



SPECIFICATION FOR APPROVAL

CUSTOMER	_____
CUST. PART NO.	_____
CUST. DOC. REV.	_____
DESCRIPTION	MOLDING POWER CHOKE(RoHS+H.F.)
SAMPLE LOT NO.	_____
PART NO.	MCS1265-XXXMT1
DOC. REV.	_____
DATE	_____

Once you approve this part, please sign and return this page to the following marked location.



Customer Signature: _____ Date: _____

- This part currently development section. Production line can produce this series of products.

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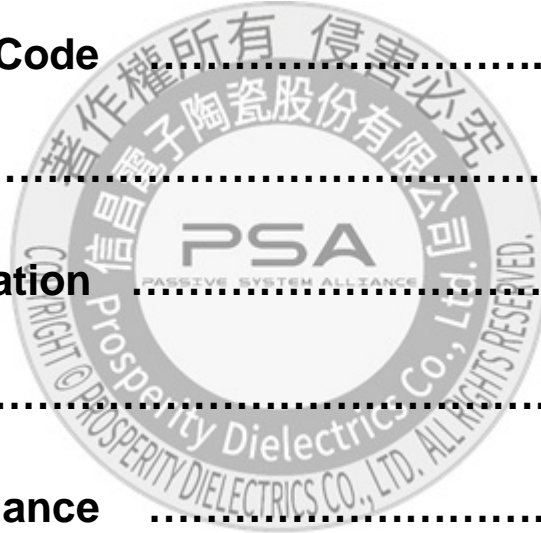
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TESTED BY	CHECKED BY	APPROVED BY

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SPECIFICATION FOR APPROVAL

CUSTOMER	CUSTOMER P/N	REV. —	SPL. LOT NO.	
PART NAME MOLDING POWER CHOKE(RoHS+H.F.)	PART NO. MCS1265-XXXMT1	REV.	DATE OF ISSUE	Q'TY 0 PCS

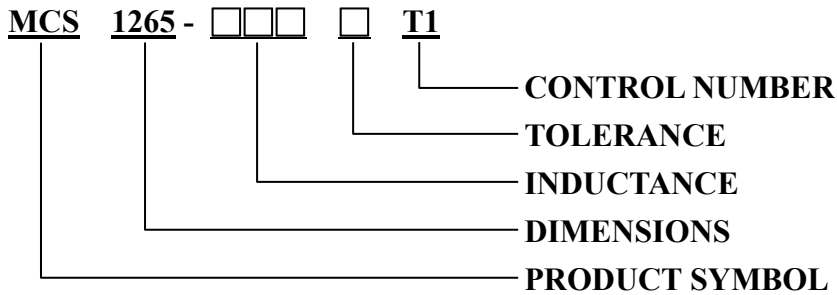
ENGINEERING CHANGE NOTICE - RECORD

REVISION NO.	REVISION DESCRIPTION	AUTHOR	DATE	REMARK
				

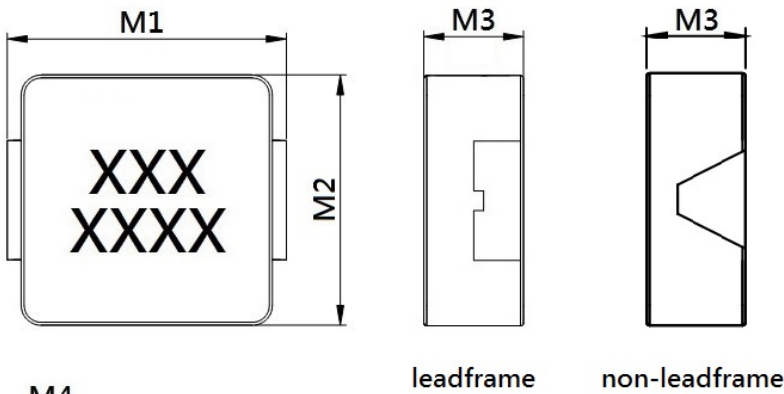
SPECIFICATION FOR APPROVAL

※This is a RoHS and REACH compliant product whose related documents are available on request.
 ※Graphic is only for dimensionally application.

