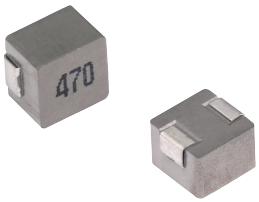
MetalLions

MCMB-1360 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℃～＋125℃(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

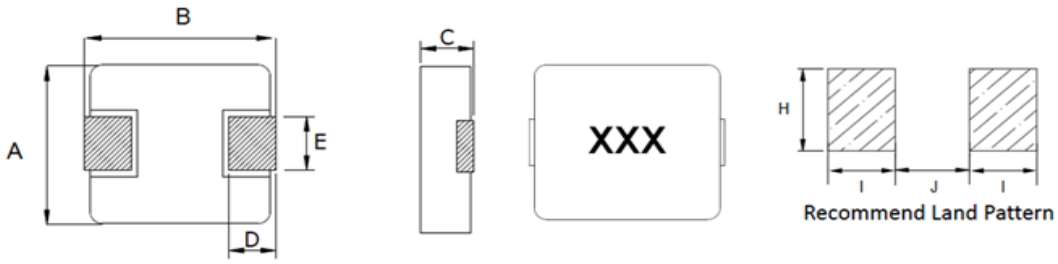
Explanation of Part Number

MCMB -1360 -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-1360	12.6±0.3	13.45±0.35	5.8±0.2	2.0±0.5	See Remarks	3.25	8.0	5.5

Series	E(mm)	Dimensions
MCMB-1360	3.85±0.5	R68/1R5/2R2
	5.0±0.3	3R3/4R7/5R6/6R8/8R2/100/120/150/180/220/270/330/470/680/101/121/151

Electrical Properties:

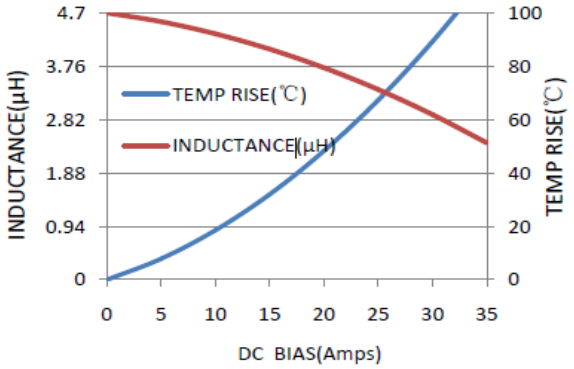
Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz,1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
MCMB-1360-1R5MT	1.5±20%	2.9	27.0	30.0	23.0	27.0
MCMB-1360-2R2MT	2.2±20%	4.2	24.0	28.0	18.0	22.0
MCMB-1360-3R3MT	3.3±20%	6.8	21.0	25.0	14.0	17.0
MCMB-1360-4R7MT	4.7±20%	9	19.2	24.0	12.0	15.0
MCMB-1360-5R6MT	5.6±20%	11	18.0	22.5	11.0	13.0
MCMB-1360-6R8MT	6.8±20%	13.5	15.2	19.0	10.0	12.0
MCMB-1360-8R2MT	8.2±20%	16	10.8	13.5	9.00	11.0
MCMB-1360-100MT	10±20%	20.7	11.1	12.5	8.50	10.0
MCMB-1360-120MT	12±20%	23	8.00	10.0	7.80	9.00
MCMB-1360-150MT	15±20%	29	7.20	9.00	7.50	8.50
MCMB-1360-180MT	18±20%	35	6.40	8.00	6.50	7.50
MCMB-1360-220MT	22±20%	39.5	6.00	7.50	6.00	7.00
MCMB-1360-270MT	27±20%	56	5.20	6.50	5.00	6.00
MCMB-1360-330MT	33±20%	75	4.80	6.00	4.80	5.50
MCMB-1360-470MT	47±20%	90	4.40	5.50	4.20	5.00
MCMB-1360-680MT	68±20%	140	3.60	4.50	3.20	4.00
MCMB-1360-101MT	100±20%	200	2.80	3.50	2.50	3.00
MCMB-1360-121MT	120±20%	235	2.56	3.20	1.70	2.00
MCMB-1360-151MT	150±20%	350	2.16	2.70	1.20	1.50

