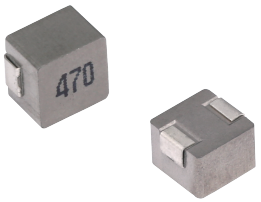
MetalLions

MCMB-0650 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 5MHz
- 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

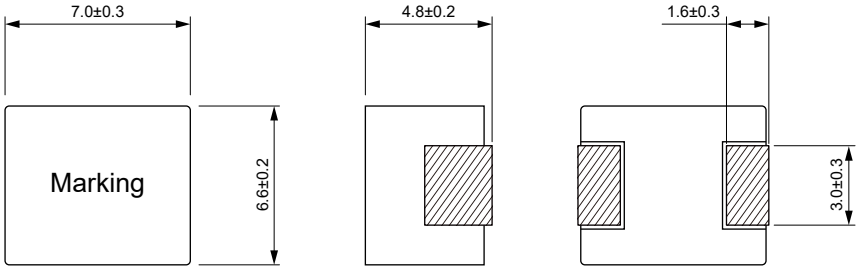
Explanation of Part Number

MCMB -0630 -1R0 M T

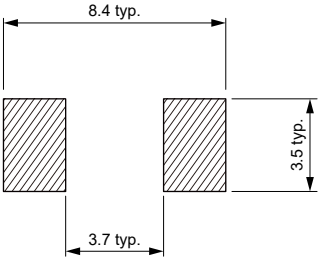
1 2 3 4 5

- 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]



Land Pattern: [mm]



Electrical Properties:

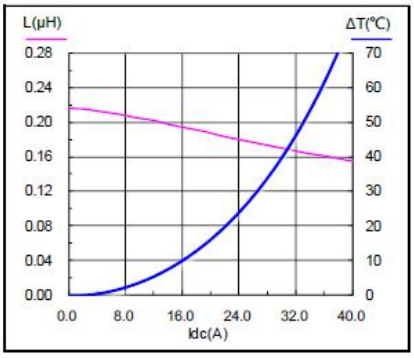
Part No	Inductance 100KHz 1.0V		DCR (mΩ)		Saturation Current	Temperature Rise Current
	L(μH) '@0A	Tol	Typical	Max	(A) Typical	(A) Typical
MCMB-0650-R22MT	0.22	±20%	1.10	1.30	40.00	30.00
MCMB-0650-R47MT	0.47	±20%	3.20	3.80	24.00	20.00
MCMB-0650-R56MT	0.56	±20%	3.40	3.90	20.00	20.00
MCMB-0650-R68MT	0.68	±20%	3.90	4.20	17.00	17.50
MCMB-0650-R82MT	0.82	±20%	4.60	4.90	17.00	17.00
MCMB-0650-1R0MT	1.00	±20%	6.50	8.50	16.50	13.00
MCMB-0650-1R5MT	1.50	±20%	7.00	8.50	12.70	12.00
MCMB-0650-2R2MT	2.20	±20%	11.20	12.50	12.50	11.00
MCMB-0650-3R3MT	3.30	±20%	20.00	22.00	9.00	8.50
MCMB-0650-4R7MT	4.70	±20%	26.00	30.00	8.00	6.70
MCMB-0650-5R6MT	5.60	±20%	31.00	36.00	7.60	5.80
MCMB-0650-6R8MT	6.80	±20%	36.50	41.00	7.30	5.50
MCMB-0650-100MT	10.00	±20%	48.00	55.00	5.50	4.70
MCMB-0650-150MT	15.00	±20%	77.00	85.00	5.00	4.00
MCMB-0650-220MT	22.00	±20%	125.00	140.00	4.00	3.20
MCMB-0650-330MT	33.00	±20%	150.00	200.00	3.30	2.80
MCMB-0650-470MT	47.00	±20%	260.00	300.00	2.80	2.20
MCMB-0650-680MT	68.00	±20%	340.00	442.00	2.00	1.50

Notes

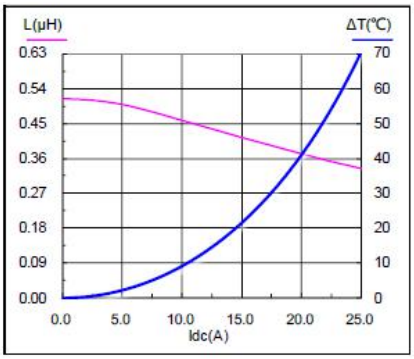
1. All test data is referenced to 25 °C ambient
2. Idc(A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25°C)
3. Isat(A):DC current (A) that will cause L0 to dropapproximately 30 %
4. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Saturation current VS temperature rise current curve