1. PART NUMBERING IDENTIFICATION

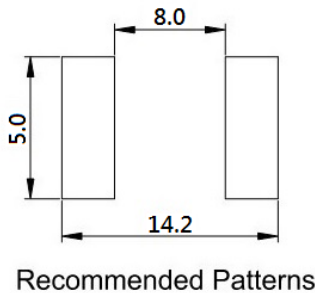


2. MECHANICAL DIMENSION



UNIT: mm

	DIM.	TOL.
M1	13.5	±0.5
M2	12.5	±0.3
M3	6.2	±0.3
M4	2.3	±0.3
M5	4.7	±0.3

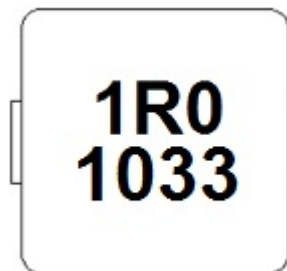


3. MARKING AND DATE CODE

Marking ex:1.0uH → 1R0

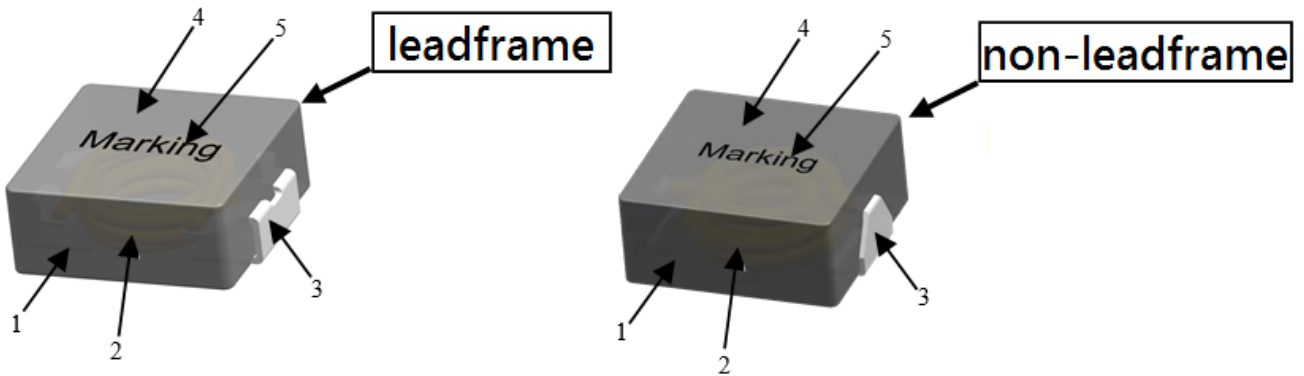
Date code

XX XX → year and weekly ex:1033



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4. MATERIAL LIST



NO	Items	Materials
1	Core	Carbonyl Powder.
2	Wire	Polyester Wire or equivalent.
3	Terminal	leadframe: 100% Pb free solder (Ni+Sn) non-leadframe: 100% Pb free solder
4	Ink	Halogen-free ketone
5	paint	Epoxy resin

