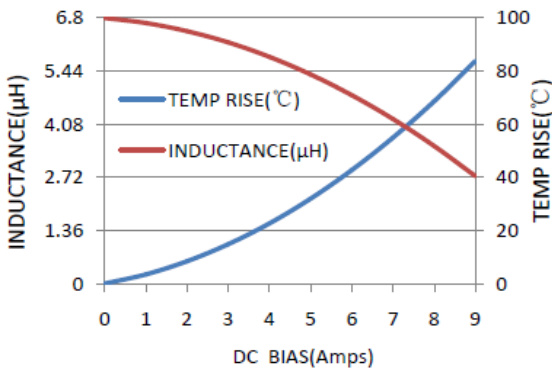
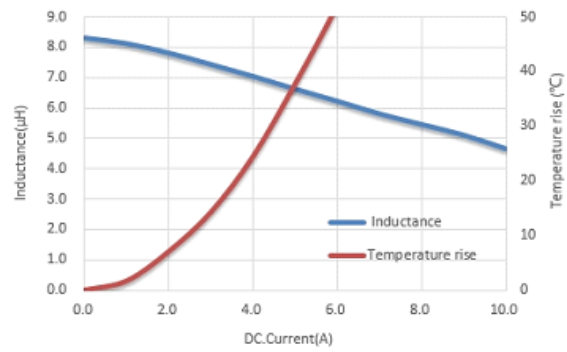
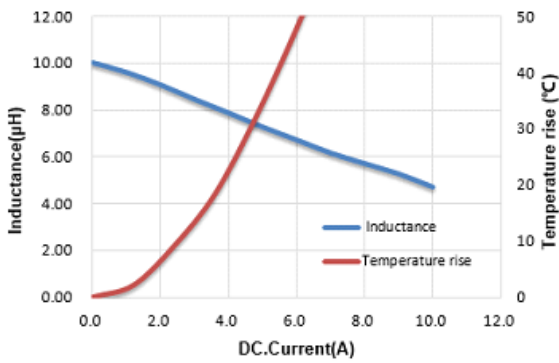
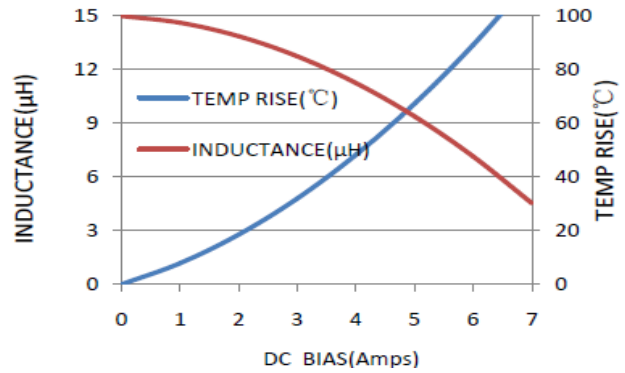


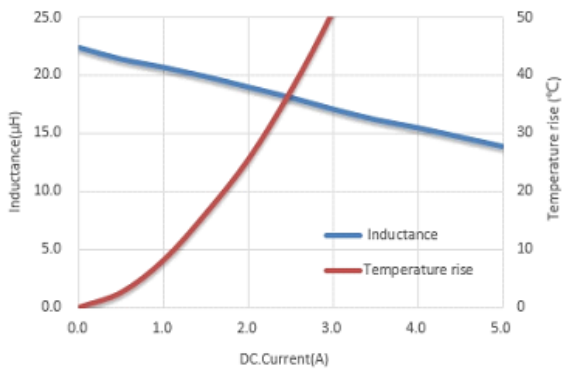
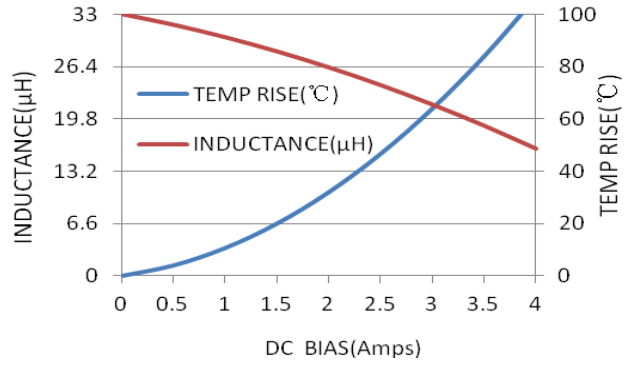
**MCMB-0630-R82MT**



