

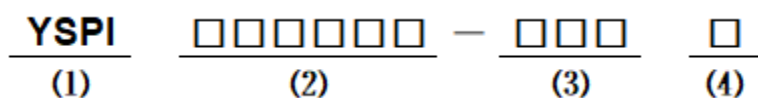
■ Features

- Molding Inductor, low noise.
- Low Profile, Low Temp.
- High Rated Current.
- Customize For Different Need.
- 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



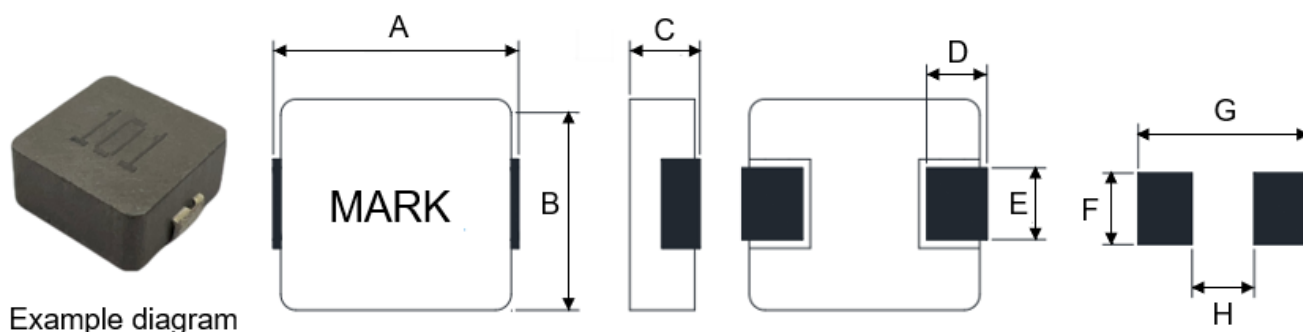
(1) : Type

(2) : Dimensions

(3) : Inductance value

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

■ Shapes and Dimensions (Unit: mm)



TYPE	A	B	C Max.	D	E	F Typ.	G Typ.	H Typ.
YSPI0420HS	4.40±0.35	4.20±0.25	2.00	0.80±0.50	2.00±0.50	2.50	5.20	2.20

■ YSPI0420HS Series

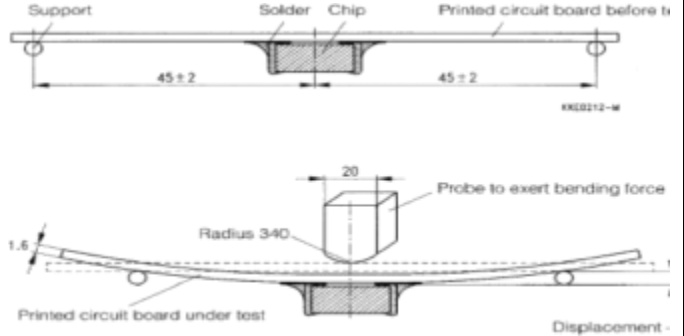
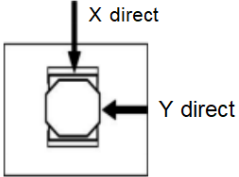
Part Number	Inductance (uH) @100KHz/1V	DCR Max. (mΩ)	Saturation Current Isat(A) Typ.	Heat Rating Current Irms(A) Typ.
YSPI0420HS-R10M	0.10±20%	4.0	22.0	13.0
YSPI0420HS-R22M	0.22±20%	6.6	12.5	9.5
YSPI0420HS-R33M	0.33±20%	11.0	12.0	10.0
YSPI0420HS-R47M	0.47±20%	14.0	9.5	7.5
YSPI0420HS-R56M	0.56±20%	16.0	9.0	7.0
YSPI0420HS-R68M	0.68±20%	18.0	9.0	7.0
YSPI0420HS-1R0M	1.0±20%	30.0	7.0	6.0
YSPI0420HS-1R5M	1.5±20%	46.0	6.0	5.0
YSPI0420HS-2R2M	2.2±20%	58.0	5.0	4.5
YSPI0420HS-3R3M	3.3±20%	87.0	4.0	3.3
YSPI0420HS-4R7M	4.7±20%	105	3.0	2.8
YSPI0420HS-6R8M	6.8±20%	175	2.5	2.4
YSPI0420HS-8R2M	8.2±20%	250	2.0	1.8
YSPI0420HS-100M	10±20%	282	2.2	1.6

- ※ 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%.
- ※ 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.
- ※ Absolute maximum voltage 30VDC.