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5. ELECTRICAL SPECIFICATION

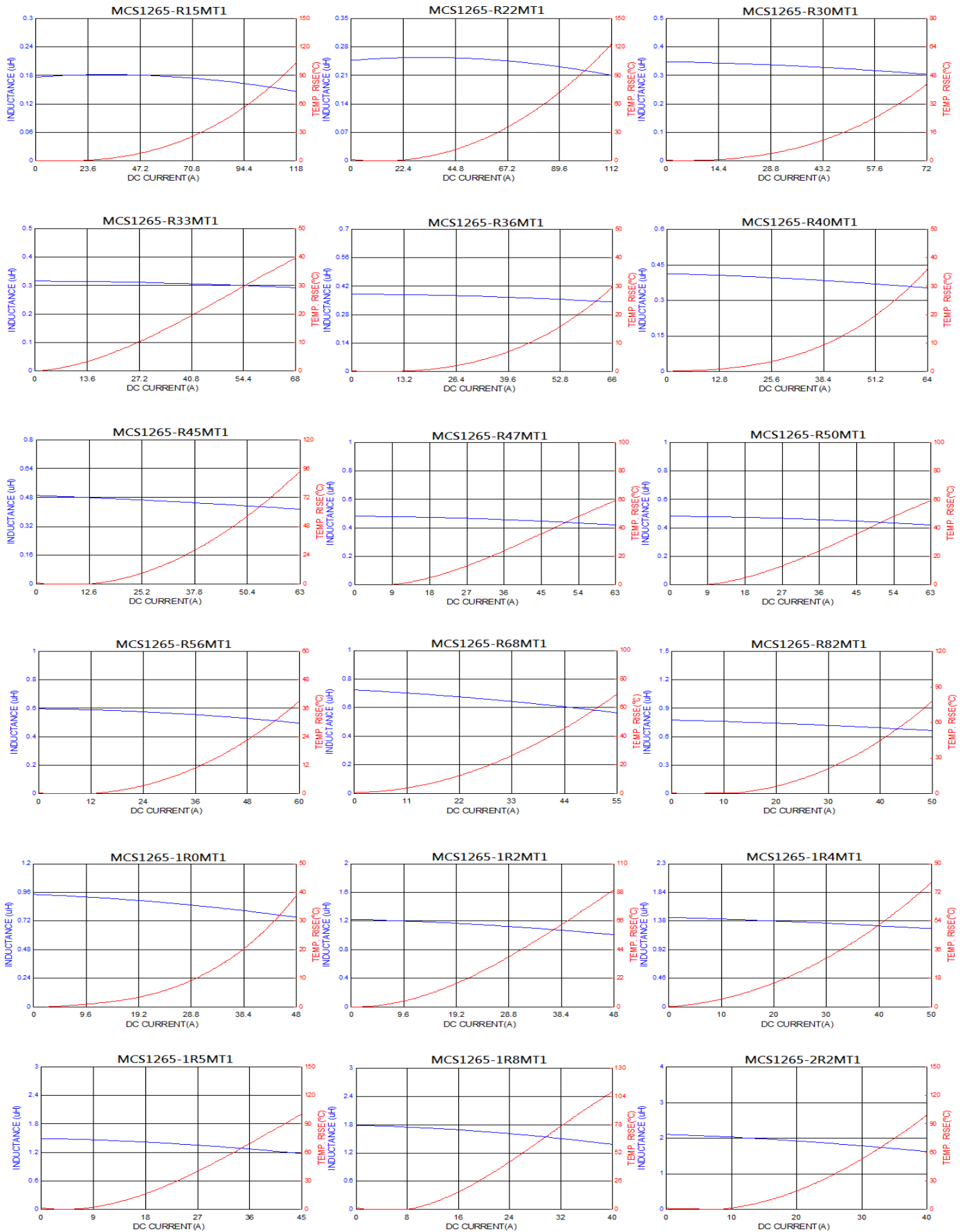
Part number	Inductance (μ H) $\pm 20\%$	DC Resistance (m Ω) Typical	DC Resistance (m Ω) MAX.	I rms (A) Typical	I rms (A) MAX.	I sat (A) Typical	I sat (A) MAX.	Type
MCS1265-R15MT1	0.15	0.49	0.60	55.0	50.0	118.0	108.0	non-leadframe
MCS1265-R22MT1	0.22	0.47	0.60	53.0	48.0	112.0	102.0	non-leadframe
MCS1265-R30MT1	0.30	0.6	0.72	48.0	43.0	72.0	67.0	non-leadframe
MCS1265-R33MT1	0.33	0.65	0.8	46.0	42.0	68.0	63.0	non-leadframe
MCS1265-R36MT1	0.36	0.7	0.9	45.0	41.0	66.0	61.0	non-leadframe
MCS1265-R40MT1	0.40	0.7	1.0	44.0	40.0	64.0	60.0	non-leadframe
MCS1265-R45MT1	0.45	0.9	1.2	42.0	38.0	63.0	59.0	non-leadframe
MCS1265-R47MT1	0.47	0.9	1.2	41.0	37.0	63.0	59.0	non-leadframe
MCS1265-R50MT1	0.50	0.92	1.25	40.0	36.0	60.0	56.0	non-leadframe
MCS1265-R56MT1	0.56	1.05	1.2	37.0	33.0	58.0	55.0	non-leadframe
MCS1265-R68MT1	0.68	1.25	1.5	35.0	32.0	55.0	52.0	non-leadframe
MCS1265-R82MT1	0.82	1.5	1.9	33.0	31.0	50.0	47.0	non-leadframe
MCS1265-1R0MT1	1.00	1.7	2.3	30.0	27.0	48.0	45.0	non-leadframe
MCS1265-1R2MT1	1.20	1.9	2.4	28.0	25.0	47.0	44.0	non-leadframe
