CUSTOMER: _____ DATE: _____

SPECIFICATION

RoHS+HSF
COMPLIANT

PRODUCT NAME: SMD power inductor

YOUR PART NO.:

OUR PART NO.: MTVM080560HC Series

VERSION: V1.0

RECEPTION THE SPECIFICATION HAS BEEN ACCEPTED. **COMPANY:** DATE:		
CFMD	CHKD	RCVD

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MMANUFACTURING NAME

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CFMD.	CHKD.	DSGD.
Charles	Lu Denghui	Wang Yusheng

CATALOG

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Component SPEC Version Record

Rev.	Effective Date	Changed Contents	Change Reasons	Approved By
1.0	2026.01.16	New released	/	Charles

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1. Scope

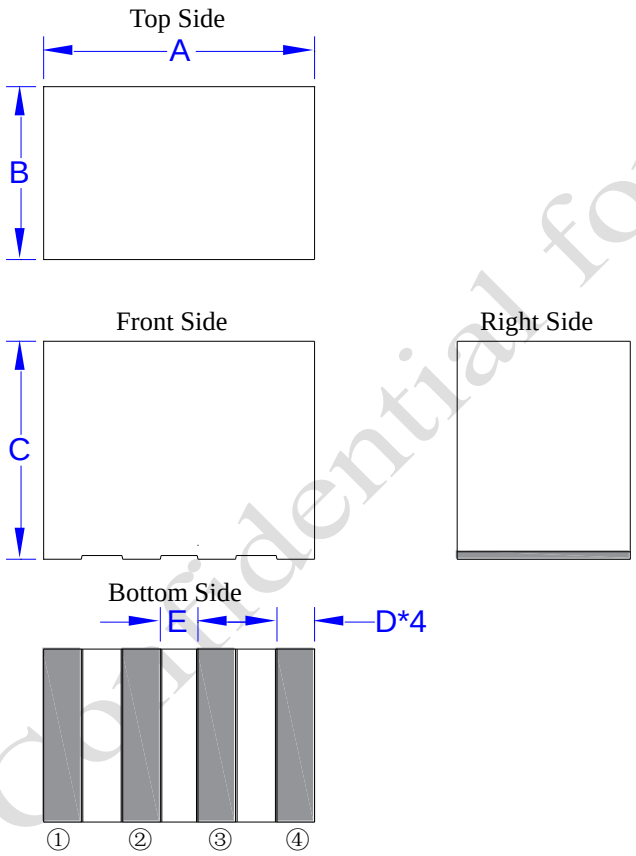
This specification applies to the MTVM080560HC series of SMD Power inductors.

2. Product Identification

MTVM	080560	HC	85N	M	** -	LF
①	②	③	④	⑤	⑥	⑦

① Product Symbol
② Dimensions
③ Special process code
④ Inductance Value (85N:85nH; R10:0.10uH; 1R0:1.0uH)
⑤ Inductance Tolerance (M:±20%)
⑥ Process code
⑦ Lead-Free

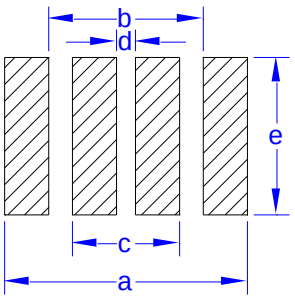
3. Appearance and Dimensions



Dimensions in mm	
A	7.2±0.3
B	4.6±0.2
C	5.8±0.2
D	1.0±0.2
E	1.0±0.2

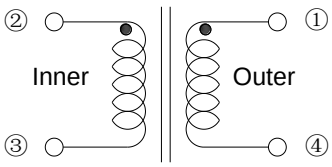
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Recommended land pattern (Unit: mm)



a	7.7
b	4.9
c	3.4
d	0.6
e	5.0

Equivalent circuit



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4. Testing Conditions

Unless otherwise specified, the standard conditions for measurement/test as:
Ambient Temperature : 5 to 35℃
Relative Humidity: 25 to 85% RH
Atmospheric Pressure: 86 to 106 kPa

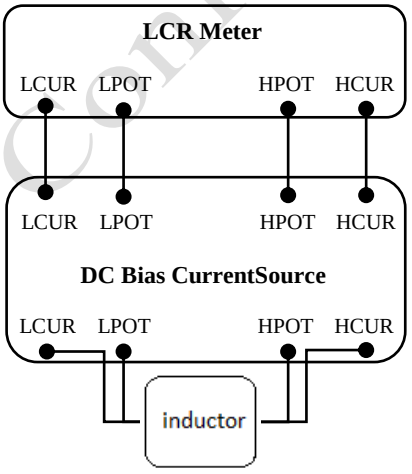
If any doubt on the results, measurements/tests should be made within the following limits:
Ambient Temperature : 25±1℃
Relative Humidity: 60 to 70% RH
Atmospheric Pressure: 86 to 106 kPa

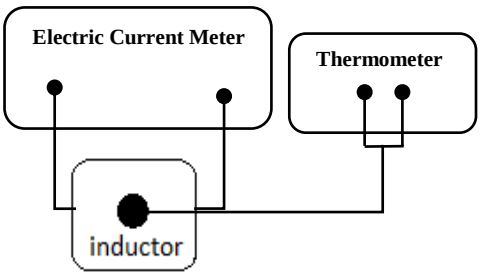
5. Electrical Characteristics And Test Instruments

Microgate Part No. : MTVM080560HC58NM**-LF											
L0 (nH) @0A ±20%	Isat (A) 1-4		Irms (A) 1-4		Irms (A) 2-3		DCR (mΩ) 1-4		DCR (mΩ) 2-3		coupling coefficient K Typ.
1-4,2-3	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	
85	90	104	62	69	32	35	0.210	0.175	0.66	0.55	0.90

Test instruments and remar24

* All test data is referenced to 25℃ ambient.
* L test by CHROMA 3302 meter or equivalent
* L test parameters:1MHz,1.0Vrms
* DCR test by Tonghui TH2516B meter or equivalent.
* CHROMA 3302 and 1320 meter for IDC.
* Isat: DC current (A) that will cause L0 to drop approximately 30%.
* Irms: DC current (A) that will cause an approximate ΔT of 40℃.
* The rated current as listed is either the saturation current or the heating current depending on which value is lower.
*Operating temperature range: -40℃ ~ +125℃.(Including self-heating).
* The part temperature (ambient + temp rise) should not exceed 155℃ under worse case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provision all affect the part temperature. Part temperature should be verified in the end application.

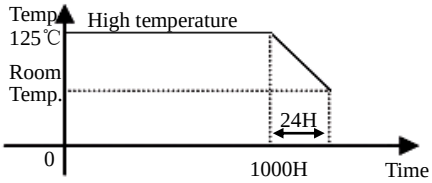
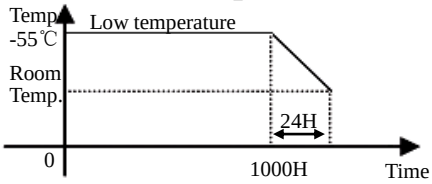
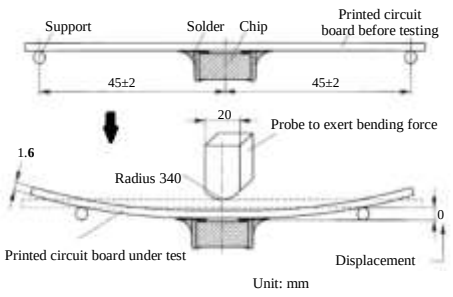




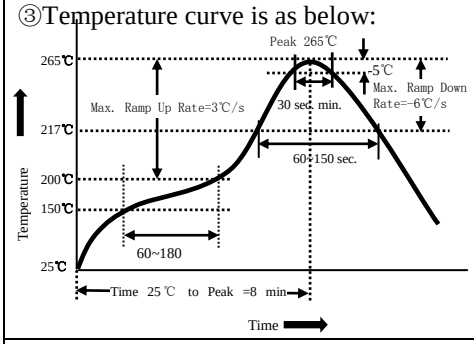
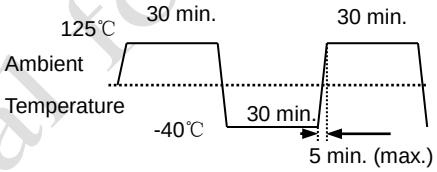
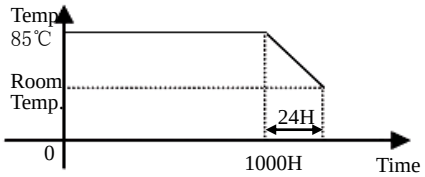
Isat test schematic diagram Irms test schematic diagram

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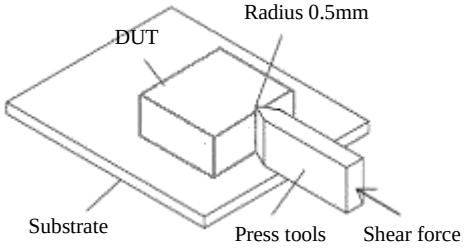
6. Reliability

No.	Item	Requirements	Test Methods and Remarks	Reference	Sample Size
1	Solderability	Terminal area must have 90% min. solder coverage.	①Temperature:245± 5℃, flux 5-10 s. ②Sample immersion tin furnace 5 ±1s. ③Immersed and in and out of speed: 25 ± 6mm/s.	AEC-Q200 (J-STD-002)	10
2	High Temperature Storage	(1)No appearance defect (2)|ΔL0/L0|≤ 10%	①Temperature: 125±2℃. ②Time : 1000 hours. ③Measurement at 24±4 hours after test conclusion. 	AEC-Q200 (MIL-STD -202 Method 108)	77
3	Low Temperature Storage		①Temperature: -55℃. ②Time : 1000 hours. ③Measurement at 24±4 hours after test conclusion. 	GB/T 2423.1-2008	77
4	Board Flex		①Part mounted on a 100mm*40mm FR4 PCB board, which is 1.6±0.2 mm thick. ②Bending speed is 1mm/s. ③Keeping the P.C Board 2 mm minimum for 30 seconds. ④3 bending tests 	AEC-Q200 (AEC-Q200-005)	10
5	Loading at High Temperature		①Samples shall be from the Pre-conditioning group. ②Temperature: 85±2℃. ③Time : 1000 hours. ④Applied Current : Rated current. ⑤Measurement at 24±4 hours after test conclusion.	MIL-STD-202 Method 108 Test Condition D	77

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No.	Item	Requirements	Test Methods and Remarks	Reference	Sample Size
6	Resistance to Soldering Heat	(1)No appearance defect (2)｜ΔL0/L0｜≤ 10%	①The peak temperature: 260+5/-0℃. ②Reflow:2 times. ③Temperature curve is as below: 	AEC-Q200 (MIL-STD-202 Method 210)	20
7	Pre-conditioning		3 reflow cycles	JESD22-A113	Sufficient for reliability test coverage
8	Temperature Cycling		①Samples shall be from the Pre-conditioning group ②First -40℃ for 30 minutes, last 125℃ 30minutes as 1 cycle. Go through 100 cycles. ③Max transfer time is 5 minutes. ④Measurement at 24±4 hours after test conclusion. 	MIL-STD -202 Method 107 Test condition D	77
9	Humidity Resistance		①Samples shall be from the Pre-conditioning group. ②100 hours, 85±2°C / 85±2% RH. ③Unpowered. ④Measurement at 24±4 hours after test conclusion. 	AEC-Q200 (MIL-STD -202 Method 103)	77
10	Vibration		①Samples shall be from the Pre-conditioning group. ②10Hz to 55Hz at 10g. ③Sweep time and duration: 10Hz~55Hz~10Hz for 20 minutes. ④Each four hours in X,Y,Z direction, 1 hours in total.	AEC-Q200 (MIL-STD-202 Method 204 Test condition B)	10

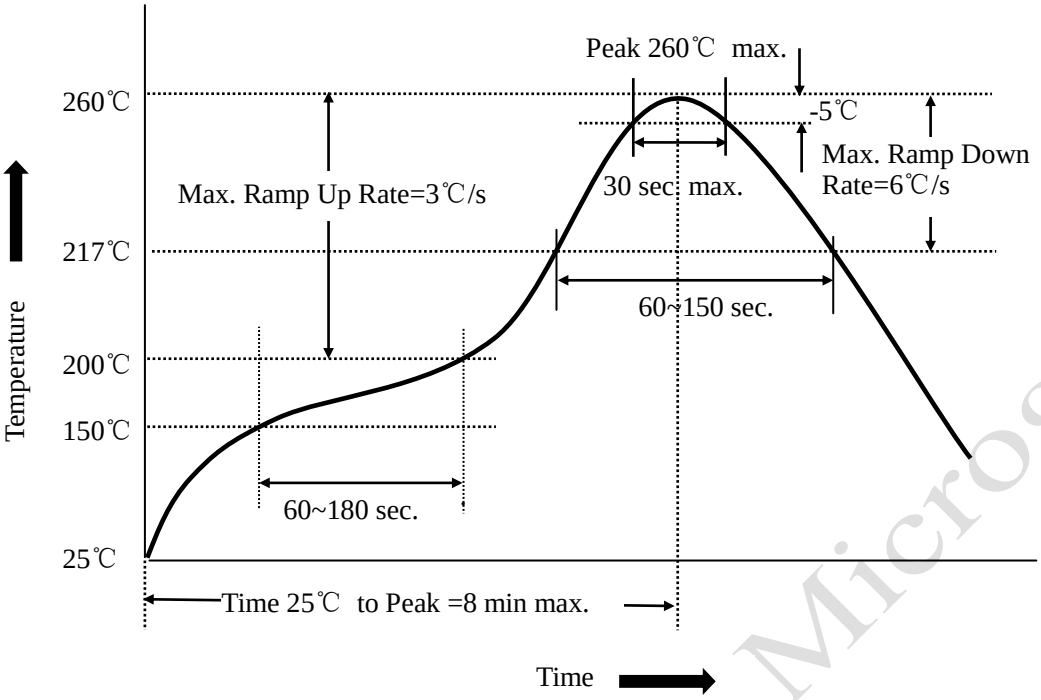
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No.	Item	Requirements	Test Methods and Remarks	Reference	Sample Size
11	Terminal Strength	No appearance defect	①The test samples shall be soldered to the board. ②17.64N, 60s.  	AEC-Q200 (AEC-Q200-006)	10

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7. Recommended Soldering Conditions

(1) Reflow soldering conditions



*Above reflow soldering curve is from J-STD-020D.

