

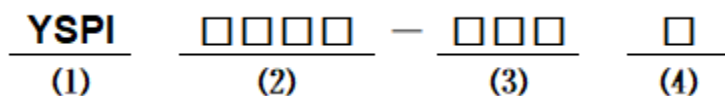
■ Features

- Molding Inductor.
- Low Profile, Low Temp.
- Large Current.
- Customize For Different Need.
- Operating temperature: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ (Including self-temperature rise) .

■ Applications

- General Electronic.
- Video Device, TV, TFT.
- Power Module for PC.
- NB/Lap Top Computer.
- Server, VGA Card/Module.

■ Product Identification



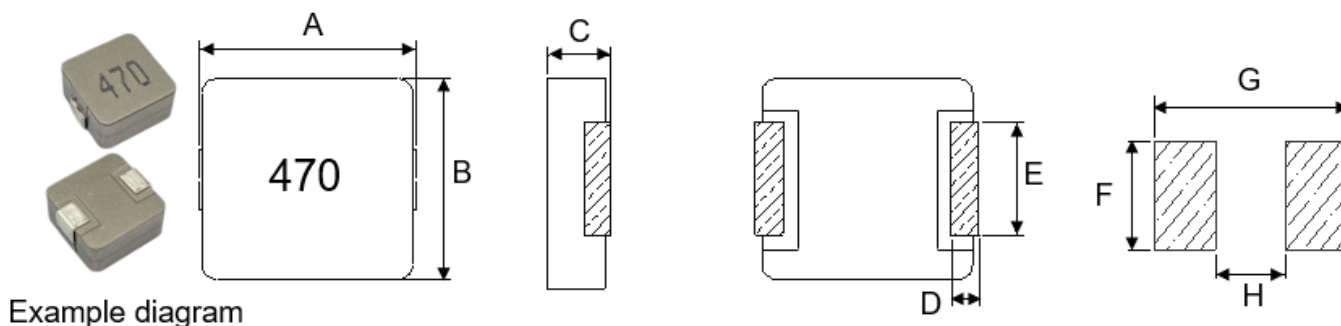
(1) : Type

(2) : Dimensions

(3) : Inductance value

(4) : Inductance Tolerance: N=±30%, M=±20%, K=±10%

■ Shapes and Dimensions (Unit: mm)



TYPE	A	B	C Max.	D	E	F Ref.	G Ref.	H Ref.
YSPI1050	11.0 ± 0.5	10.0 ± 0.2	5.0	2.0 ± 0.5	3.0 ± 0.5	4.1	13.6	5.4

Electrical Characteristics

Part Number	Inductance (μH) @100KHz/1V	DCR Max. ($\text{m}\Omega$)	Saturation Current Max.(A)	Saturation Current Max.(A)
YSPI1050-470M	47 $\pm$ 20%	210	4.0	3.0

※ All test data is referenced to 25 °C ambient.

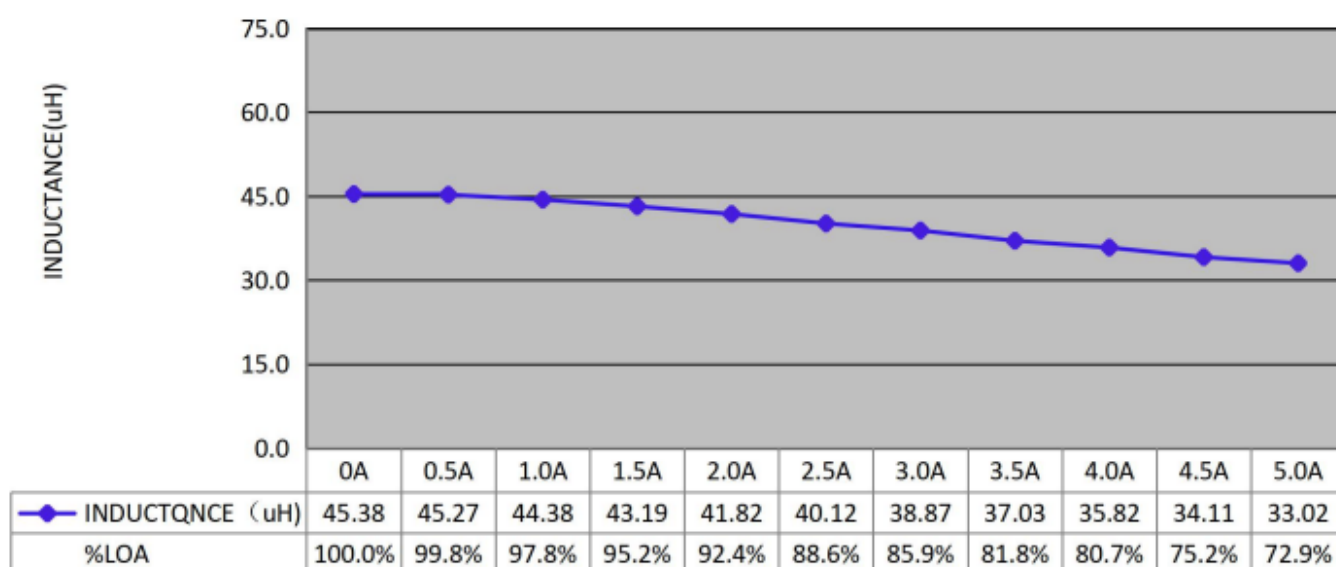
※ Irms (A): The value of DC current when product temperature rise is $\Delta T 40^{\circ}\text{C}$ ($T_a=25^{\circ}\text{C}$).