MCS1265-1R4MT1	1.40	2.1	2.6	27.0	24.5	46.0	43.0	non-leadframe
MCS1265-1R5MT1	1.50	2.5	3.0	27.0	24.5	45.0	42.0	non-leadframe
MCS1265-1R8MT1	1.80	3.6	4.0	24.0	22.0	40.0	38.0	leadframe
MCS1265-2R2MT1	2.20	3.8	4.2	22.0	20.0	37.0	35.0	leadframe
MCS1265-2R7MT1	2.70	4.3	5.5	20.0	18.0	32.0	30.0	leadframe
MCS1265-3R3MT1	3.30	5.7	6.8	18.0	16.0	30.0	28.0	leadframe
MCS1265-4R7MT1	4.70	7.0	8.4	13.5	11.5	28.0	26.0	leadframe
MCS1265-5R6MT1	5.60	8.5	10	12.5	11.0	23.0	21.0	leadframe
MCS1265-6R8MT1	6.80	9.5	11.5	11.5	10.0	18.0	16.0	leadframe
MCS1265-7R0MT1	7.00	10	12.3	11.2	9.8	17.7	15.7	leadframe
MCS1265-8R2MT1	8.20	12	15.5	10.5	9.5	16.0	14.5	leadframe
MCS1265-100MT1	10.0	13.2	16.5	10.0	9.0	15.5	14.0	leadframe
MCS1265-120MT1	12.0	16	20	9.5	8.5	14.0	13.0	leadframe
MCS1265-130MT1	13.0	21	24	9.0	8.0	13.0	12.0	leadframe
MCS1265-150MT1	15.0	23.2	28	9.0	8.0	12.5	11.5	leadframe
MCS1265-220MT1	22.0	32.5	37	9.0	8.0	12.0	11.0	leadframe
MCS1265-250MT1	25.0	40	47	8.5	7.5	11.5	10.5	leadframe
MCS1265-330MT1	33.0	48	58	8.0	7.0	11.0	10.0	leadframe
MCS1265-470MT1	47.0	76	90	6.5	6.0	9.5	8.8	leadframe
MCS1265-101MT1	100	145	165	4.2	4.1	5.5	5.0	leadframe

Note:

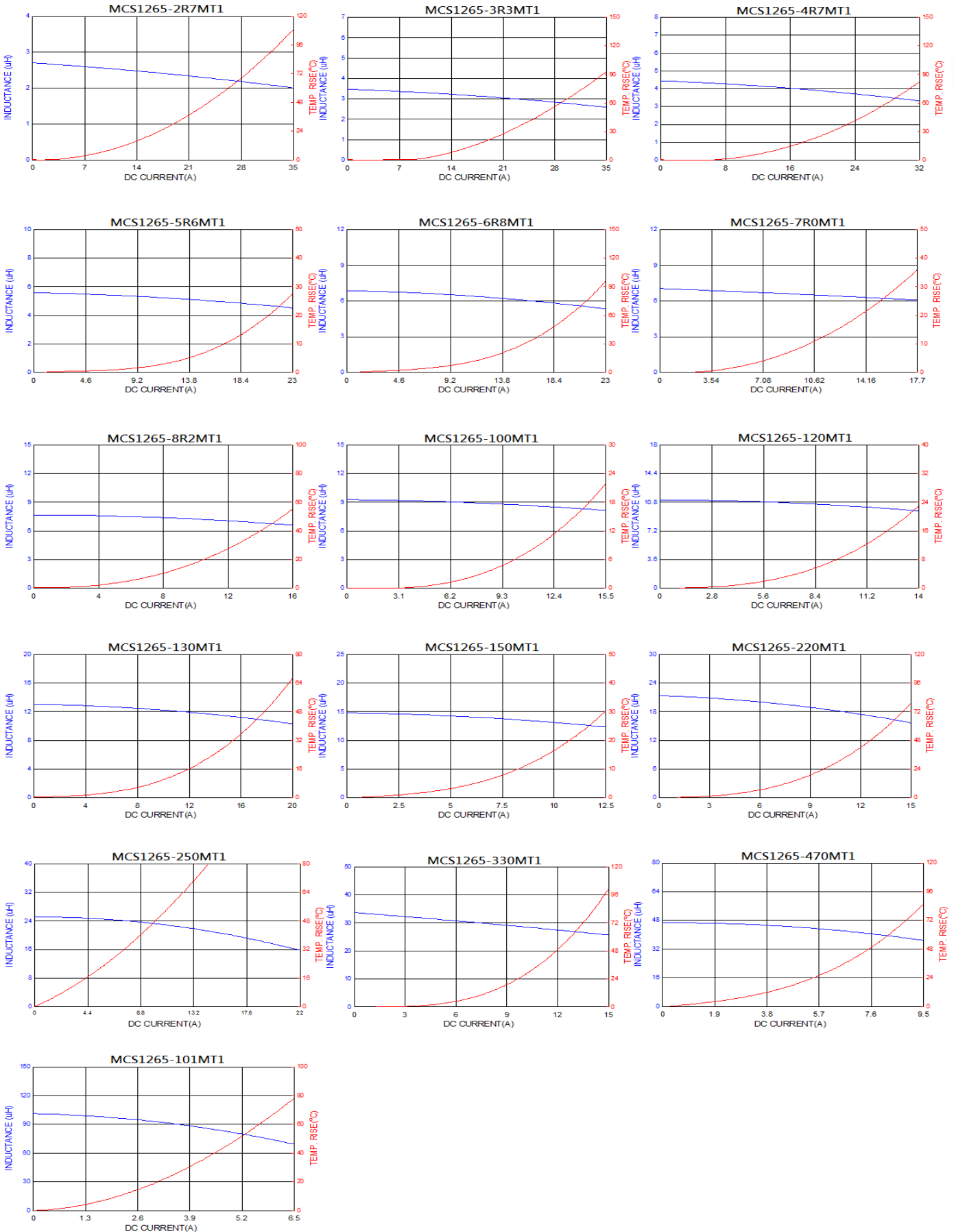
1. Test frequency: 100KHz/1.0V
2. Operating temperature: -40~+125°C (Including self - temperature rise)
3. Storage temperature:
 - 3-1. -10~+40°C, 50~60% RH (Product with taping)
 - 3-2. -40~+125°C (on board)
4. All test data referenced to 25°C ambient
5. Testing Instrument: Inductance: HP4284A, CH11025, CH3302, CH1320, CH1320S LCR Meter / DC Resistance: CH16502, Agilent33420A Micro ohm meter
6. Heat Rated Current (Irms) will cause the coil temperature rise approximately Δt of 40°C
7. Saturation Current (Isat) will cause L0 to drop approximately 30%
8. 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
9. MSL: Level 1

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6. ELECTRICAL CURVE



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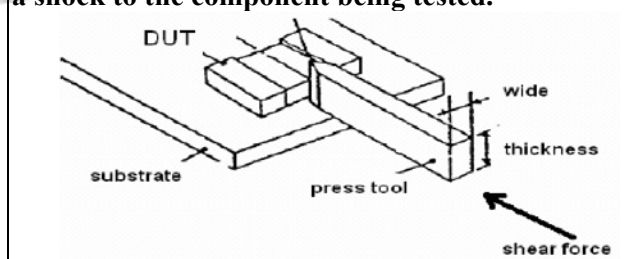
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7. RELIABILITY PERFORMANCE