■ Reliability Test

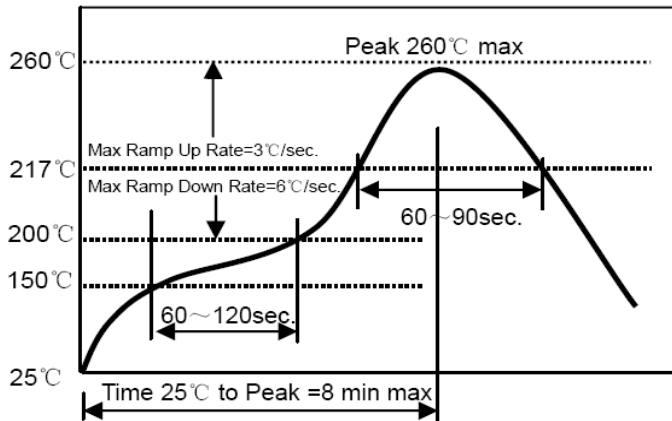
Item	Specification and Requirement	Test Method								
Solderability	1. No case deformation or change in visual 2. New solder coverage More than 90%	1.Preheat:155°C±5°C, 60S±2S 2.Tin: lead-free. 3.Temperature:240°C±5°C, flux 3.0S±0.5S.								
Mechanical shock	1. No case deformation or change in visual 2. ΔL/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. ΔL/Lo≤±10%	1. The test samples shall be soldered to the board.Then it shall be submitted to below test conditions. <table><tr><td>Fre. Range</td><td>10~55Hz</td></tr><tr><td>Total Amplitude</td><td>1.5mm</td></tr><tr><td>Sweeping Method</td><td>10Hz to 55Hz to 10Hz</td></tr><tr><td>Time</td><td>For 2 hours on each X,Y,Z axis.</td></tr></table> 2. Recovery:At least 2 hours of recovery under the standard condition after the test, followed by the measurement within 24 ±2 hours.	Fre. Range	10~55Hz	Total Amplitude	1.5mm	Sweeping Method	10Hz to 55Hz to 10Hz	Time	For 2 hours on each X,Y,Z axis.
Fre. Range	10~55Hz									
Total Amplitude	1.5mm									
Sweeping Method	10Hz to 55Hz to 10Hz									
Time	For 2 hours on each X,Y,Z axis.									
Thermal Shock	Inductance change: Within ± 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								
Humidity Resistance	Inductance change: Within ± 10% Without distinct damage in visual	1.Reflow 2 times, 2.85°C, 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°C 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°C 2. Time:1000 hours 3. Measured at room temperature after placing for 24±2 hours								

Reliability Test

Item	Specification and Requirement	Test Method
Board Flex	Inductance change: Within $\pm 10\%$ Without distinct damage in YSPI pearance	1. Run through IR reflow for 2 times, 2. Place the 100mm X 40mm board into a fixture similar to the one shown in below Figure with the component facing down 3. The YSPI paratus shall consist of mechanical means to YSPI ply a force which will bend the board (D) x = 2 mm minimum. 4. The duration of the YSPI plied forces shall be 60$\pm$5 sec. The force is to be YSPI plied only once to the board. 
Terminal Strength	No removal or split of the termination or other defects shall occur.	1. The test samples shall be soldered to the board 2. Push the product vertically from the side of the sample using the thrust tester. 3. Automotive electronics: 17.7N , 60S$\pm$1s, X 、 Y direct. 

■ Recommended Soldering Technologies

Re-flowing Profile



Preheat condition: 150 ~200°C/60~120sec.

Allowed time above 217°C: 60~90sec.

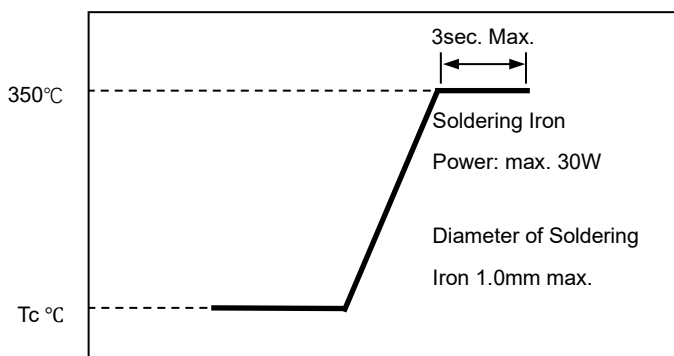
Peak temp: 260°C

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.

