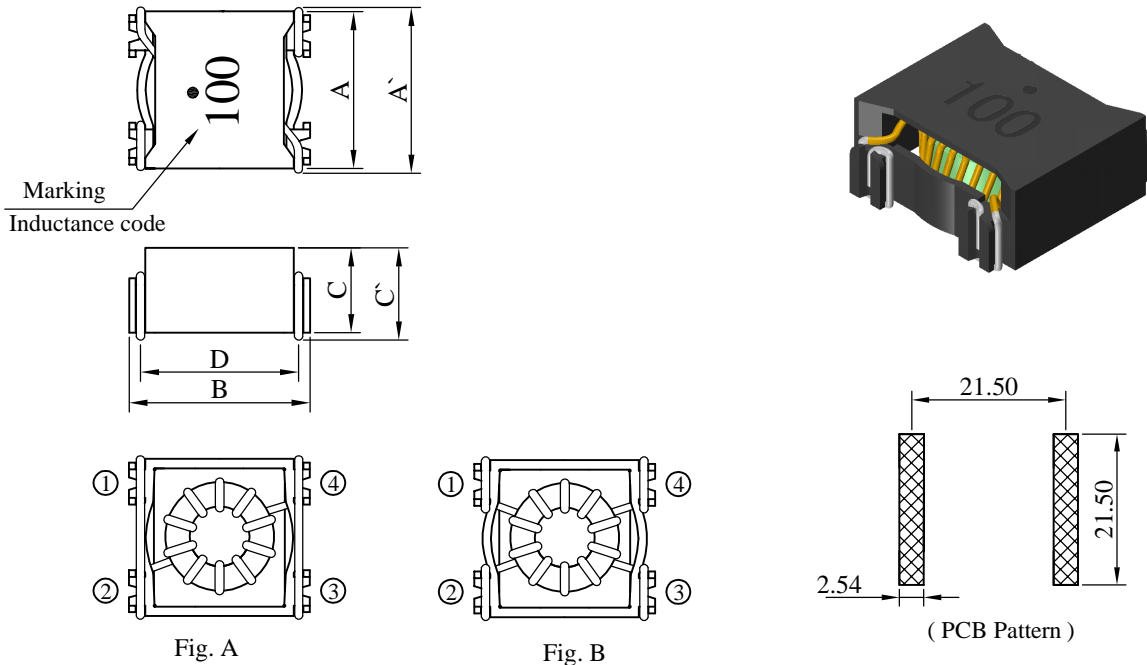


SPECIFICATION FOR APPROVAL

REF. :

| | | | | | |
|------------|---------------------------|---------------|------------|------------------|---|
| PROD. NAME | SMD Toroidal Power Filter | ABC'S DWG NO. | | ST2412□□□□L□-□□□ | |
| | | REV. | 20160427-C | PAGE | 1 |

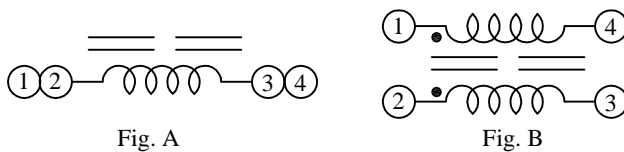
I . Configuration and dimensions :



Unit : m/m

| A | A' | B | C | C' | D |
|-------------|------------|-------------|------------|------------|------------|
| 20.96 ±0.30 | 22.00 max. | 23.50 ±0.40 | 10.00 typ. | 11.80 max. | 21.50 typ. |

II . Schematic diagram :

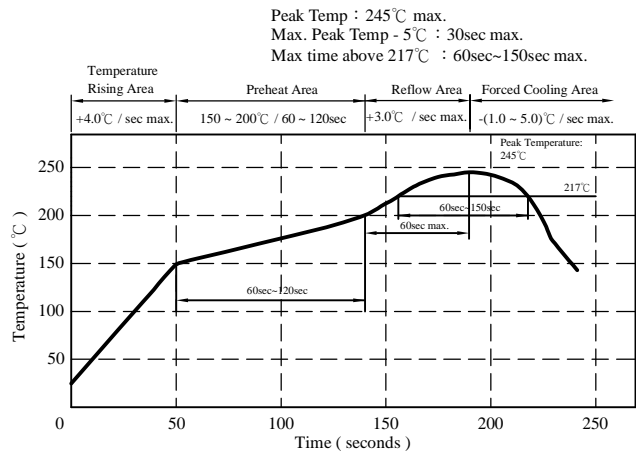


III . Description :