Notes

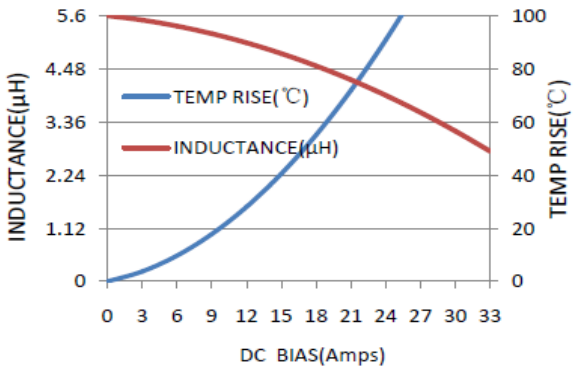
※1: All test data is referenced to 20°C ambient;
※2: Rated current: Isat or Irms, whichever is smaller;
※3: Isat(Typ): DC current at which the inductance drops approximate 30% from its value without current;
※4: Isat(Max): DC current at which the inductance drops approximate 20% from its value without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

TYPICAL ELECTRICAL CHARACTERISTICS

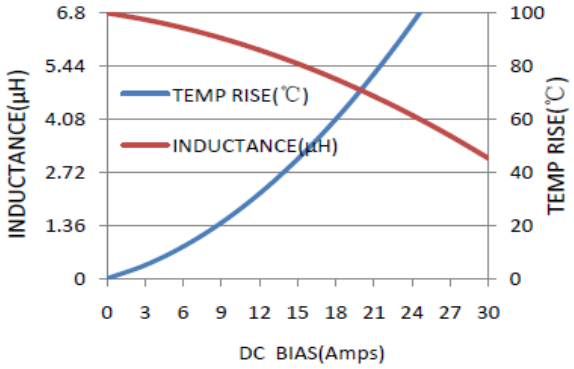
MCMB-1360-4R7MT



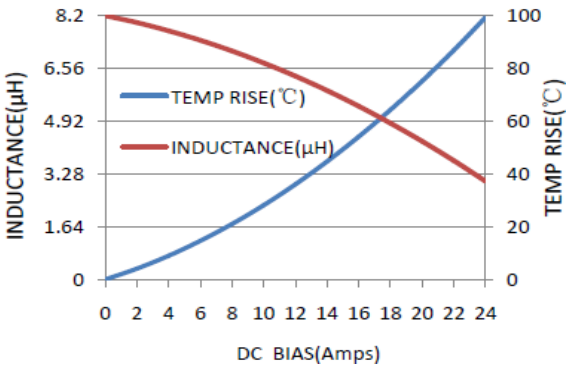