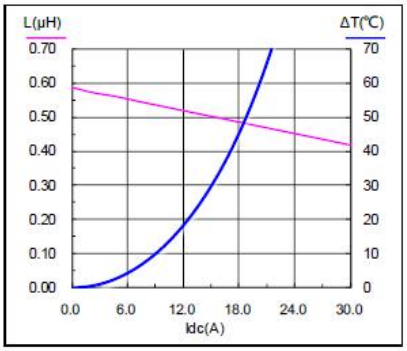
MCMB-0650-R22MT



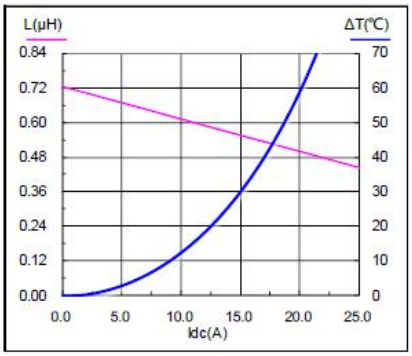
MCMB-0650-R47MT



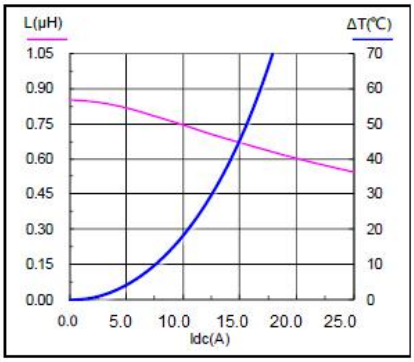
MCMB-0650-R56MT



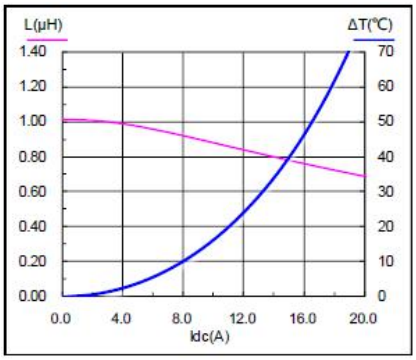
MCMB-0650-R68MT



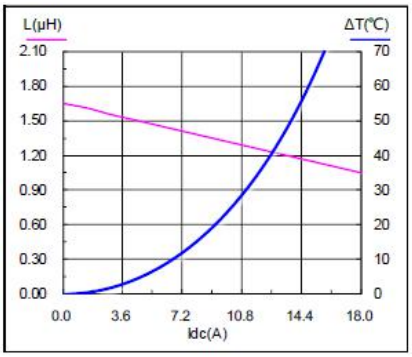
MCMB-0650-R82MT



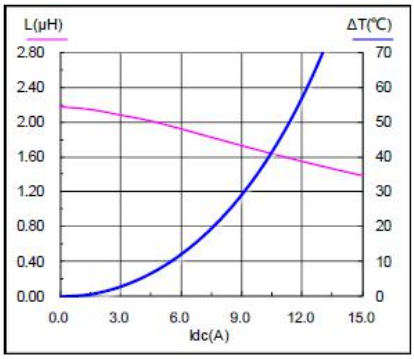
MCMB-0650-1R0MT



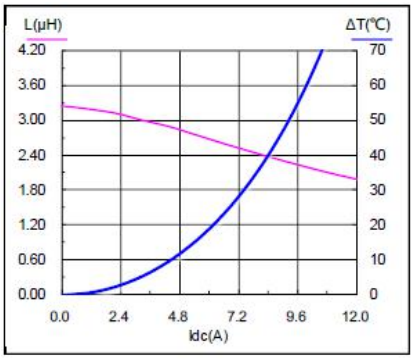
MCMB-0650-1R5MT



MCMB-0650-2R2MT



MCMB-0650-3R3MT



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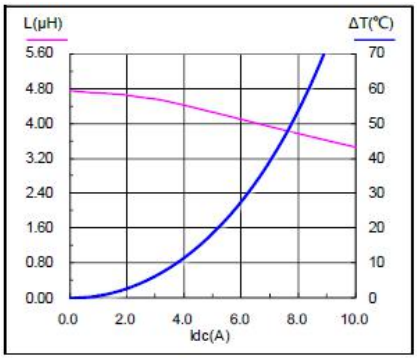
