SMD Power Inductors
-YSPI2313 Series

■ Features

- Molding Inductor.
- Low Profile,Low Temp.
- Large Current(Over 15A).
- Customize For Different Need.
- 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

YSPI □□□□ — □□□ □

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

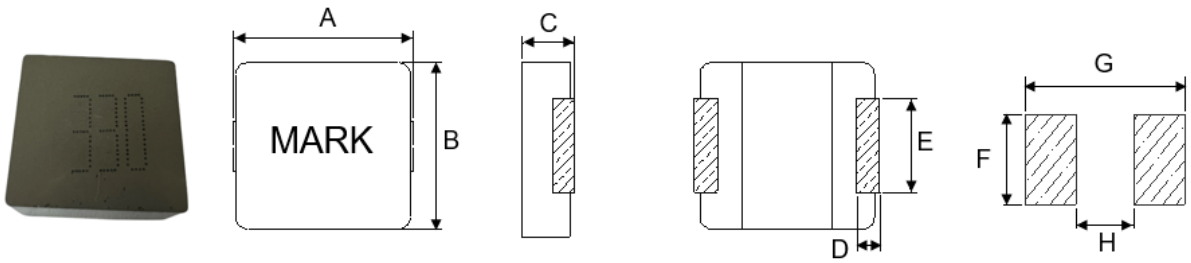
(1)： Type

(2)： Dimensions

(3)： Inductance value

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

■ Shapes and Dimensions (Unit： mm)



TYPE	A	B	C	D	E	F Typ.	G Typ.	H Typ.
YSPI2313	23.5±0.5	22.0±0.3	12.6±0.4	5.0±0.4	19.0±0.3	19.6	24.0	12.5

■ YSPI2313 Series

Part Number	Inductance (uH) @100KHz/1V	DCR Max. (mΩ)	Saturation Current Isat(A)		Heat Rating Current Irms(A)	
			Max.	Typ.	Max.	Typ.
YSPI2313-1R0M	1.0±20%	0.95	54.0	60.0	65.0	70.0
YSPI2313-1R5M	1.5±20%	1.15	48.0	52.0	57.0	62.0
YSPI2313-2R2M	2.2±20%	1.25	43.0	48.0	52.0	58.0
YSPI2313-3R3M	3.3±20%	1.75	37.0	41.0	47.0	49.0
YSPI2313-4R7M	4.7±20%	2.20	34.0	38.0	44.0	47.0
YSPI2313-6R8M	6.8±20%	3.10	32.0	36.0	36.0	40.0
YSPI2313-100M	10±20%	4.15	20.0	28.0	30.0	33.0
YSPI2313-150M	15±20%	6.12	18.0	23.0	23.0	26.0
YSPI2313-220M	22±20%	11.0	14.0	15.0	18.0	22.0
YSPI2313-330M	33±20%	15.4	10.5	12.0	16.0	19.0
YSPI2313-470M	47±20%	20.8	10.0	12.0	14.0	17.0
YSPI2313-680M	68±20%	29.5	9.0	12.0	12.0	14.0
YSPI2313-820M	82±20%	34.2	7.7	9.0	10.0	12.0
YSPI2313-101M	100±20%	40.0	7.5	9.0	9.5	11.0

※ All test data is referenced to 25 °C ambient

※ Irms (A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)

※ Isat(A):DC current (A) that will cause L0 to drop approximately 30 %.(Internal control standards at 40% MAX)

※ The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions.

※ Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions

※ all affect the part temperature. Part temperature should be verified in the end application.

■ Mechanical Reliability

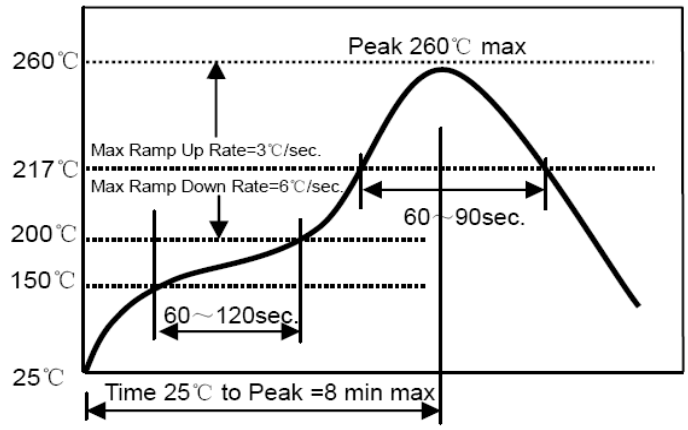
Item	Specification and Requirement	Test Method
Solderability	1. No case deformation or change in visual 2. New solder coverage More than 95%	1.Preheat: 155℃±5℃ , 60S±2S 2.Tin: lead-free. 3.Temperature:240℃±5℃, flux 3.0S±0.5S.
Mechanical shock	1. No case deformation or change in visual 2. △L/Lo≦±10%	1. 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 ~ 55HZ ~ 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℃,85%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.

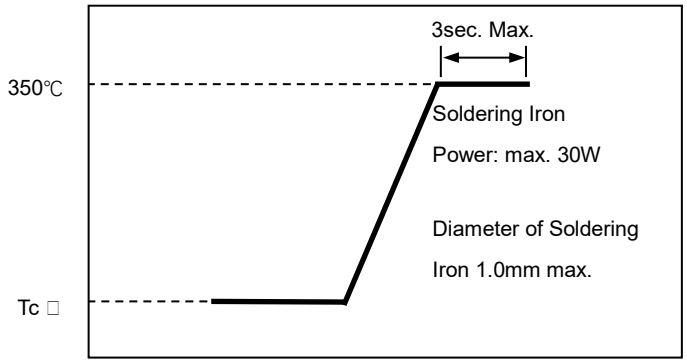
Peak temp: 260℃

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.

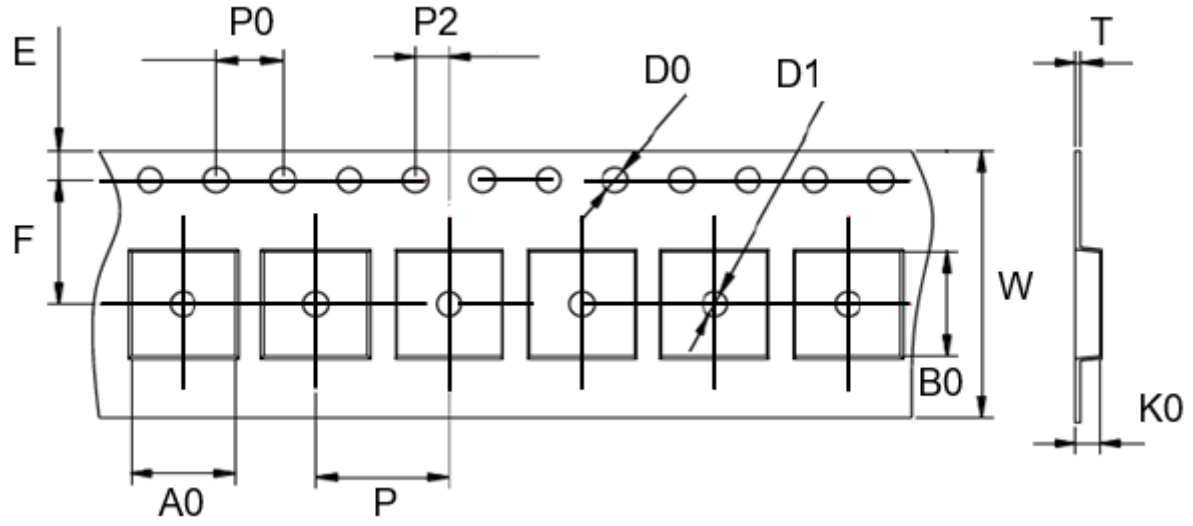
Soldering Tip temperature: 350℃ Max.

Soldering time: 3sec. Max.

Solder paste: Sn/3.0Ag/0.5Cu

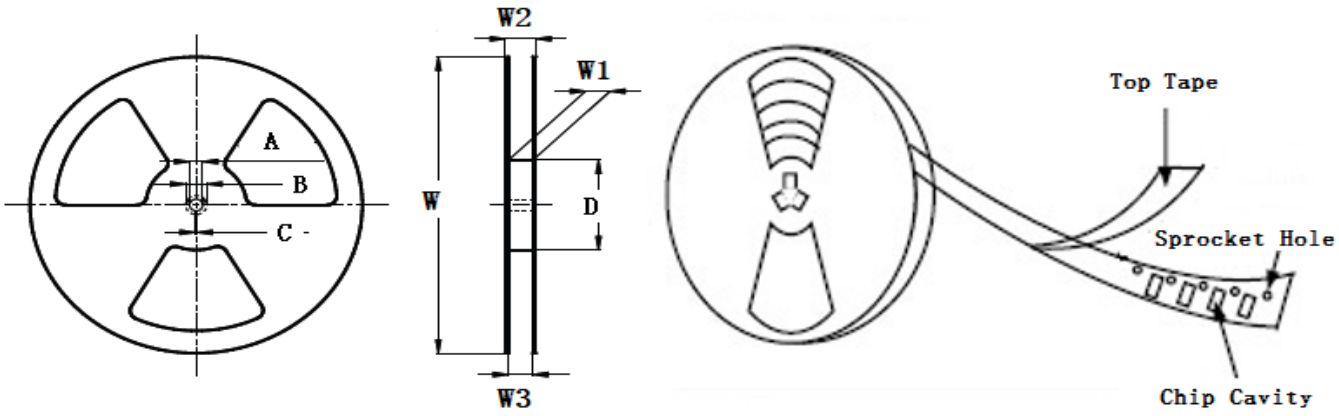
Max.1 times for iron soldering

■ Taping Dimensions(Unit:mm)