MCMB-1360-5R6MT



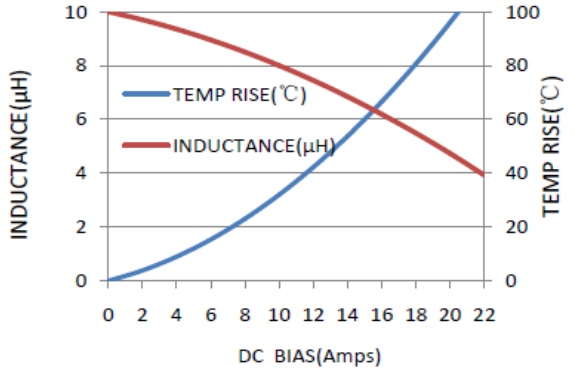
MCMB-1360-6R8MT



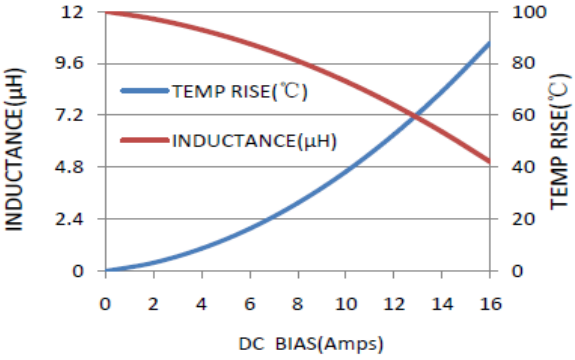
MCMB-1360-8R2MT



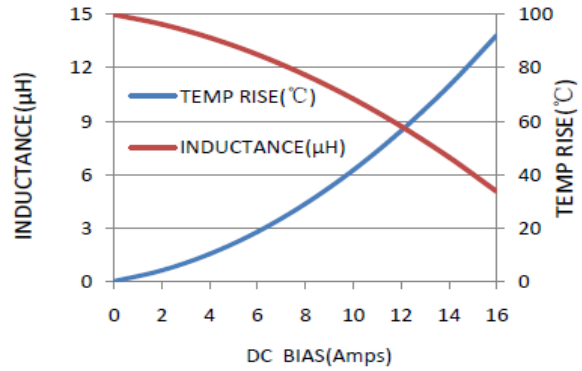
MCMB-1360-100MT



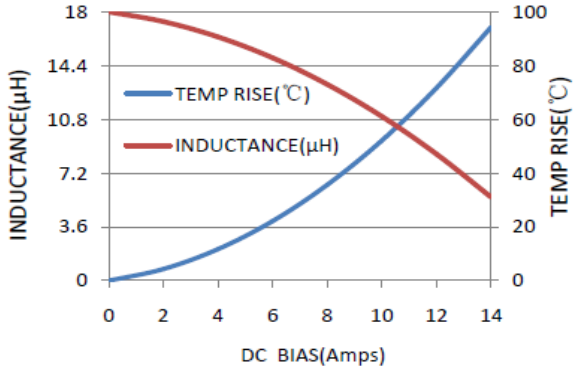
MCMB-1360-120MT



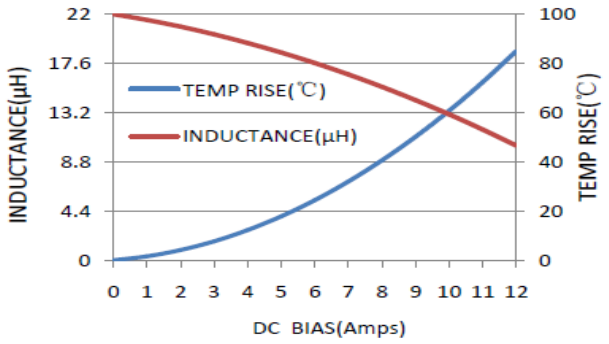
MCMB-1360-150MT



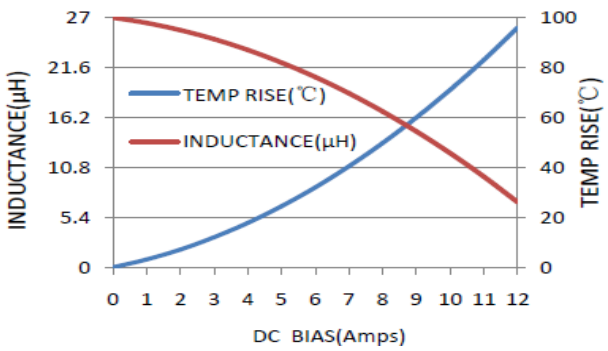
MCMB-1360-180MT



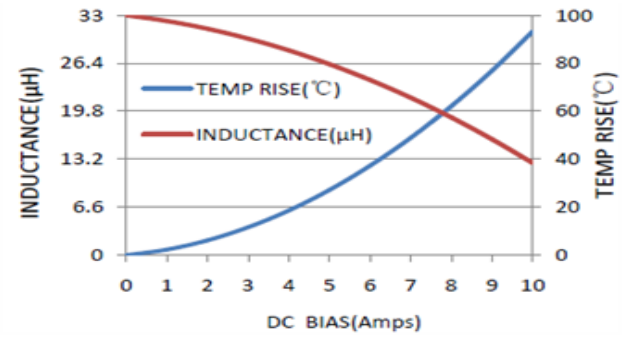
MCMB-1360-220MT



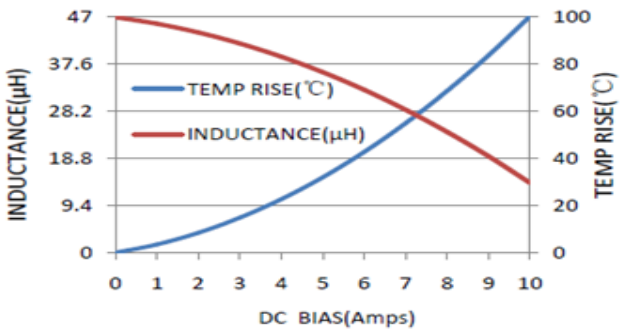
MCMB-1360-270MT



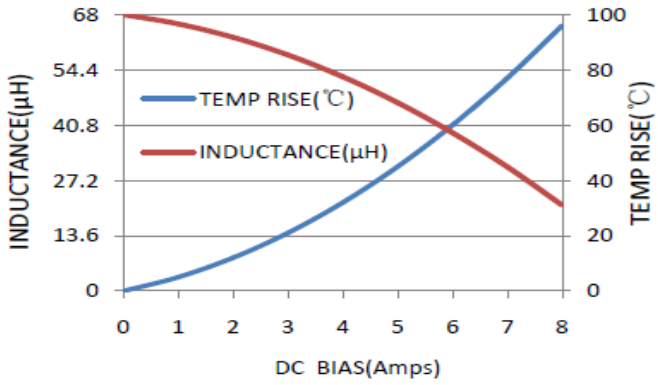
