

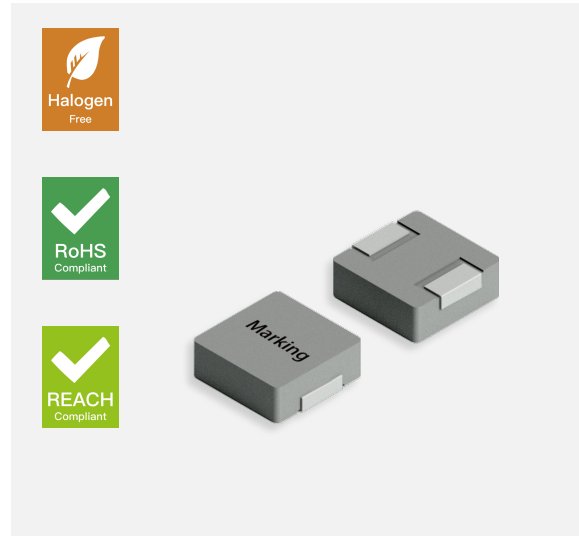
TOM0412 Series

FEATURES

- Halogen Free ,ROHS compliance.
- High rated current.
- Low loss realized with low DCR.
- Low core loss.
- 125°C maximum total temperature operation.
- Ultra low buzz noise due to molding construction.
- High performance (Isat) realized by metal dust core.

APPLICATIONS

- Laptops and PCs
- DC/DC converter
- Battery powered devices
- Base stations
- SSD modules
- Switch and servers



PRODUCT IDENTIFICATION

TOM	0412	R15	M
1	2	3	4

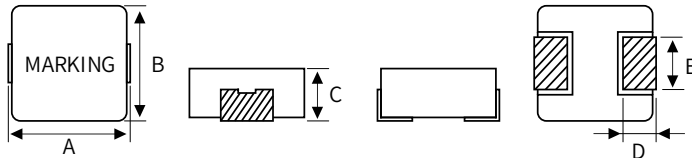
1. Series Name : Molded SMD Power Inductor

2. Size Code : Dimensions (unit:mm)

3. Nominal Inductance Value : R33=0.33μH, 1R0=1.0μH, 100=10μH

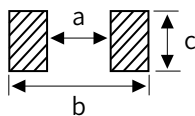
4. Inductance Tolerance : N=±30%, M=±20%

DIMENSIONS



Series	A	B	C	D	E
TOM0412	4.40±0.35	4.20±0.25	1.00±0.20	0.80±0.30	2.00±0.30

RECOMMEND LAND PATTERN



Series	a typ	b typ	c typ
TOM0412	2.20	5.20	2.50

APPLICATIONS

Part NO.	Inductance L0 (μH)	Test Condition	Tolerance (%)	DCR (mΩ) Max.	Isat (A) Typ.	Irms (A) Typ.
▪ TOM0412 Series						
TOM0412-R15M	0.15	100kHz/1V	±20	9.00	15.0	7.50
TOM0412-R22M	0.22	100kHz/1V	±20	11.0	11.0	7.00
TOM0412-R33M	0.33	100kHz/1V	±20	19.0	8.40	6.50
TOM0412-R47M	0.47	100kHz/1V	±20	21.0	6.80	6.00
TOM0412-R68M	0.68	100kHz/1V	±20	36.0	6.00	4.70
TOM0412-1R0M	1.00	100kHz/1V	±20	47.0	5.50	4.50
TOM0412-1R5M	1.50	100kHz/1V	±20	75.0	4.00	3.25
TOM0412-2R2M	2.20	100kHz/1V	±20	83.5	3.00	2.75
TOM0412-3R3M	3.30	100kHz/1V	±20	168	3.00	2.20
TOM0412-4R7M	4.70	100kHz/1V	±20	195	2.20	1.80

Notes

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 55 °C to + 125 °C
3. I_{rms} (A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)
4. I_{sat}(A):DC current (A) that will cause L0 to drop approximately 30 %
5. 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.