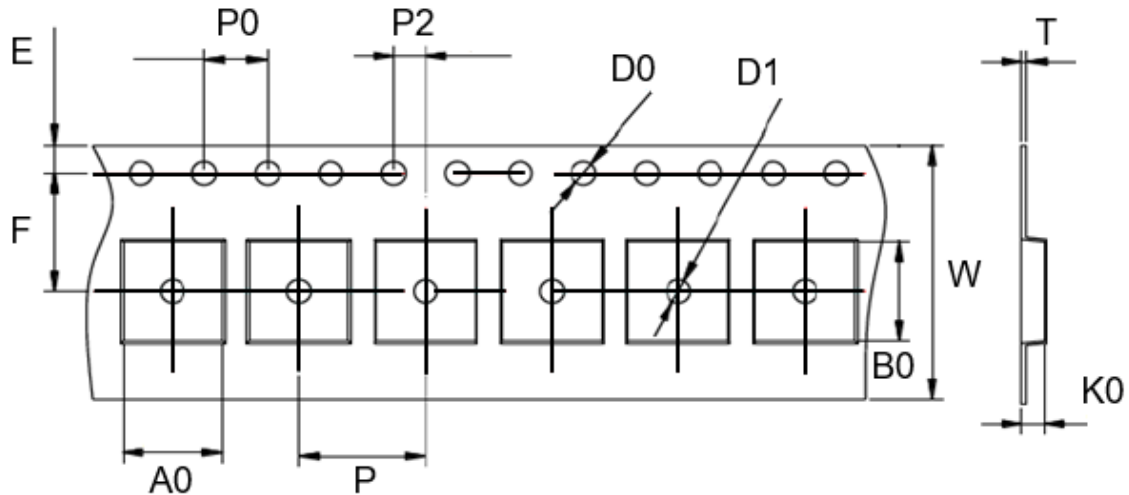
Soldering Tip temperature: 350°C Max.

Soldering time: 3sec. Max.

Solder paste: Sn/3.0Ag/0.5Cu

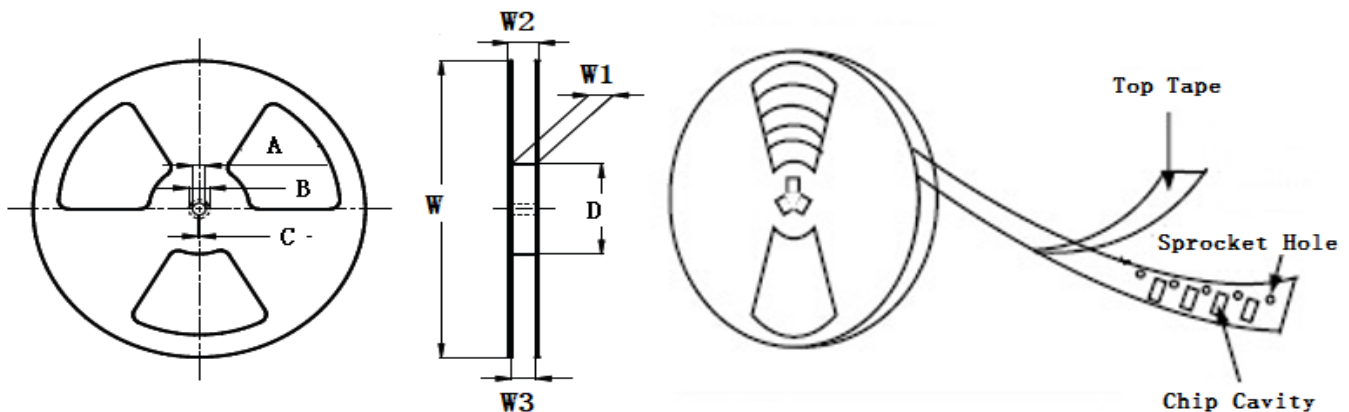
Max.1 times for iron soldering

■ Taping Dimensions(Unit:mm)