MCMB-1360-330MT



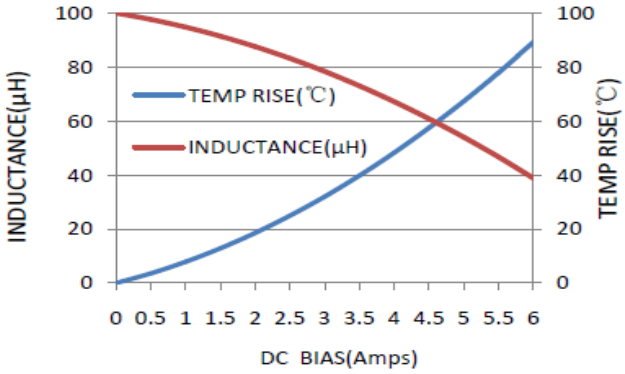
MCMB-1360-470MT



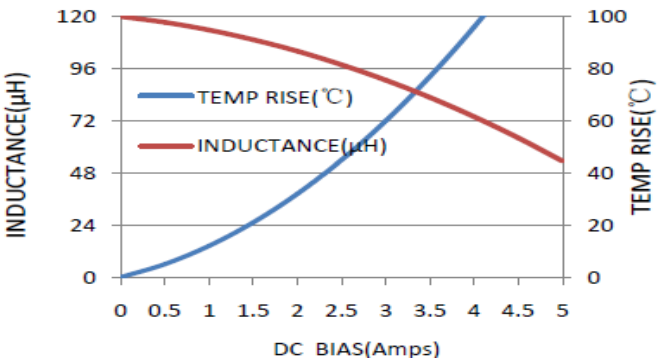
MCMB-1360-680MT



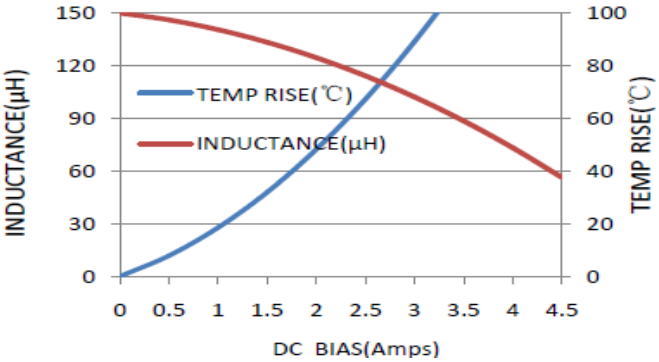
MCMB-1360-101MT



MCMB-1360-121MT



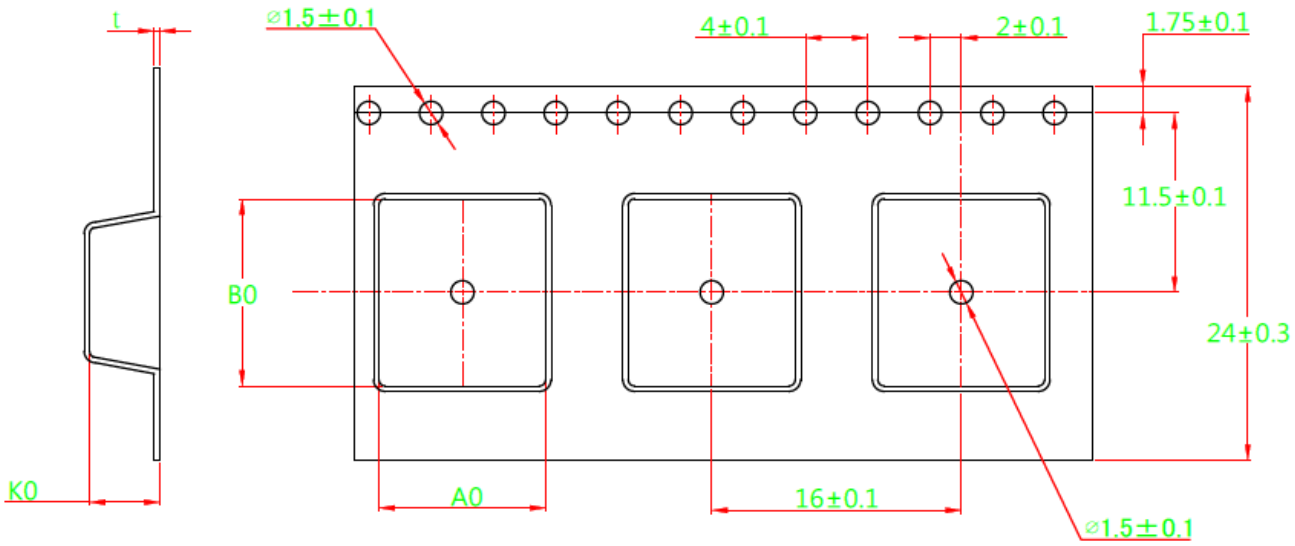
MCMB-1360-151MT



Reliability and Test Condition

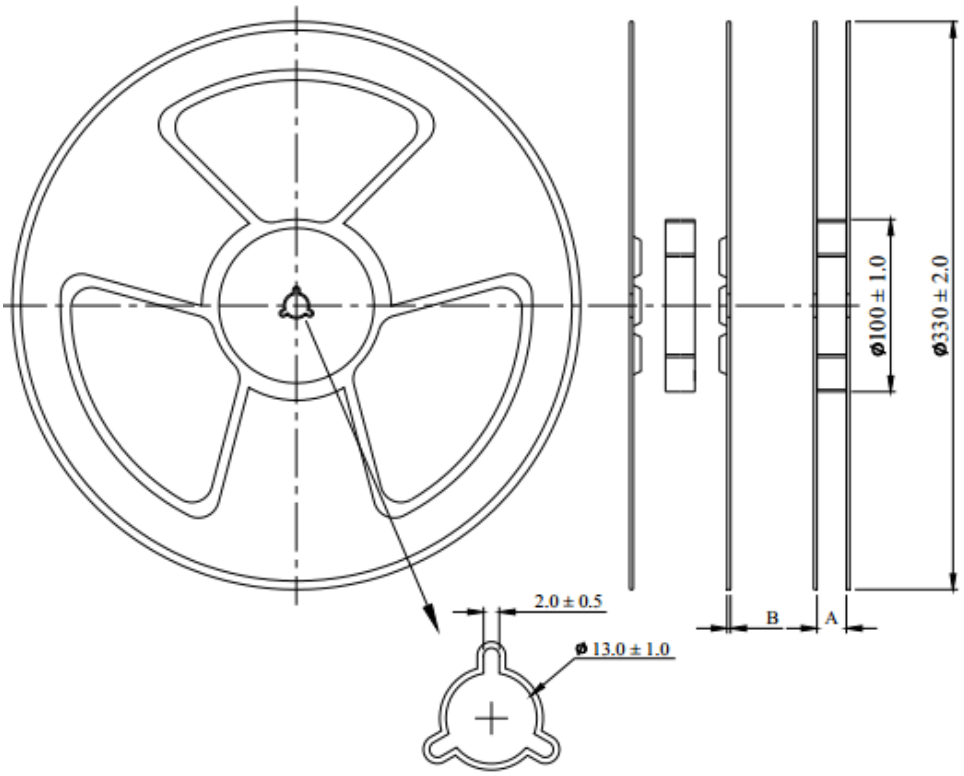
Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	Solder heat proof: 1. Preheating: 160 ± 10 ℃ 2. Retention time: 245 ± 5 ℃ for 2 ± 0.5 seconds