- a . Iron toroidal core construction.
- b . Enamelled copper wire : F class
- c . Product weight : 9.0 g (ref.)
- d . Moisture sensitivity Level 1
- e . Products comply with RoHS' requirements
- f . Halogen free available

IV . General specification :

- a . Storage Temp. : -40°C ----+125°C
- b . Operating Temp. : -40°C----+125°C
(Temp. rise included)
- c . Resistance to solder heat : 245°C.10 Secs.



AR-001C

SPECIFICATION FOR APPROVAL

REF. :

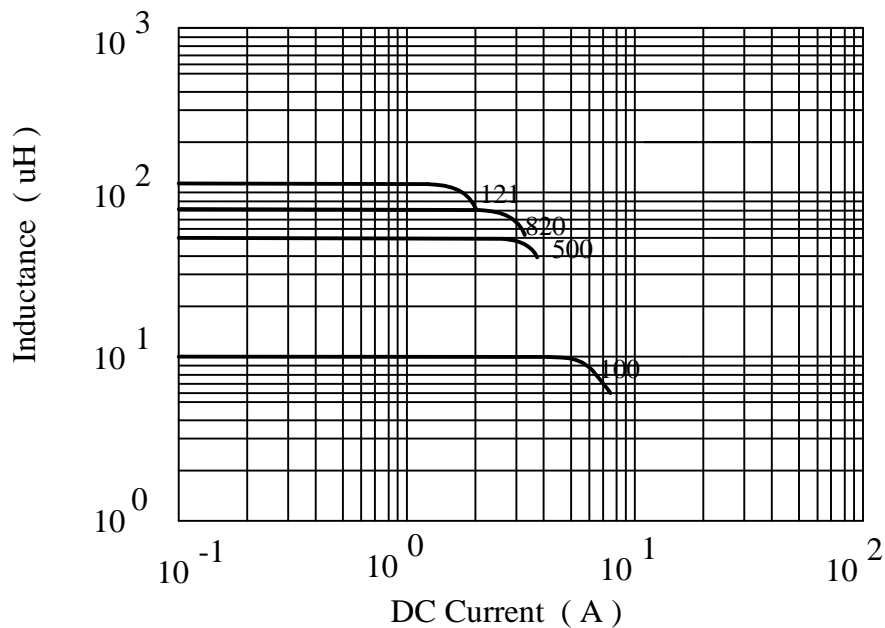
| | | | | | |
|------------|---------------------------|---------------|------------------|------|---|
| PROD. NAME | SMD Toroidal Power Filter | ABC'S DWG NO. | ST2412□□□□L□-□□□ | | |
| | | REV. | 20160427-C | PAGE | 2 |

V . Electrical characteristics :

| DWG No. | Inductance @10kHz, 0.1 Vrms (μH) | RDC(mΩ) (Each Winding) | | Irms (A) typ. | Isat (A) typ. | Fig. |
|------------------|--|---------------------------|------|---------------------|---------------------|------|
| | | max. | typ. | | | |
| ST2412100ML□-□□□ | 10.0 ± 20% | 16.5 | 12.7 | 10.0 | 7.50 | B |
| ST2412220ML□-□□□ | 22.0 ± 20% | 31.0 | 24.5 | 6.20 | 5.80 | A |
| ST2412330ML□-□□□ | 33.0 ± 20% | 41.7 | 32.1 | 5.00 | 4.80 | A |
| ST2412470ML□-□□□ | 47.0 ± 20% | 58.2 | 43.6 | 4.00 | 3.80 | A |
| ST2412500ML□-□□□ | 50.0 ± 20% | 60.0 | 45.0 | 4.00 | 3.70 | A |
| ST2412820ML□-□□□ | 82.0 ± 20% | 80.0 | 61.0 | 3.40 | 2.80 | A |
| ST2412121ML□-□□□ | 120.0 ± 20% | 116.0 | 89.0 | 2.80 | 2.30 | A |

- 1). □ : Packaging information : □ Code
- 2). "-□□□" : Reference code
- 3). Electrical specifications at 25°C
- 4). Irms base on Temp. rise 40°C typ.
- 5). Isat base on $\Delta L/L0A=30\%$ typ.

@ Inductance VS. DC Superposition Characteristics



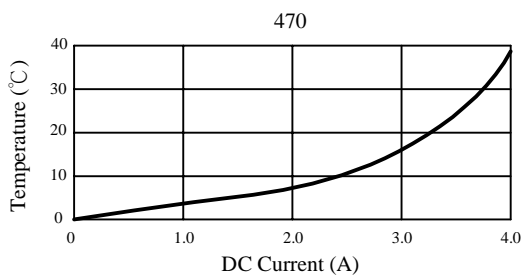
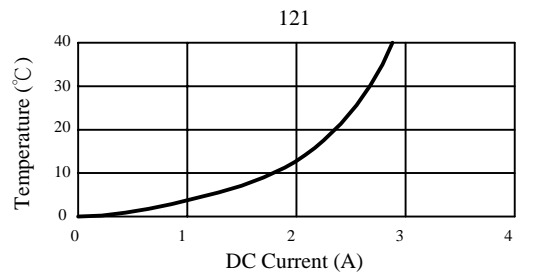
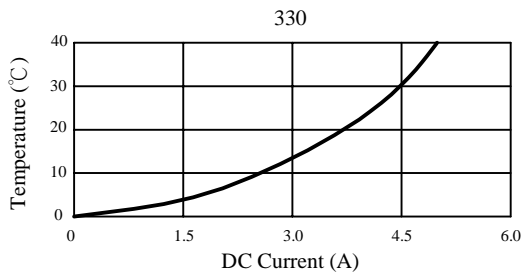
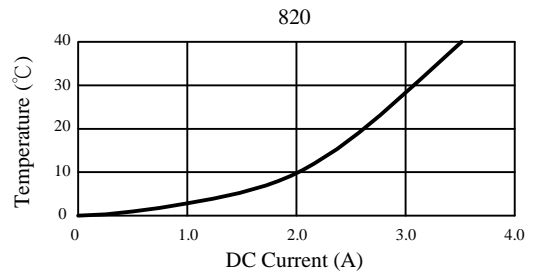
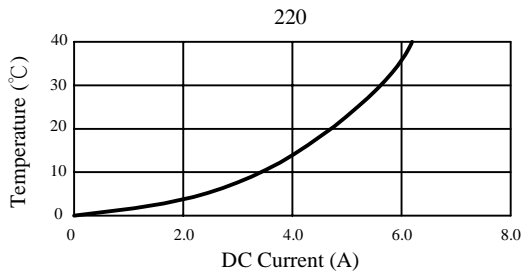
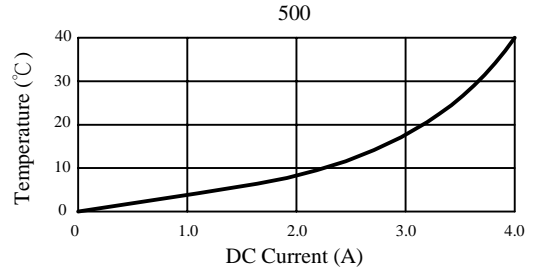
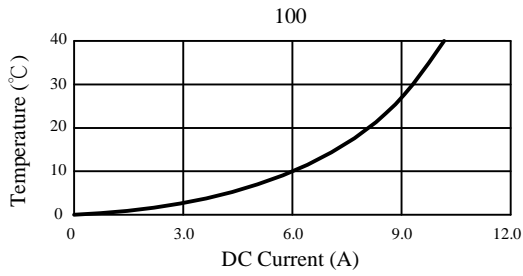
AR-001C

SPECIFICATION FOR APPROVAL

REF. :

| | | | | | |
|---------------|---------------------------|---------------|------------------|------|---|
| PROD. NAME | SMD Toroidal Power Filter | ABC'S DWG NO. | ST2412□□□□L□-□□□ | | |
| | | REV. | 20160427-C | PAGE | 3 |

