SMD Power Inductors
-YSPIT0650A Series

■ Features

- Molding Inductor.
- High reliability.
- High current，low DCR，high efficiency.
- Very low acoustic noise and very low leakage flux noise.
- Operating temperature:-55℃ ~ +125℃（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

YSPIT □□□□□ − □□□ □

(1) (2) (3) (4)

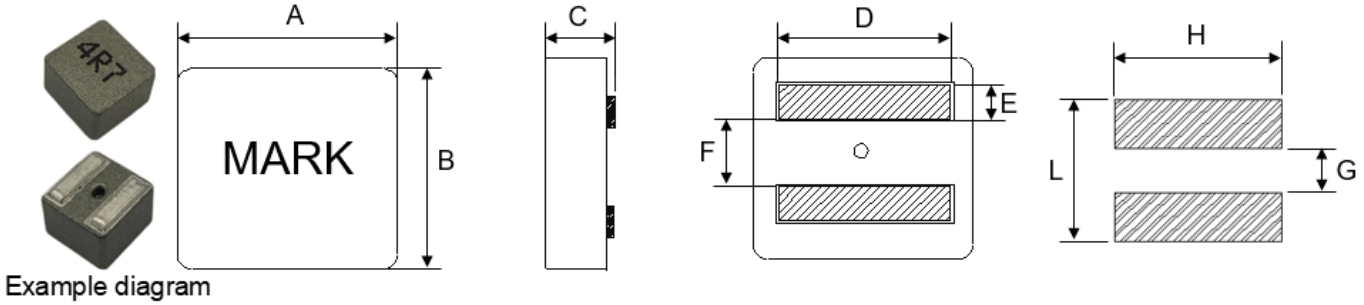
(1)： Type

(2)： Dimensions

(3)： Inductance value

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

■ Shapes and Dimensions (Unit：mm)



Example diagram

TYPE	A	B	C	D	E	F	G Ref.	H Ref.	L Ref.
YSPIT0650A	6.6±0.2	6.4±0.2	4.8±0.2	5.2±0.4	1.4±0.3	2.6±0.3	2.5	5.6	5.6

■ YSPIT0650A Series

Part Number	Inductance (μH) @100KHz/0.1V	DCR Max. (mΩ)	Saturation Current (A)		Heat Rating Current Typ.(A)	
			Max.	Typ.	20℃ rise	40℃ rise
YSPIT0650A-R82M	0.82±20%	4.2	20.0	24.0	16.0	21.0
YSPIT0650A-1R0M	1.0±20%	4.6	18.0	23.0	15.0	20.0
YSPIT0650A-1R2M	1.2±20%	5.9	16.0	22.0	14.0	18.0
YSPIT0650A-1R5M	1.5±20%	6.3	14.5	19.5	13.0	17.0
YSPIT0650A-1R8M	1.8±20%	7.1	13.5	18.5	12.0	16.0
YSPIT0650A-2R2M	2.2±20%	8.5	12.0	16.0	10.0	13.0
YSPIT0650A-3R3M	3.3±20%	12.5	10.5	12.5	8.5	11.0
YSPIT0650A-4R3M	4.3±20%	16.2	8.5	11.0	7.0	9.0
YSPIT0650A-4R7M	4.7±20%	18.4	8.0	10.5	6.5	8.5

※ All test in 25℃ temperature.
※ Absolute maximum voltage 30VDC.
※ Saturation Current (Isat)：DC current（A）that will cause L0 to drop approximately 30% TYP.
※ Heating Rating Current (Irms)：DC current（A）that will cause an temperature rise △T approximate to 40℃.
※ Storage temperature and humidity range (product with tapping):-10℃~+40℃,RH70% Max.
※ The rated current is the DC current value that satisfies both of current value saturation current value and temperature rise current value.
※ The part temperature (ambient + temp rise) should not exceed 125℃ under the worst case operating condition. Circuit design, component,PCB trace size and thickness airflow and other cooling provisions all could affect the part temperature. Part temperature should be verified in the end application.
※ DCR Test：



