

■ 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. |
|------------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| YSPIT0530A | 5.5±0.2 | 5.3±0.2 | 2.9±0.2 | 4.3±0.3 | 1.1±0.3 | 2.3±0.3 | 2.0 | 4.7 | 4.5 |

■ YSPIT0530A Series

| Part Number | Inductance (uH) @100KHz/0.1V | DCR Max. (mΩ) | Saturation Current (A) | | Heat Rating Current Typ.(A) | |
|-----------------|------------------------------------|------------------|------------------------|------|--------------------------------|-----------|
| | | | Max. | Typ. | 20°C rise | 40°C rise |
| YSPIT0530A-R15M | 0.15±20% | 2.4 | 32.5 | 36.0 | 14.3 | 22.2 |
| YSPIT0530A-R16M | 0.16±20% | 2.4 | 32.0 | 35.0 | 14.2 | 22.2 |
| YSPIT0530A-R33M | 0.33±20% | 3.6 | 26.0 | 28.0 | 13.8 | 19.2 |
| YSPIT0530A-R47M | 0.47±20% | 4.2 | 24.0 | 26.0 | 13.7 | 18.4 |
| YSPIT0530A-R56M | 0.56±20% | 4.6 | 20.2 | 22.2 | 13.6 | 17.7 |
| YSPIT0530A-R60M | 0.60±20% | 4.6 | 20.0 | 22.0 | 13.6 | 17.7 |
| YSPIT0530A-R80M | 0.80±20% | 5.7 | 18.0 | 20.0 | 10.1 | 13.1 |
| YSPIT0530A-R82M | 0.82±20% | 5.8 | 17.6 | 19.7 | 9.9 | 12.9 |
| YSPIT0530A-1R0M | 1.0±20% | 7.6 | 14.3 | 16.5 | 9.0 | 12.2 |
| YSPIT0530A-1R2M | 1.2±20% | 9.7 | 13.5 | 15.0 | 8.5 | 11.0 |
| YSPIT0530A-1R5M | 1.5±20% | 11.2 | 12.5 | 14.0 | 8.0 | 10.5 |
| YSPIT0530A-1R8M | 1.8±20% | 12.7 | 11.3 | 12.3 | 7.6 | 10.1 |
| YSPIT0530A-2R2M | 2.2±20% | 14.5 | 9.0 | 10.0 | 7.2 | 9.7 |
| YSPIT0530A-3R3M | 3.3±20% | 23.1 | 8.7 | 9.5 | 5.9 | 8.1 |
| YSPIT0530A-4R7M | 4.7±20% | 36.3 | 7.0 | 8.2 | 4.3 | 5.9 |

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

■ Endurance Reliability

| Item | Specification and Requirement | Test Method |
|--------------------------|---|--|
| Thermal Shock | Inductance change: 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. 2. Max transfer time is 3 minutes. 3. Measured at room temperature after placing for 24 ± 2 hours |
| Biased Humidity | Inductance change: Within $\pm 10\%$ Without distinct damage in visual | 1. Reflow 2 times, $2.85^{\circ}\text{C} \pm 3^{\circ}\text{C}$, $85\% \pm 3\% \text{RH}$, 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours |
| Low temperature storage | Inductance change: Within $\pm 10\%$ Without distinct damage in visual | 1. Temperature : $-55 \pm 2^{\circ}\text{C}$ 2. Time : 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours |
| High temperature storage | Inductance change: Within $\pm 10\%$ Without distinct damage in visual | 1. Temperature : $+125 \pm 2^{\circ}\text{C}$ 2. Time : 1000 hours 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 |
|------------|--------------|-------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|--------------|-------------|------|
| YSPIT0530A | 16.0 ±0.3 | 8.0 ±0.1 | 4.0 ±0.1 | 2.0 ±0.1 | 1.5 ±0.1 | 1.5 ±0.1 | 0.35 ±0.05 | 6.0 ±0.1 | 5.7 ±0.1 | 3.3 ±0.1 | 1.75 ±0.1 | 7.5 ±0.1 | 2000 |

■ Reel Dimensions(Unit:mm)



| TYPE | W | W1 | W2 | W3 | A | B | C | D |
|------------|---------|----------|---------|----------|----------|----------|---------|--------|
| YSPIT0530A | 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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