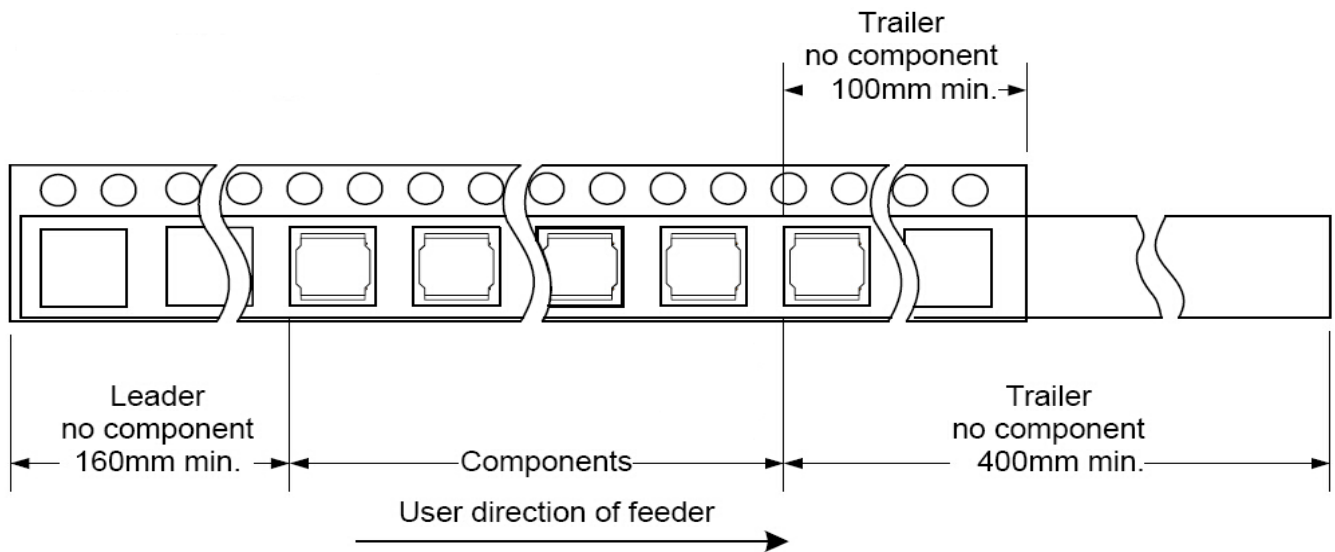
TYPE	W	P	P0	P2	D0	D1	T	A0	B0	K0	E	F	MPQ
YSPI0420HS	12.0 ±0.3	8.0 ±0.1	4.0 ±0.1	2.0 ±0.1	1.5 ±0.1	1.5 ±0.1	0.35 ±0.05	4.5 ±0.1	4.85 ±0.1	2.3 ±0.1	1.75 ±0.1	5.5 ±0.1	3000

■ Reel Dimensions(Unit:mm)

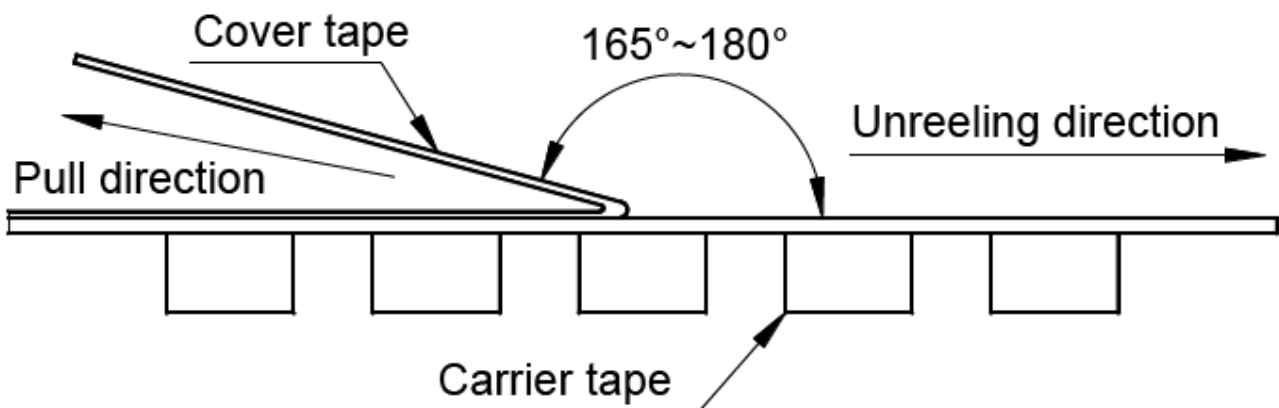


TYPE	W	W1	W2	W3	A	B	C	D
YSPI0420HS	330±2.0	12.4±1.5	18.4MAX	11.9 Min	13.0±0.5	21.0±0.8	2.0±0.5	97.0±0.5

■ 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.