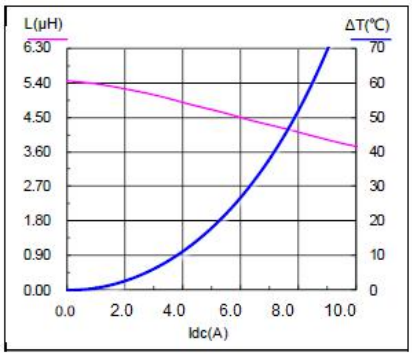
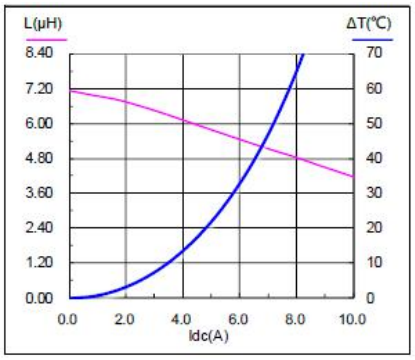


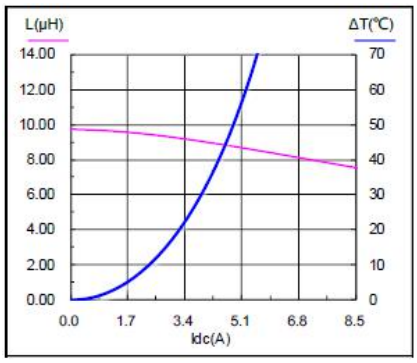
MCMB-0650-5R6MT



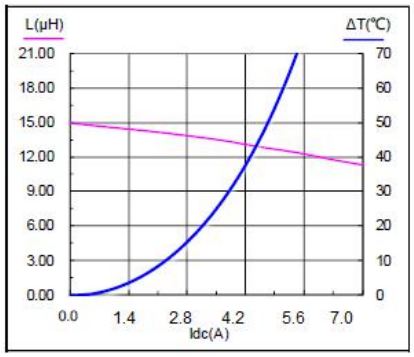
MCMB-0650-6R8MT



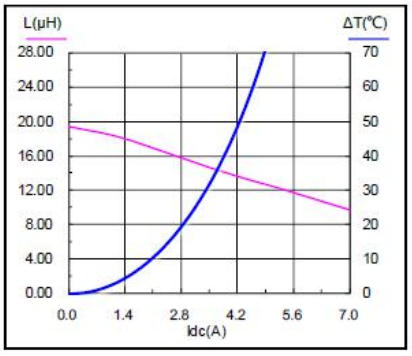
MCMB-0650-100MT



MCMB-0650-150MT



MCMB-0650-220MT



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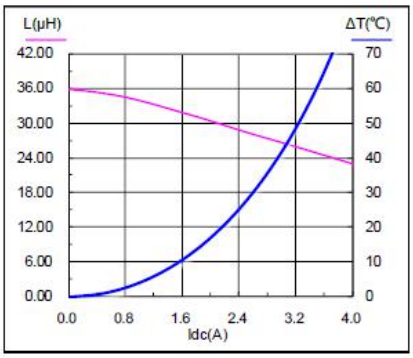

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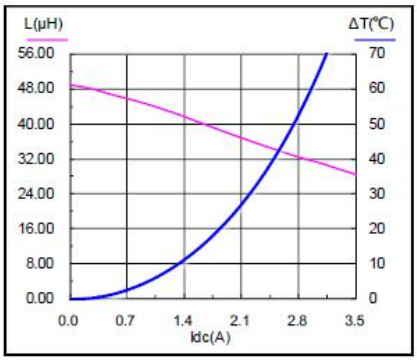
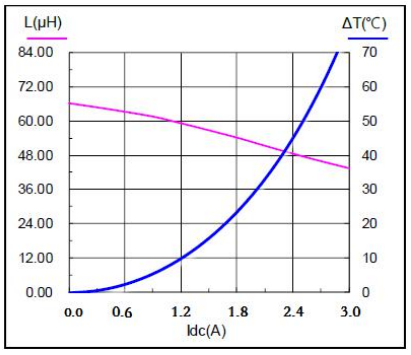