**MCMB-0630-1R0MT**



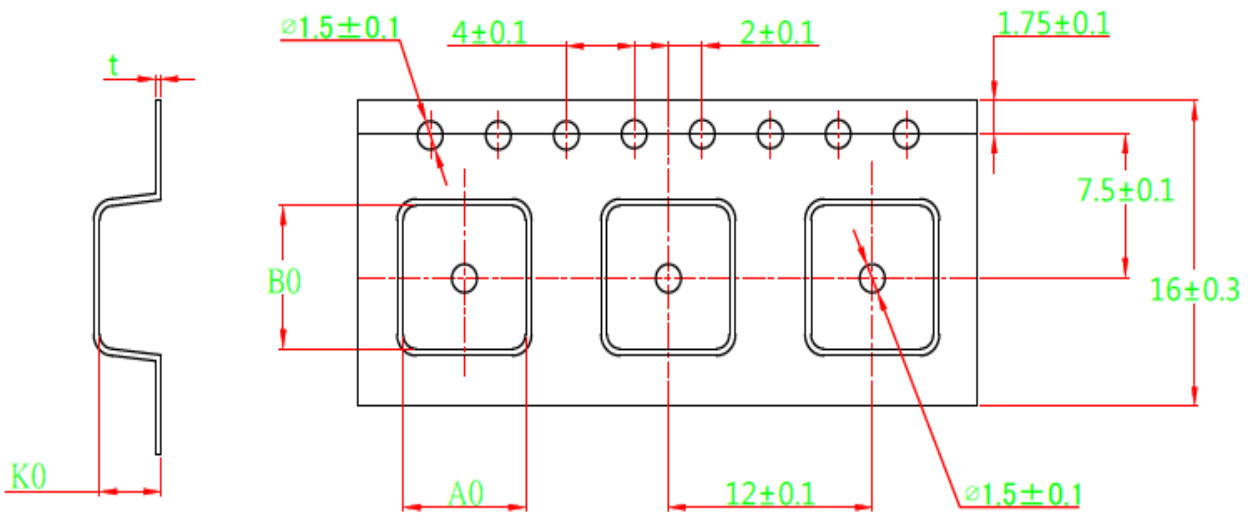
**MCMB-0630-1R5MT**

**MCMB-0630-2R2MT**

**MCMB-0630-3R3MT**

**MCMB-0630-4R7MT**

**MCMB-0630-6R8MT**

**MCMB-0630S-8R2MT**

**MCMB-0630-100MT**

**MCMB-0630-150MT**


**MCMB-0630-220MT**

**MCMB-0630-330MT**


## Reliability and Test Condition

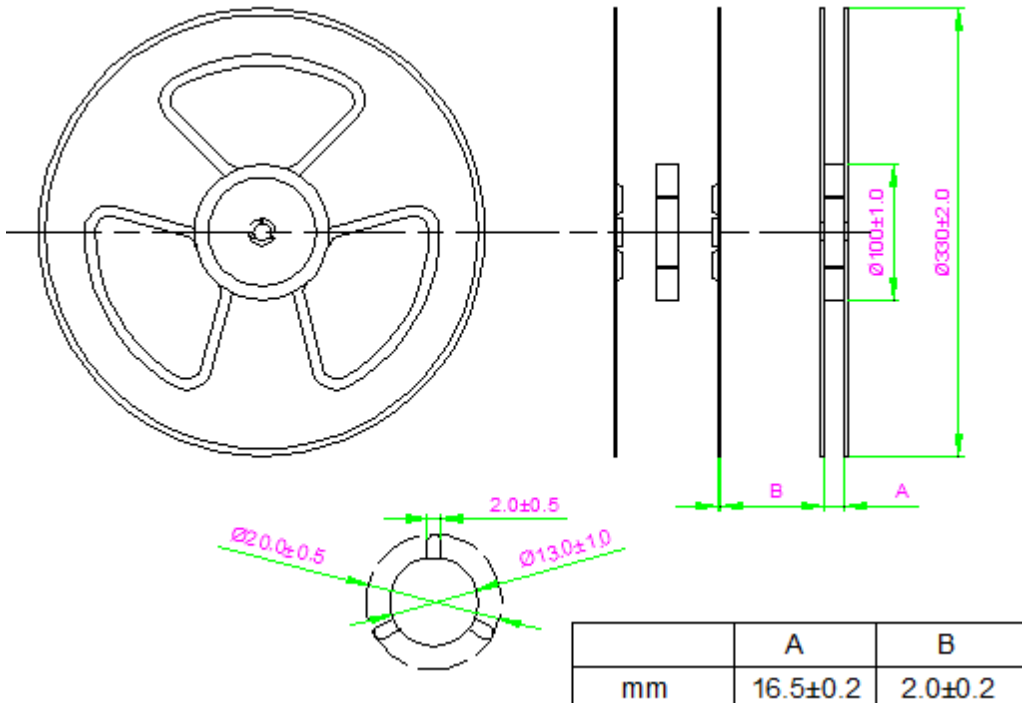
| Mechanical Reliability      |   |  |
|-----------------------------|---|--|
| Item                        | Specification and Requirement   | Test Method  |
| Solderability               | The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder | Solder heat proof:<br>1. Preheating: $160 \pm 10$ °C<br>2. Retention time: $245 \pm 5$ °C for $2 \pm 0.5$ seconds  |
| Vibration                   | Inductance change: Within $\pm 10\%$<br>Without mechanical damage such as break               | 1. Vibration frequency:<br>(10 Hz to 55 Hz to 10Hz) in 60 seconds as a period<br>2. Vibration time:<br>Period cycled for 2 hours in each of 3 mutual perpendicular directions.<br>3. Amplitude: 1.5 mm max.  |
| Shock                       | Inductance change: Within $\pm 10\%$ Without mechanical damage such as break                  | 1. Peak value: 100 G<br>2. Duration of pulse: 11ms<br>3. 3 times in each positive and negative direction of 3 mutual perpendicular directions  |
| Endurance Reliability       |   |  |
| Item                        | Specification and Requirement   | Test Method  |
| Thermal Shock               | Inductance change: Within $\pm 10\%$<br>Without distinct damage in appearance                 | 1. Repeat 100 cycles as follow:<br>( $-55 \pm 2$ °C; $30 \pm 3$ min)<br>→(Room temp., 5 min)<br>→ ( $+125 \pm 2$ °C, $30 \pm 3$ min)<br>→ (Room temp., 5 min)<br>2. Recovery: $48 + 4 / -0$ hours of recovery under the standard condition after the test. |
| High Temperature Resistance | Inductance change: Within $\pm 10\%$<br>Without distinct damage in appearance                 | 1. Environment condition: $85 \pm 2$ °C<br>Applied Current: Rated current<br>2. Duration: $1000 + 4 / -0$ hours  |
| Humidity Resistance         | Inductance change: Within $\pm 10\%$<br>Without distinct damage in appearance                 | 1. Environment condition: $60 \pm 2$ °C<br>Humidity: 90–95%<br>Applied Current: Rated current<br>2. Duration: $1000 + 4 / -0$ hours  |
| Low Temperature Store       | Inductance change: Within $\pm 10\%$<br>Without distinct damage in appearance                 | Store temperature:<br>$-55 \pm 2$ °C, $1000 + 4 / -0$ hours  |
| High Temperature Store      | Inductance change: Within $\pm 10\%$<br>Without distinct damage in appearance                 | Store temperature:<br>$+125 \pm 2$ °C, $1000 + 4 / -0$ hours   |