@ DC Current VS Temperature Rise



AR-001C

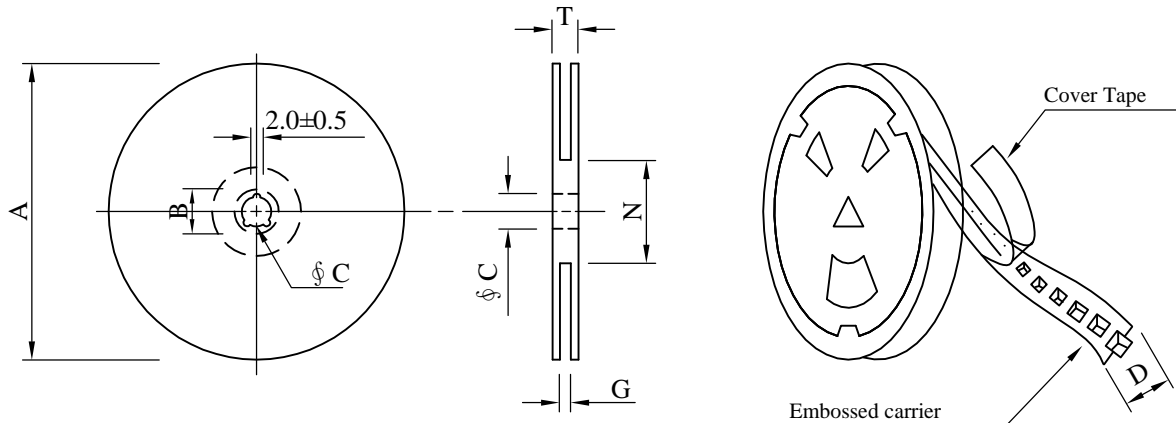
SPECIFICATION FOR APPROVAL

REF. :

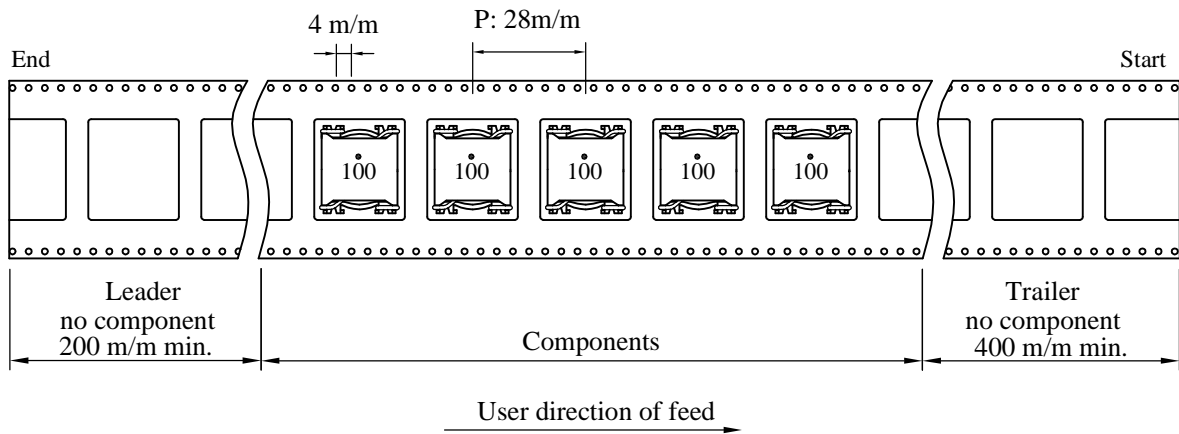
| | | | | | |
|------------|---------------------------|---------------|------------------|------|---|
| PROD. NAME | SMD Toroidal Power Filter | ABC'S DWG NO. | ST2412□□□□L□-□□□ | | |
| | | REV. | 20160427-C | PAGE | 4 |

VI . Packaging information :

(1) Configuration



※Carrier tape width : D



(2) Dimensions : (m/m)

| Style | A | B | C | D | G | N | T |
|---------|-----|----------|--------------------------------------|----------|------------------------------------|-------------------|--------------------|
| 13 - 44 | 330 | 21.0±0.8 | 13.0 ^{+0.5} _{-0.2} | 44.0±0.3 | 44.4 ^{+2.0} ₋₀ | 100 ⁻⁰ | 50.4 ⁺⁰ |

(3) Q'TY & G.W. Per package :

| Code | Inner : Reel | | | Outer : Carton | | |
|------|--------------|-----------|---------|----------------|-----------|--------------|
| | Q'TY (pcs) | G.W. (gw) | Style | Q'TY (pcs) | G.W. (kg) | Size (cm) |
| B | 100 | 1500 | 13 - 44 | 200 | 3.80 | 38 x 37 x 22 |