Item	Performance	Test Condition
Life Test		<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles)</p> <p>Temperature: 125±2°C (Inductor)</p> <p>Applied current: rated current</p> <p>Duration: 1000±12hrs</p> <p>Measured at room temperature after placing for 24±2 hrs.</p>
Load Humidity		<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles)</p> <p>Humidity: 85±2% R.H.</p> <p>Temperature: 85°C±2°C</p> <p>Duration: 1000hrs Min. with 100% rated current</p> <p>Measured at room temperature after placing for 24±2 hrs.</p>
Moisture Resistance	<p>Appearance: No damage.</p> <p>Impedance: within ±15% of initial value.</p> <p>Inductance: within ±10% of initial value.</p> <p>Q: Shall not exceed the specification value.</p> <p>RDC: within ±15% of initial value and shall not exceed the specification value.</p>	<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles)</p> <ol style="list-style-type: none"> 1. Baked at 50°C for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs. 3. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs, keep at 25°C for 2 hrs then keep at -10°C for 3 hrs 4. Keep at 25°C 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Thermal shock		<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles)</p> <p>Condition for 1 cycle</p> <p>Step1: -55±2°C 30±5min</p> <p>Step2: 25±2°C ≤0.5min</p> <p>Step3: 125±2°C 30±5min</p> <p>Number of cycles: 500</p> <p>Measured at room temperature after placing for 24±2 hrs.</p>
Vibration		<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020DClassification Reflow Profiles)</p> <p>Oscillation Frequency: 10Hz~2KHz~10Hz for 20 minutes</p> <p>Equipment: Vibration checker</p> <p>Total Amplitude: 10g</p> <p>Testing Time: 12 hours(20 minutes, 12 cycles each of 3 orientations)</p>

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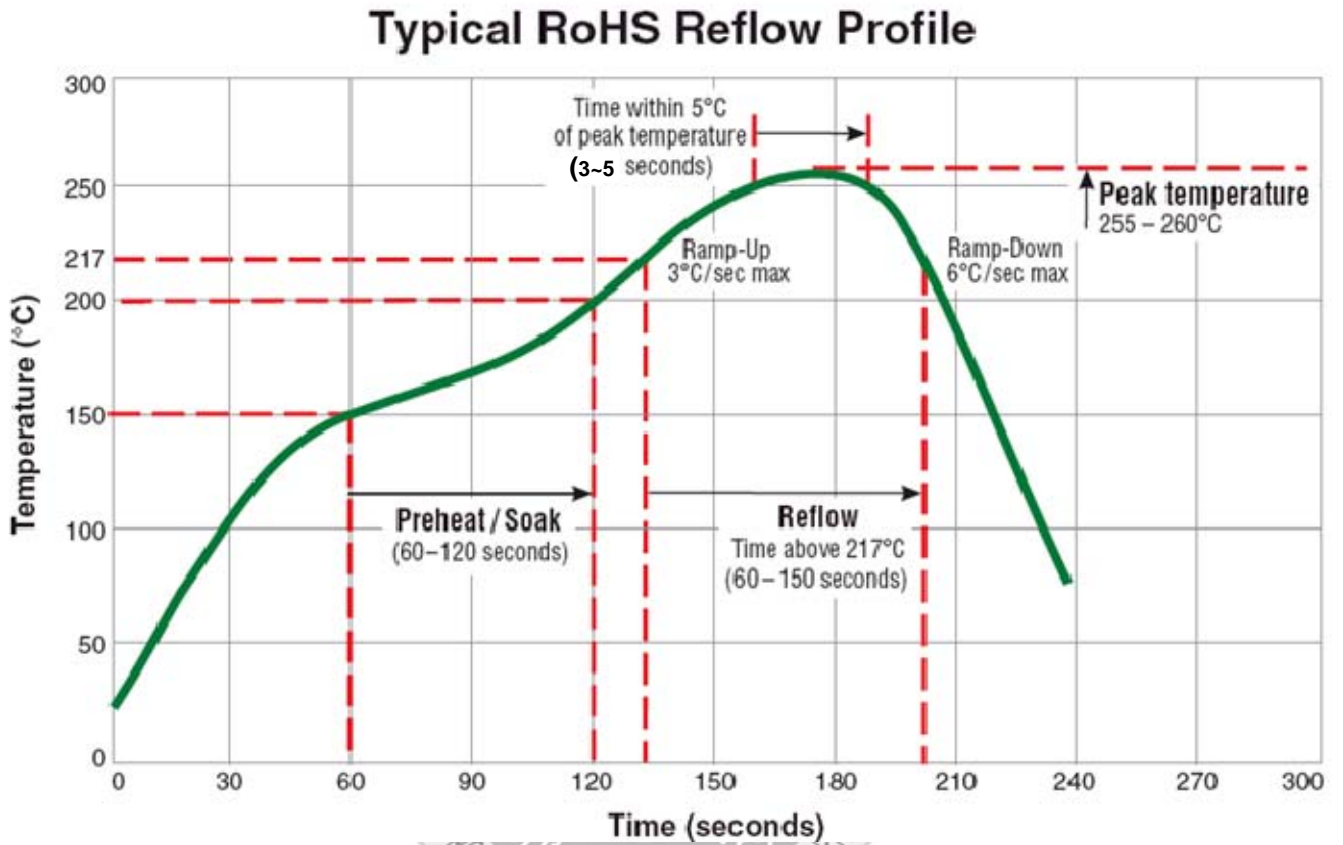
Item	Performance	Test Condition															
Bending	Appearance: No damage. Impedance: within±15% of initial value Inductance: within±10% of initial value Q: Shall not exceed the specification value. RDC: within ±15% of initial value and shall not exceed the specification value	Shall be mounted on a FR4 substrate of the following dimensions: ≥0805 inch(2012mm): 40x100x1.2mm <0805 inch(2012mm): 40x100x0.8mm Bending depth: ≥0805 inch(2012mm): 1.2mm <0805 inch(2012mm): 0.8mm duration of 10 sec.															
Shock	RDC: within ±15% of initial value and shall not exceed the specification value	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Type</th> <th>Peak value (g's)</th> <th>Normal duration (D) (ms)</th> <th>Wave form</th> <th>Velocity change (V)ft/sec</th> </tr> </thead> <tbody> <tr> <td>SMD</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> <tr> <td>Lead</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> </tbody> </table>	Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (V)ft/sec	SMD	50	11	Half-sine	11.3	Lead	50	11	Half-sine	11.3
Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (V)ft/sec													
SMD	50	11	Half-sine	11.3													
Lead	50	11	Half-sine	11.3													
Solder ability	More than 95% of the terminal electrode should be covered with solder	Preheat: 150°C,60sec. Solder: Sn96.5% Ag3% Cu0.5% Temperature: 245±5°C Flux for lead free: Rosin. 9.5% Dip time: 4±1sec Depth: completely cover the termination															
Resistance to Soldering Heat		Depth: completely cover the termination <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Temperature(°C)</th> <th>Time(s)</th> <th>Temperature ramp/immersion and emersion rate</th> <th>Number of heat cycles</th> </tr> </thead> <tbody> <tr> <td>260 ±5 (solder temp)</td> <td>10±1</td> <td>25mm/s ±6 mm/s</td> <td>1</td> </tr> </tbody> </table>	Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260 ±5 (solder temp)	10±1	25mm/s ±6 mm/s	1							
Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles														
260 ±5 (solder temp)	10±1	25mm/s ±6 mm/s	1														
Terminal Strength	Appearance: No damage. Impedance: within±15% of initial value Inductance: within±10% of initial value Q: Shall not exceed the specification value. RDC: within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020Dclassification Reflow Profiles) With the component mounted on a PCB with the device to be tested, apply a force (≥0805: 1kg, <=0805: 0.5kg) to the side of a device being tested. This force shall be applied for 60+1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.															



Note: When there are questions concerning measurement result: measurement shall be made after 48±2 hours of recovery under the standard condition.

