

**■ Features**

- Molding Inductor.
- High reliability.
- High current, low DCR, high efficiency.
- Very low acoustic noise and very low leakage flux noise.
- Operating temperature: -55°C ~ +125°C (Including self-temperature rise) .

**■ Applications**

- General Electronic.
- Video Device, TV, TFT.
- Power Module for PC.
- NB/Lap Top Computer.
- Server, VGA Card/Module.
- DC/DC converter.

**■ Product Identification**



(1) : Type

(2) : Dimensions

(3) : Inductance value

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

**■ Shapes and Dimensions (Unit: mm)**



| TYPE       | A       | B       | C       | D       | E       | F       | G Ref. | H Ref. | L Ref. |
|------------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| YSPIT0550A | 5.5±0.2 | 5.3±0.2 | 4.8±0.2 | 4.3±0.3 | 1.1±0.3 | 2.3±0.3 | 2.0    | 4.7    | 4.5    |

## ■ YSPIT0550A Series

| Part Number     | Inductance<br>(uH)<br>@100KHz/0.1V | DCR Max.<br>(mΩ) | Saturation Current (A) |      | Heat Rating Current<br>Typ.(A) |           |
|-----------------|------------------------------------|------------------|------------------------|------|--------------------------------|-----------|
|                 |                                    |                  | Max.                   | Typ. | 20°C rise                      | 40°C rise |
| YSPIT0550A-5R6M | 5.6±20%                            | 24.2             | 7.2                    | 8.6  | 5.3                            | 7.2       |
| YSPIT0550A-6R8M | 6.8±20%                            | 28.6             | 6.6                    | 7.8  | 4.8                            | 6.4       |
| YSPIT0550A-8R2M | 8.2±20%                            | 32.5             | 6.1                    | 7.2  | 4.6                            | 6.1       |
| YSPIT0550A-100M | 10±20%                             | 43.0             | 5.4                    | 6.5  | 3.8                            | 5.0       |
| YSPIT0550A-150M | 15±20%                             | 76.7             | 3.2                    | 3.7  | 3.0                            | 3.9       |
| YSPIT0550A-220M | 22±20%                             | 99.7             | 3.0                    | 3.6  | 2.5                            | 3.4       |

- ※ The saturation current value is the DC current value having inductance decrease down to 30%.(at 25°C)
- ※ The temperature rise current value is the DC current value having temperature increase up to 40°C. (at 25°C)
- ※ The rated current is the DC current value that satisfies both of current value saturation current value and temperature rise current value.

## ■ Mechanical Reliability

| Item                 | Specification and Requirement  | Test Method  |
|----------------------|--|--|
| Solderability        | 1. No case deformation or change in visual<br>2. New solder coverage More than 95% | 1.Preheat : 155°C±5°C , 60S±2S<br>2.Tin: lead-free.<br>3.Temperature:240°C±5°C , flux 3.0S±0.5S.   |
| Mechanical shock     | 1. No case deformation or change in visual<br>2. $\Delta L/L_0 \leq \pm 10\%$      | 1. Acceleration : 100G<br>2. Pulse time: : 6ms<br>3. 3 times in each positive and negative direction of 3 mutual perpendicular directions                  |
| Mechanical vibration | 1. No case deformation or change in visual<br>2. $\Delta L/L_0 \leq \pm 10\%$      | 1. Reflow: 2times<br>2. Frequency: 10HZ ~ 50HZ ~ 10HZ, 20 Min/Cycles<br>3. Amplitude: 1.52 mm±10%<br>4. Directions: X,Y,Z<br>5. Time: 12 cycle / direction |

## ■ Endurance Reliability

| Item                     | Specification and Requirement   | Test Method  |
|--------------------------|---|--|
| Thermal Shock            | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual | 1. First -55°C° for 30 minutes, last 125°C° for 30 minutes as 1 cycle. Go through 1000 cycles.<br>2. Max transfer time is 3 minutes.<br>3. Measured at room temperature after placing for 24±2 hours |
| Biased Humidity          | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual | 1.Reflow 2 times,<br>2.85°C°±3C°,85%±3%RH,1000 hours<br>3.Measured at room temperature after placing for 24±2 hours  |
| Low temperature storage  | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual | 1. Temperature : -55 $\pm$ 2C°<br>2. Time : 1000 hours<br>3. Measured at room temperature after placing for 24±2 hours   |
| High temperature storage | Inductance change:<br>Within $\pm 10\%$ Without distinct damage in visual | 1. Temperature : +125 $\pm$ 2C°<br>2. Time : 1000 hours<br>3. Measured at room temperature after placing for 24±2 hours  |

**Recommended Soldering Technologies**

**Re-flowing Profile**



Preheat condition: 150 ~200°C/60~120sec.  
 Allowed time above 217°C: 60~90sec.  
 Peak temp: 260°C  
 Max time at Peak temp: 10 sec.  
 Solder paste: Sn/3.0Ag/0.5Cu  
 Allowed Reflow time: 2x max

**Iron Soldering Profile**



Iron soldering power: Max. 30W  
 Pre-heating: 150°C/60sec.  
 Soldering Tip temperature: 350°C Max.  
 Soldering time: 3sec. Max.  
 Solder paste: Sn/3.0Ag/0.5Cu  
 Max.1 times for iron soldering

**■ Taping Dimensions(Unit:mm)**



| TYPE       | W            | P           | P0          | P2          | D0          | D1          | T             | A0          | B0          | K0          | E            | F           | MPQ  |
|------------|--------------|-------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|--------------|-------------|------|
| YSPIT0550A | 16.0<br>±0.3 | 8.0<br>±0.1 | 4.0<br>±0.1 | 2.0<br>±0.1 | 1.5<br>±0.1 | 1.5<br>±0.1 | 0.35<br>±0.05 | 6.0<br>±0.1 | 5.7<br>±0.1 | 5.3<br>±0.1 | 1.75<br>±0.1 | 7.5<br>±0.1 | 1500 |

**■ Reel Dimensions(Unit:mm)**



| TYPE       | W       | W1       | W2      | W3       | A        | B        | C       | D      |
|------------|---------|----------|---------|----------|----------|----------|---------|--------|
| YSPIT0550A | 330±2.0 | 12.4±2.0 | 18.4MAX | 11.9 Min | 13.0±0.5 | 21.0±0.8 | 2.0±0.5 | 97±0.5 |

**Direction of rolling**



**Cover tape peel off condition**



Cover tape peel force shall be 0.1N to 1.3N.

Reference peel speed 300±10mm/min.

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