■ Mechanical Reliability

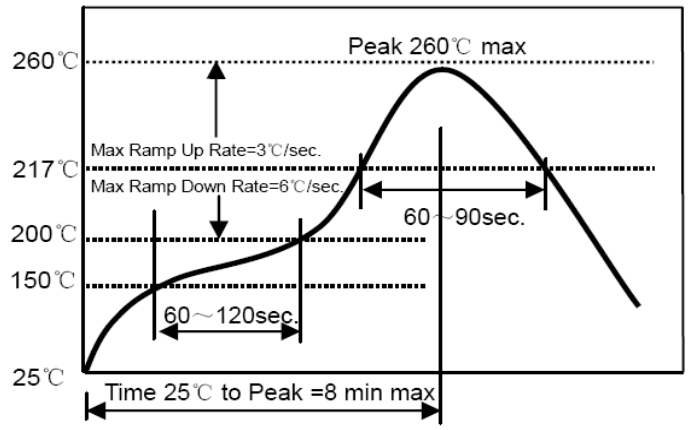
Item	Specification and Requirement	Test Method
Solderability	1. No case deformation or change in visual 2. New solder coverage More than 95%	1.Preheat:155℃±5℃,60S±2S. 2.Tin:lead-free. 3.Temperature:240℃±5℃,flux 3.0S±0.5S.
Mechanical shock	1. No case deformation or change in visual 2. △L/Lo≦±10%	1. Acceleration:100G. 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. △L/Lo≦±10%	1. Reflow:2times. 2. Frequency:10HZ ~ 50HZ ~ 10HZ，20 Min/Cycles. 3. Amplitude:1.52 mm±10%. 4. Directions:X,Y,Z. 5. Time:12 cycle / direction.

■ Endurance Reliability

Item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within ± 10% Without distinct damage in visual	1. First -55℃ for 30 minutes,last 125℃ 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 ± 10% Without distinct damage in visual	1.Reflow 2 times. 2.85℃±3℃,85%±3%RH,1000 hours. 3.Measured at room temperature after placing for 24±2 hours.
Low temperature storage	Inductance change: Within ± 10% Without distinct damage in visual	1. Temperature:-55 ± 2℃. 2. Time:1000 hours 3. Measured at room temperature after placing for 24±2 hours.
High temperature storage	Inductance change: Within±10% Without distinct damage in visual	1. Temperature:+125 ± 2℃. 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℃/60~120sec.

Allowed time above 217℃: 60~90sec.

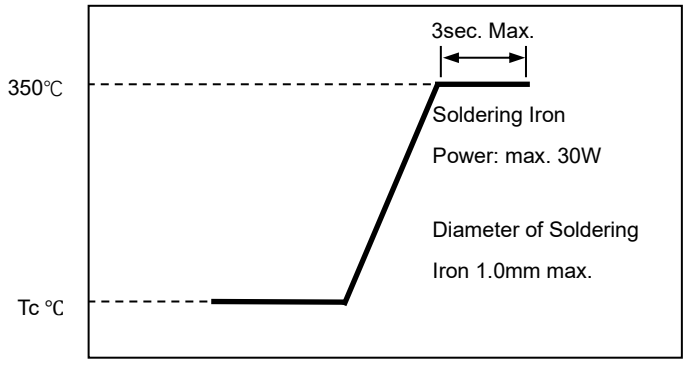
Peak temp: 260℃

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℃/60sec.