Vibration	Inductance change: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

Tape Packaging Dimensions



A0	B0	K0	t
13.4±0.10	14.1±0.10	6.4±0.15	0.5±0.05

Reel Dimensions



Packaging Quantity:500PCS/Reel

Recommended Soldering Technologies

(1) Re-flowing Profile

Preheat condition： 150 ~200℃/60~180sec.

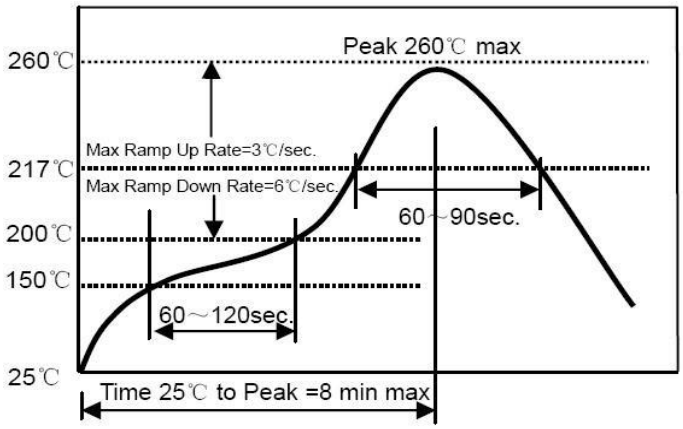
Allowed time above 217℃： 80~120sec.

Max temp：260℃

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℃/60sec.

Soldering time： 3sec. Max.

Solder paste：Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering