

■ Features

- Molding Inductor.
- High reliability.
- High current, low DCR, high efficiency.
- Very low acoustic noise and very low leakage flux noise.
- Operating temperature: $-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$ (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= $\pm 30\%$, M= $\pm 20\%$

■ Shapes and Dimensions (Unit: mm)



TYPE	A	B	C	D	E	F	G Ref.	H Ref.	L Ref.
YSPIT0420A	4.1 \pm 0.2	4.1 \pm 0.2	1.9 \pm 0.2	3.4 \pm 0.3	0.88 \pm 0.3	1.7 \pm 0.3	1.4	3.8	3.4

■ YSPIT0420A 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
YSPIT0420A-R10M	0.10±20%	2.5	33.0	38.0	13.5	18.0
YSPIT0420A-R22M	0.22±20%	4.6	18.8	19.5	13.0	16.8
YSPIT0420A-R36M	0.36±20%	6.3	15.0	17.0	11.0	14.5
YSPIT0420A-R40M	0.40±20%	7.8	13.5	15.5	10.0	14.0
YSPIT0420A-R47M	0.47±20%	8.6	13.0	14.5	9.0	12.5
YSPIT0420A-R56M	0.56±20%	9.3	12.6	14.0	8.5	12.0
YSPIT0420A-R60M	0.60±20%	9.6	12.3	13.7	8.0	11.7
YSPIT0420A-R72M	0.72±20%	11.6	10.6	12.0	7.6	10.5
YSPIT0420A-1R0M	1.0±20%	14.6	8.8	9.6	6.8	9.6
YSPIT0420A-1R2M	1.2±20%	17.9	7.8	9.0	6.6	9.0
YSPIT0420A-1R5M	1.5±20%	23.5	7.4	8.0	5.8	7.6
YSPIT0420A-1R8M	1.8±20%	28.0	7.0	7.5	5.2	7.0
YSPIT0420A-2R2M	2.2±20%	38.7	6.0	6.5	4.6	5.6

- ※ 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
YSPIT0420A	12.0 ±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	4.5 ±0.1	4.5 ±0.1	2.3 ±0.1	1.75 ±0.1	5.5 ±0.1	3000

■ Reel Dimensions(Unit:mm)



TYPE	W	W1	W2	W3	A	B	C	D
YSPIT0420A	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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