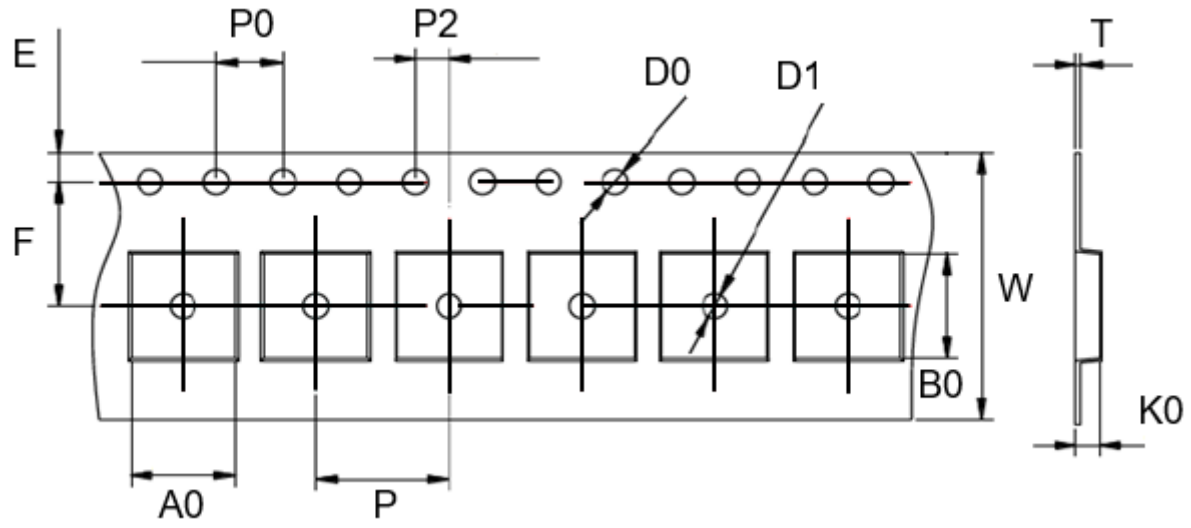
Soldering Tip temperature: 350℃ Max.

Soldering time: 3sec. Max.

Solder paste: Sn/3.0Ag/0.5Cu

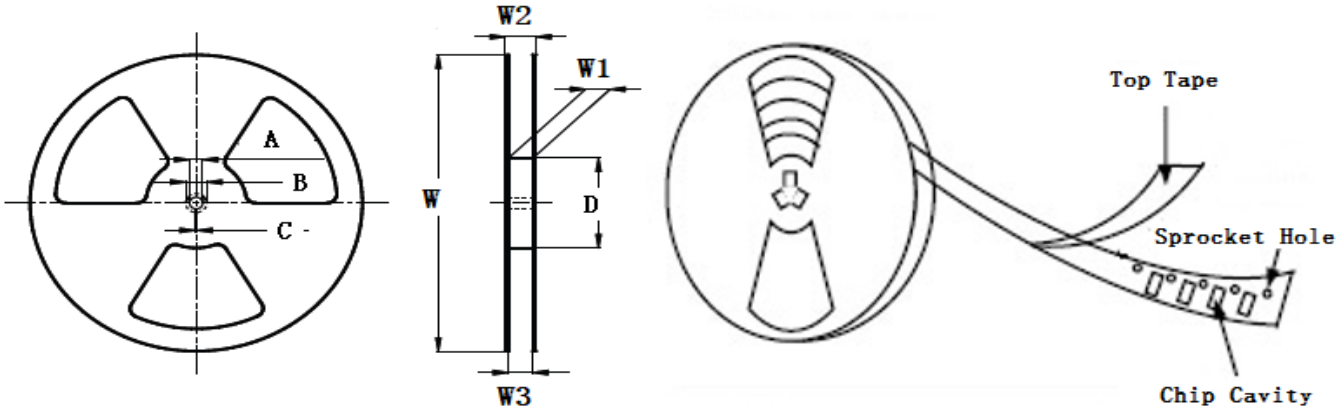
Max.1 times for iron soldering

■ Taping Dimensions(Unit:mm)