MECHANICAL RELIABILITY

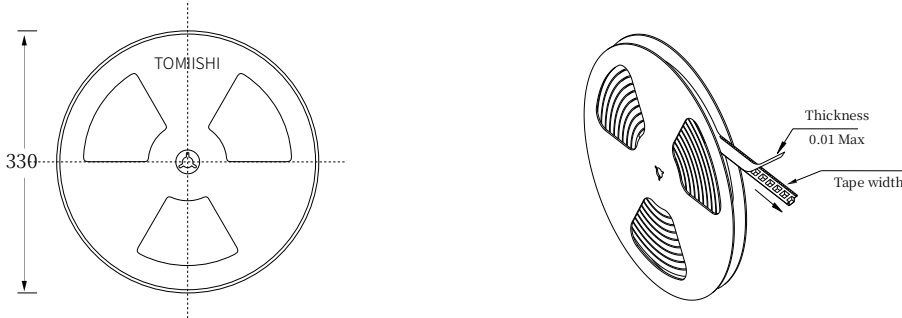
TEST ITEM	SPECIFICATION	TEST DETAILS
Mechanical shock	1. No case deformation or change in appearance 2. $\Delta L/L_0 \leq \pm 10\%$	1. Acceleration : 100G 2. Pulse time : 6ms 3. Direction : $\pm X \pm Y \pm Z$ 4. 3 times in each positive and negative direction of 3 mutual perpendicular directions
Mechanical vibration	1. No case deformation or change in appearance 2. $\Delta L/L_0 \leq \pm 10\%$	1. Reflow : 2times 2. Frequency : 10HZ~55HZ~10HZ, 20 Min/Cycles 3. Amplitude : 1.52 mm 4. Directions : X,Y,Z 5. Time : 12 cycle / direction
Solderability	1. No case deformation or change in appearance 2. New solder coverage More than 95%	1. Preheat: 155°C \pm 5°C , 60S \pm 2S 2. Tin : lead-free. 3. Temperature : 240°C \pm 5°C , flux 3.0S \pm 0.5S.

ENDURANCE RELIABILITY

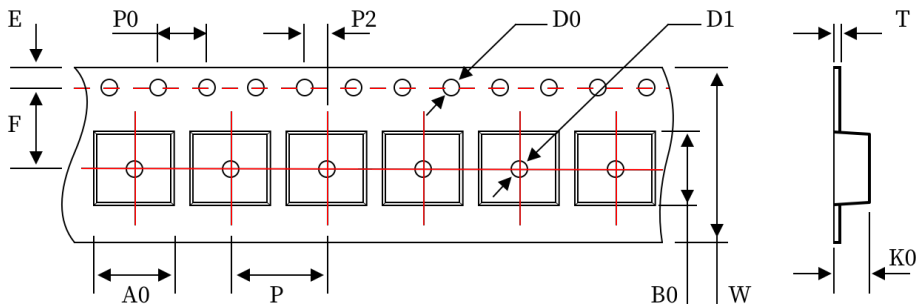
TEST ITEM	SPECIFICATION	TEST DETAILS															
Thermal Shock	Inductance change : Within $\pm 10\%$ Without distinct damage in appearance	1. First -55°C for 30 minutes, last 125°C for 30 minutes as 1 cycle. Go through 1000 cycles 2. Max transfer time is 3 minutes 3. Measured at room temperature after placing for 24 \pm 2 hours <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>NO.</th> <th>Temperature</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55\pm2°C(Thermostat No.1)</td> <td>30 min.</td> </tr> <tr> <td>2</td> <td>Standard atmospheric</td> <td>Within 3 minutes No.1→No.2</td> </tr> <tr> <td>3</td> <td>125\pm2°C(Thermostat No.2)</td> <td>30 min.</td> </tr> <tr> <td>4</td> <td>Standard atmospheric</td> <td>Within 3 minutes No.2→No.1</td> </tr> </tbody> </table>	NO.	Temperature	Duration	1	-55 \pm 2°C(Thermostat No.1)	30 min.	2	Standard atmospheric	Within 3 minutes No.1→No.2	3	125 \pm 2°C(Thermostat No.2)	30 min.	4	Standard atmospheric	Within 3 minutes No.2→No.1
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3	125 \pm 2°C(Thermostat No.2)	30 min.															
4	Standard atmospheric	Within 3 minutes No.2→No.1															
Humidity Resistance	Inductance change : Within $\pm 10\%$ Without distinct damage in appearance	1. Reflow 2 times 2. 85°C,85%RH,1000 hours 3. Measured at room temperature after placing for 24 \pm 2 hours															
Low temperature storage	Inductance change : Within $\pm 10\%$ Without distinct damage in appearance	1. Temperature : -55 \pm 2°C 2. Time : 1000 hours 3. Measured at room temperature after placing for 24 \pm 2 hours															
High temperature storage	Inductance change : Within $\pm 10\%$ Without distinct damage in appearance	1. Temperature : +125 \pm 2°C 2. Time : 1000 hours 3. Measured at room temperature after placing for 24 \pm 2 hours															

PACKAGING INFORMATION

REEL DIMENSION (mm)



TAPING DIMENSIONS (mm)



Type	Tape dimensions (mm)											
Series	W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F
TOM0412	12± 0.3	8± 0.1	4.0± 0.1	2.0± 0.1	1.5± 0.1	1.5± 0.1	0.35± 0.05	4.5± 0.1	4.9± 0.1	1.5± 0.1	1.75± 0.1	5.5± 0.1

PACKAGING QUANTITY (Standard)

Type	Reel	Inner Box	Carton Box
TOM0412	3000 pcs / Reel	4Reel / Box (12,000 pcs)	4 Middle boxes (48,000 pcs)

PEEL FORCE OF TOP COVER TAPE

The peel speed shall be about 300mm/minute

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