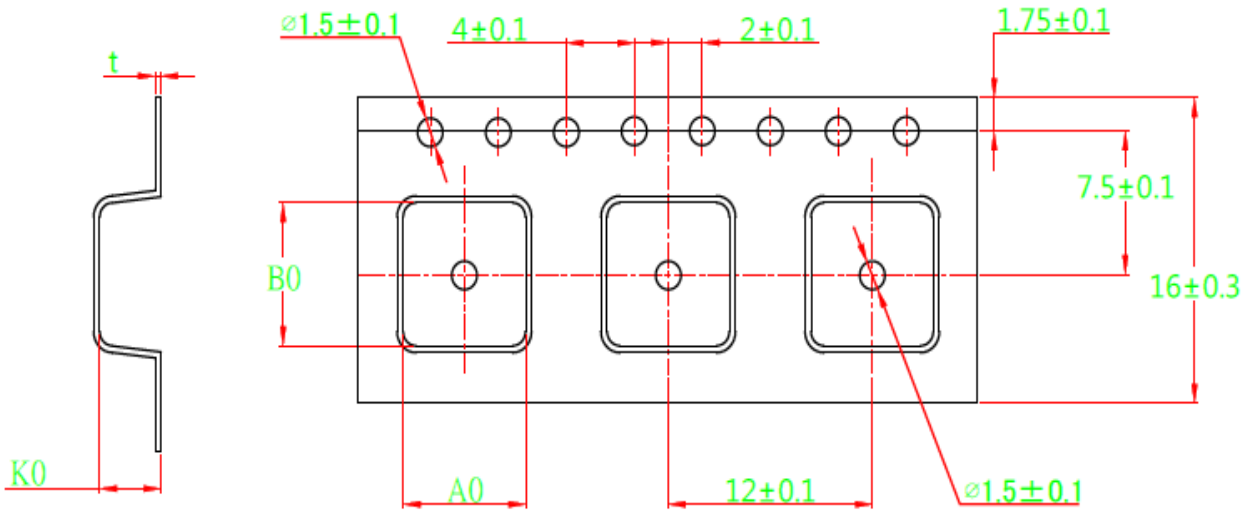
MCMB-0650-680MT



Reliability and Test Condition

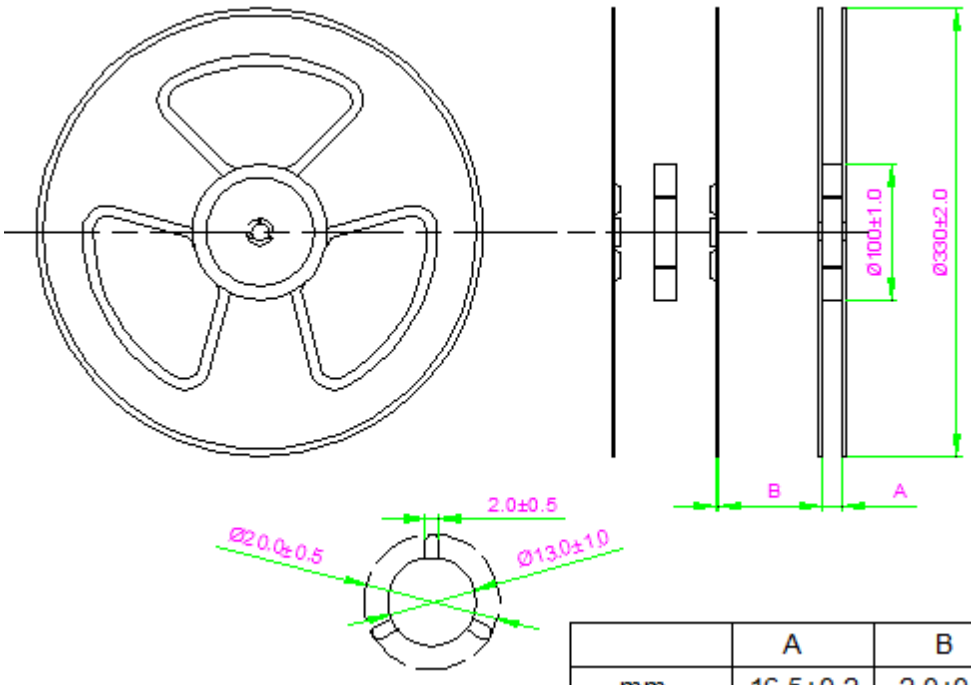
Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	Solder heat proof: 1. Preheating: 160 ± 10 ℃ 2. Retention time: 245 ± 5 ℃ for 2 ± 0.5 seconds
Vibration	Inductance change: 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
7.2±0.10	7.5±0.10	5.6± 0.15	0.31±0.05

Reel Dimensions



	A	B
mm	16.5±0.2	2.0±0.2

Packaging Quantity:1000PCS/Reel

Recommended reflow soldering curve：