(2) Iron soldering

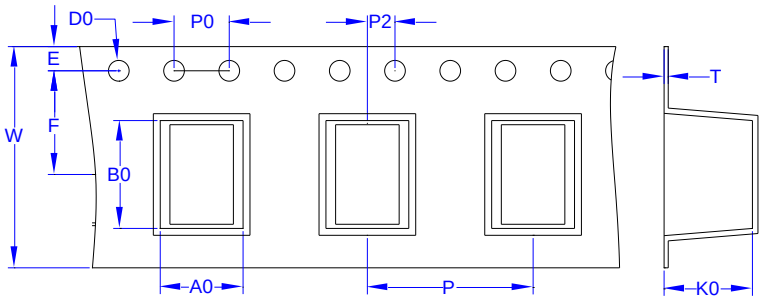
The following conditions must be strictly followed when using a soldering iron.

Pre-heating	150℃ 1 minute
Tip temperature	350℃ max
Soldering iron output	30w max
End of soldering iron	Φ1mm max
Soldering time	3 seconds max

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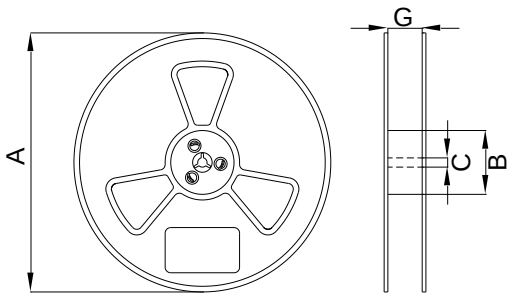
8.Packaging

(1) Dimension of tape (Unit: mm)



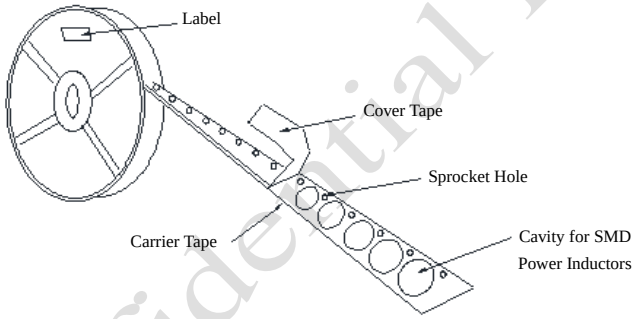
W	16.0±0.3
F	7.5±0.1
E	1.75±0.1
P	12.0±0.1
P0	4.0±0.1
P2	2.0±0.1
A0	5.0±0.1
B0	7.8±0.1
K0	6.4±0.1
D0	1.50+0.1/-0.0
T	0.40±0.05

(2) Dimension of reel (Unit: mm)



Symbol	Dimension
A	330±2
B	100±2
C	13.5±0.2
G	17.4±1.0

(3) Taping figure and drawing direction

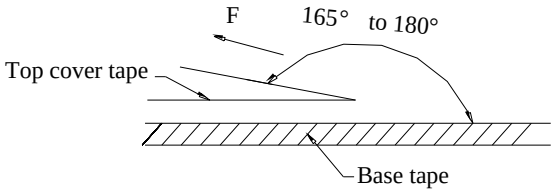


(4) Packaging quantities: 500PCS/Reel.

(5) Peeling strength of cover tapes

The peel force of top cover tape shall be between 0.1N to 1.3 N.

*the peel force standard is from EIA-481-D



Room Temp. (℃)	Room Humidity (%)	Room aim (hpa)	Peel Speed mm/min
5-35	45-85	860-1060	300

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9. Products Storage

(1) Storage period

Products which inspected in MICROGATE over 24 months ago should be examined and used, which can be confirmed with inspection No. marked on the container. Solderability should be checked if this period is exceeded.

（2） Storage conditions

Products should be storage in the warehouse on the following conditions:

Temperature: -10 ~+ 40℃

Humidity: Less than 80% relative and humidity

No rapid change on temperature and humidity.

（3） Don’t keep products in corrosive gases such as sulfur, chlorine gas or acid, or it may cause oxidization of electrode, resulting in poor solderability.

（4） Products should be storage on the palette for the prevention of the influence from humidity, dust and so on.

（5） Products should be storage in the warehouse without heat shock, vibration, direct sunlight and so on.

（6） Products should be storage under the airtight packaged condition.

10. Environment

Compliant with RoHS, Halogen-free, REACH regulations. Test report is available upon request.

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