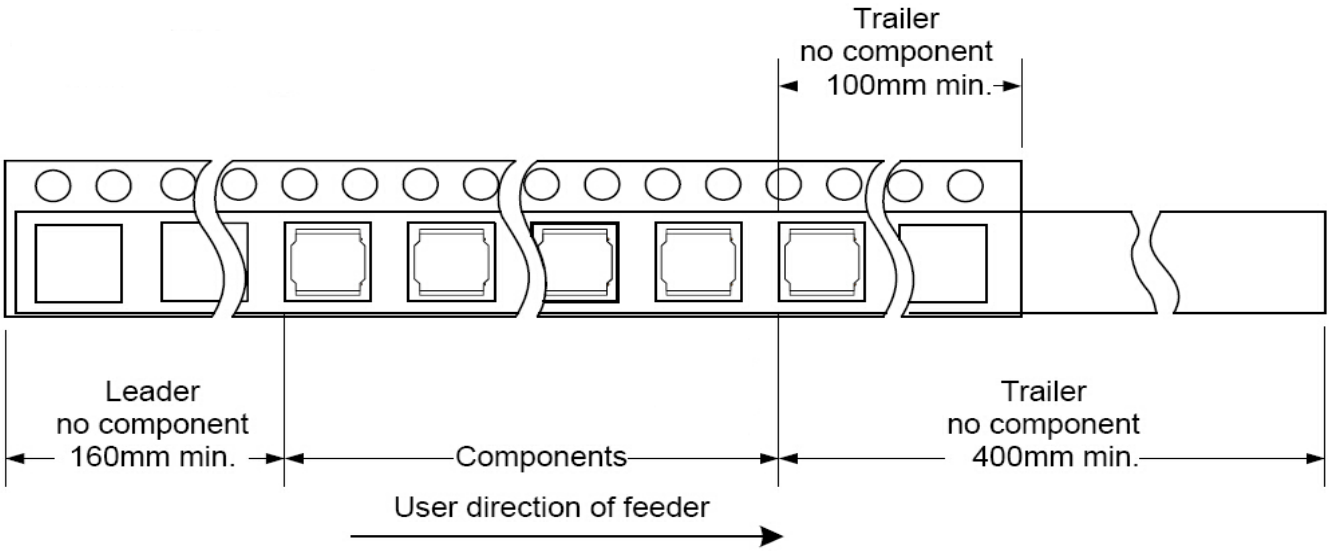
TYPE	W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F	MPQ
YSPIT0650A	16 ±0.3	12 ±0.1	4 ±0.1	2 ±0.1	1.5 ±0.1	1.5 ±0.1	0.35 ±0.05	7.0 ±0.1	6.8 ±0.1	5.3 ±0.1	1.75 ±0.1	7.5 ±0.1	800

■ Reel Dimensions(Unit:mm)

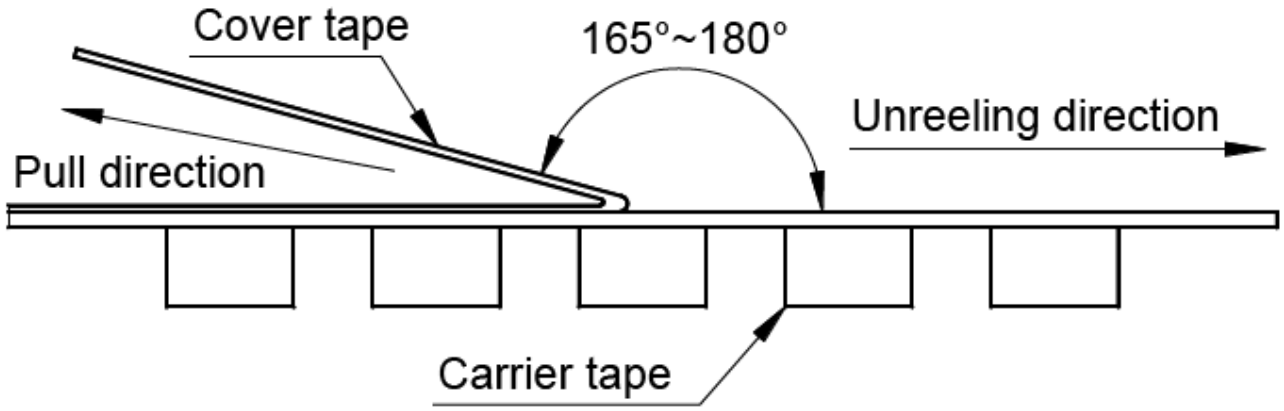


TYPE	W	W1	W2	W3	A	B	C	D
YSPIT0650A	330±2.0	16.4±2.0	22.4MAX	15.9 Min	13.0±0.5	21.0±0.8	2.0±0.5	97±0.5

■ 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.