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8. TYPICAL RoHS REFLOW PROFILE

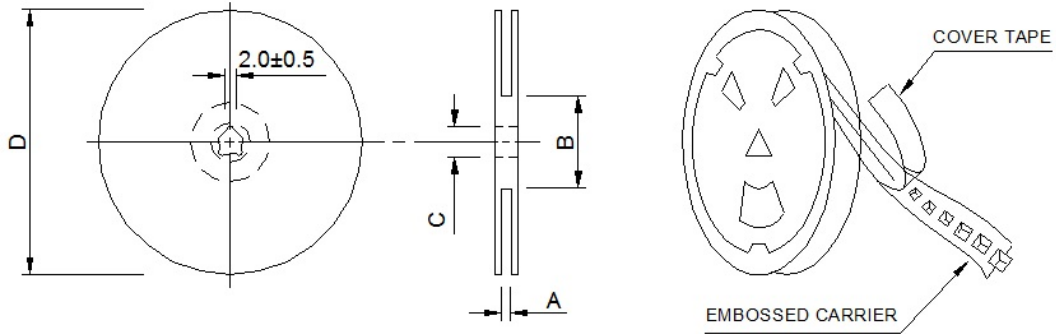


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9. PACKING

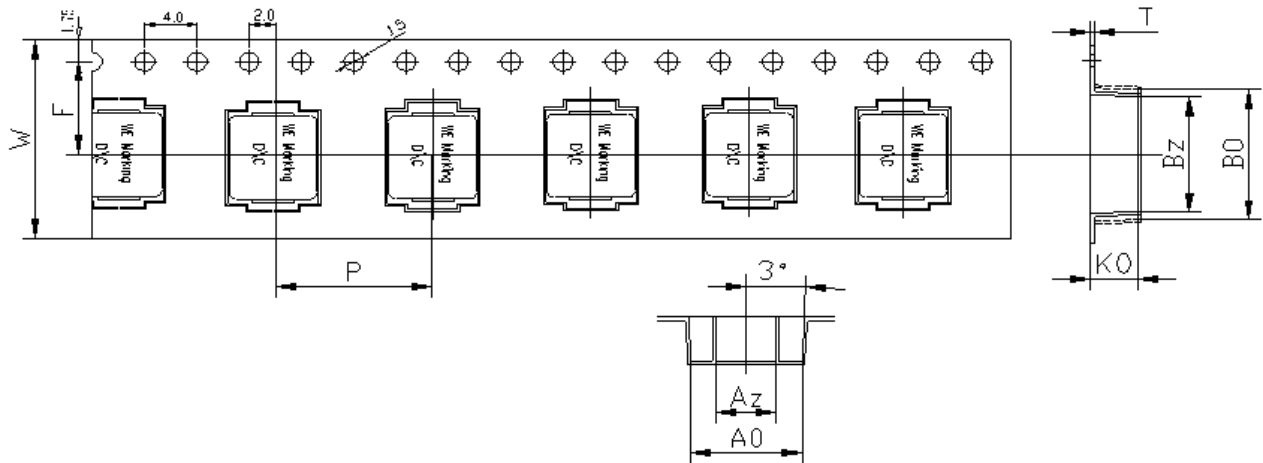
9-1 Reel Dimension



UNIT: mm

A	B	C	D
24.4+2/-0	100±2	13+0.5/-0.2	330

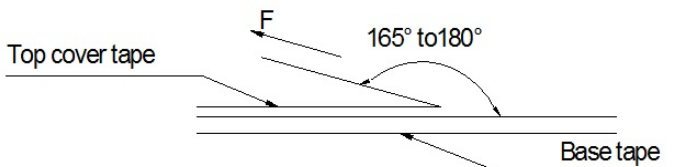
9-2 Tape Dimension



UNIT: mm

Bo	Bz	Ao	Az	Ko	P	W	F	t
14.2±0.1	13.0±0.1	13.0±0.1	7.0±0.1	7.0±0.1	16.0±0.1	24±0.3	11.5±0.1	0.35±0.05

9-3 Tearing Off Force



The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions (referenced ANSI/EIA-481-D-2008 of 4.11 standard).

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

9-4 Packaging Quantity

Chip/Reel	500
Inner box	1000
Carton	4000