AR-001C

SPECIFICATION FOR APPROVAL

REF. :

| | | | | | |
|------------|---------------------------|---------------|------------------|------|---|
| PROD. NAME | SMD Toroidal Power Filter | ABC'S DWG NO. | ST2412□□□□L□-□□□ | | |
| | | REV. | 20160427-C | PAGE | 5 |

VII . Reliability test :

| Item | Reference documents | Test Condition | Test Specification |
|-------------------------------------|--|---|---|
| 1.High Temperature Exposure | MIL-STD-202 Method 108 | 1.Temperature: 125±2℃ 2.Time:96±2 hours. | 1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%. |
| 2.Temperature Cycling | JESD22-A 104 | 1.Temperature: -40℃ ~ +125℃ 2.Number of cycle:100 cycle 3.Dwell time:30 minutes | 1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%. |
| 3.Biased Humidity Test | MIL-STD-202 Method 103 | 1.Temperature : 85±2 ℃ 2.Humidity: 85% RH. 3.Time:96±2 Hours | 1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%. |
| 4.Operational Life | JESD22-A 108 | 1.Temperature: 125℃ (Temp. rise included) 2.Time:96±2 hours. 3.Rated current | 1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%. |
| 5.External Visual | JESD22-B 101 & MIL-STD-883 Method 2009 | Inspect product constructions, marking and workmanship. | 1.No pollution on the surface of products. 2.Clear marking. 3.No crack. |
| 6.Physical Dimensions | JESD22-B 100 | Verify physical dimensions to the applicable product detail specification. | Per product specification standard |
| 7.Resistance to solvents | MIL-STD-202 Method 215 | Immerse into solvent for 3±0.5 minutes & brush 10 times for 3 cycles. | 1.No body change in apperance. 2.No marking blurred. 3.Inductance shall not change more than ±20%. |
| 8.Vibration Test | MIL-STD-202 Method 204 | 1.Frequency and Amplitud : 10-2000-10 Hz, 1.5 mm. 2.Direction:X, Y, Z 3.Test duration:2 hours for each direction, 6 hours in total. | 1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%. |
| 9.Resistance To Soldering Heat Test | MIL-STD-202 Method 210 & J-STD020D.1 | 1.Highest temperature : 245±5℃. 2.Time (temp. ≥ 217℃) : 60~150 Second. 3.IR reflow times : 3 times. | 1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%. |
| 10.Saturation Current | JIS C 6436 & User SPEC. | 1.Applied rated current for 5 second. 2.Saturation current | Inductance shall not drop more than 30% typ. |
| 11.Over load | JIS C 6436 & User SPEC. | 1.Applied one and half rated current for a period of 5 minutes. 2.Rated current | No electrical or mechanical damage |
| 12.Temperature Rise Current | JIS C 6436 & User SPEC. | 1.Applied rated current for 10 minutes. 2.Temperature measure by digital surface thermometer. 3.Irms current | Surface temperature rise is less than 40℃ typ. |
| 13.Solderability Test | J-STD-002 & JESD22-B 102 | 1.Baking in pre-testing : 150±5℃ / 16Hours±30 min. 2.Peak temperature : 240±5℃ 3.Time (temp. ≥ 217℃) : 60~150 second. 4.IR reflow times : 1 times. | More than 95% soldering coverage min on terminations. |
| 14.Electrical Characteriazation | MIL-STD-202 Method 304 & User SPEC. | 1.Operating temperature : -40℃~125℃ 2.Room temperature : 25℃. | 1.No mechanical or electrical damage. 2.Inductance shall not change more than ±20%. |
| 15.Drop | CNS-C6354 & GB/T 2423.8 | 1.Products shall be mounted on SPEC. PCB and dropped down from a height of 1m 2.Drop total time : 6 time (Every side of sample drop 2 time) | 1. Adhesion on PCB shall be enough. 2. Product appearance shall not break. 3. No electrical damage. |
| 16.Terminal Strength Test | IEC 60068-2-21 | 1.Apply push force to samples mounted on PCB. 2.Force of 1.8 kg for 60±1 seconds. | After test, inductors shall be no mechanical damage. |

AR-001C