### Tape Packaging Dimensions



| A0       | B0       | K0       | t         |
|----------|----------|----------|-----------|
| 7.2±0.10 | 7.5±0.10 | 3.6±0.15 | 0.31±0.05 |

### Reel Dimensions



|    | A        | B       |
|----|----------|---------|
| mm | 16.5±0.2 | 2.0±0.2 |

**Packaging Quantity:1000PCS/Reel**

## Recommended Soldering Technologies

### (1) Re-flowing Profile

Preheat condition: 150 ~200°C/60~180sec.

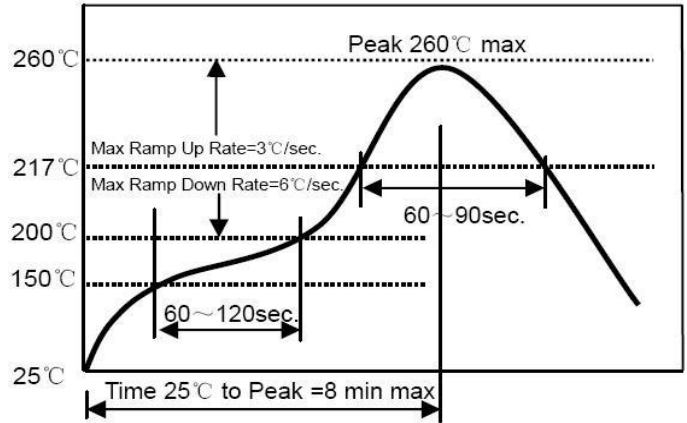
Allowed time above 217°C: 80~120sec.

Max temp: 260°C

Max time at max temp: 10 sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max



### (2) Iron Soldering Profile

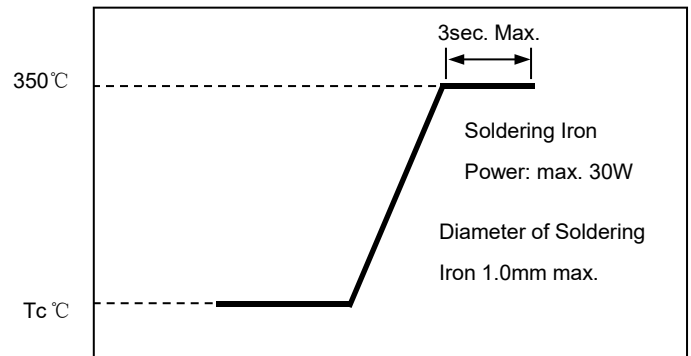
Iron soldering power: Max.

30W Pre-heating: 150°C/60sec.

Soldering time: 3sec. Max.

Solder paste: Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering





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