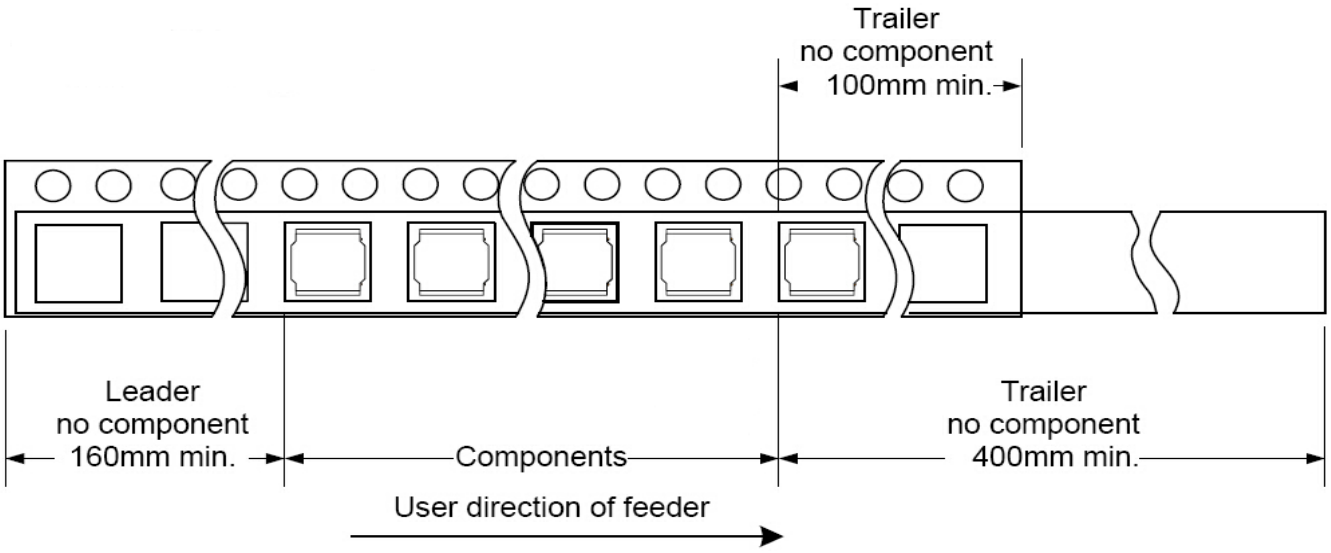
TYPE	W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F	MPQ
YSPI2313	44.0 ±0.3	32.0 ±0.1	4.0 ±0.1	2.0 ±0.1	1.5 ±0.1	1.5 ±0.1	0.5 ±0.05	23.0 ±0.1	24.4 ±0.1	13.5 ±0.1	1.75 ±0.1	20.2 ±0.1	80

■ Reel Dimensions(Unit:mm)

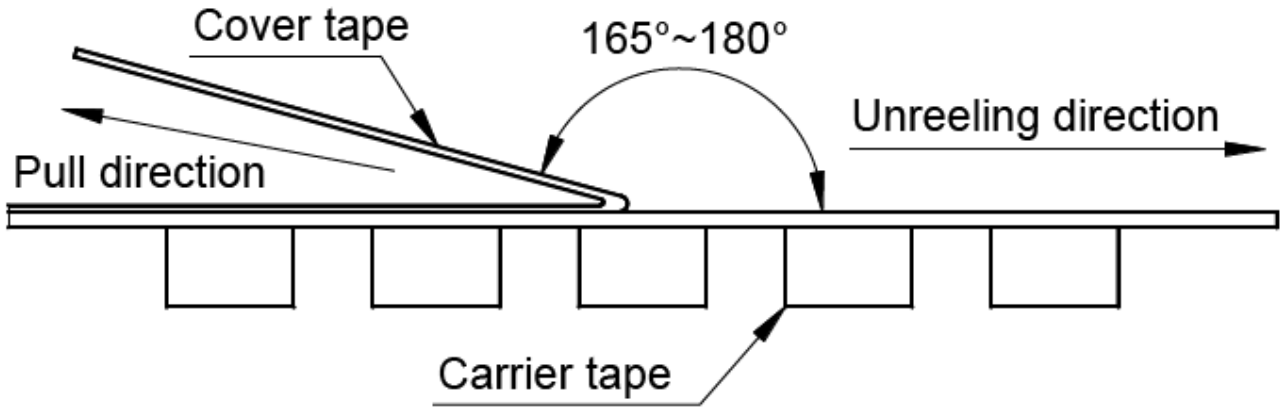


TYPE	W	W1	W2	W3	A	B	C	D
YSPI2313	330±2.0	43.5±2.0	49.0MAX	44.5 Min	13.0±0.5	21.0±0.8	2.0±0.5	97±0.5

■ 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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