※ Isat(A): The value of DC current when the inductance decreases 35% of its initial value.

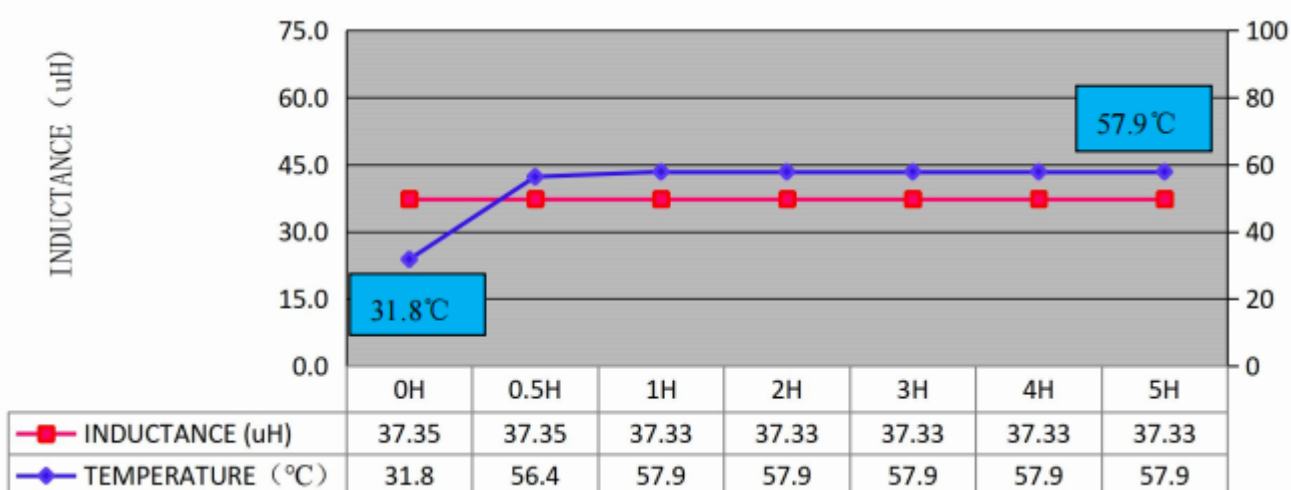
※ Special remind: Circuit design, component placement, frequency, cooling system and etc. all will affect the product temperature. Please verify the actual product temperature in the final application.

※ Absolute maximum voltage 30VDC.

Inductance VS DC current



Temperature VS DC current



■ General Characteristics

NO.	ITEMS	CONDITIONS	SPECIFICATION
1	OPERATION TEMPERATURE STORAGE TEMPERATURE		-40 ~ +125 °C (INCLUDING COIL TEMPERATURE RISE)
2	TEMPERATURE COEFFICIENT	-30 ~ +105 °C	0 ~ 2000ppm/°C
3	FIXING STRENGTH	SAMPLE IS PUSHED IN THREE DIRECTIONS OF X, Y AND Z WITH FORCE OF 5. 0N FOR 10±5 SECONDS. AFTER SOLDERING BETWEEN COPPER PLATE AND ELECTRODES.	NO ELECTRODE DETACHMENT.
4	RESISTANCE TO SOLDERING HEAT TEST	REFER TO THE SPEC "STD-001NP".	NO MECHANICAL BREAKAGE. DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
5	SOLDERABILITY TEST	IMMERSE THE ELECTRODE IN FLUX FOR 5 SECONDS. THEN DIP THE ELECTRODE INTO A SOLDERING BATH OF 245±5 °C FOR 2±0.5 SECONDS.	OVER 95% OF THE SURFACE BEING IMMersed SHALL BE COVERED WITH NEW SOLDER UNIFORMLY.
6	VIBRATION TEST	AMPLITUDE: 1.5mm P-P FREQUENCY: 10~55~10Hz (1 MINUTE PER CYCLE) DURATION: 1 HOUR IN EACH OF X, Y, Z AXIS.	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
7	HUMIDITY TEST	TEMPERATURE: 40 °C ± 2 °C HUMIDITY: 90%~95%RH DURATION: 96±4 HOURS.	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
8	THERMAL SHOCK TEST	20 CYCLES OF +105 °C FOR 30 MINUTES, -40 °C FOR 30 MINUTES. CHARACTERISTICS ARE MEASURED AFTER THE AMBIENT AIR EXPOSURE OF 1 HOUR	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
9	HIGH TEMPERATURE STORAGE TEST	TEMPERATURE: 125 °C ± 2 °C DURATION: 96±4 HOURS	
10	LOW TEMPERATURE STORAGE TEST	TEMPERATURE: -40 °C ± 3 °C DURATION: 96±4 HOURS.	

※ Standard testing conditions:

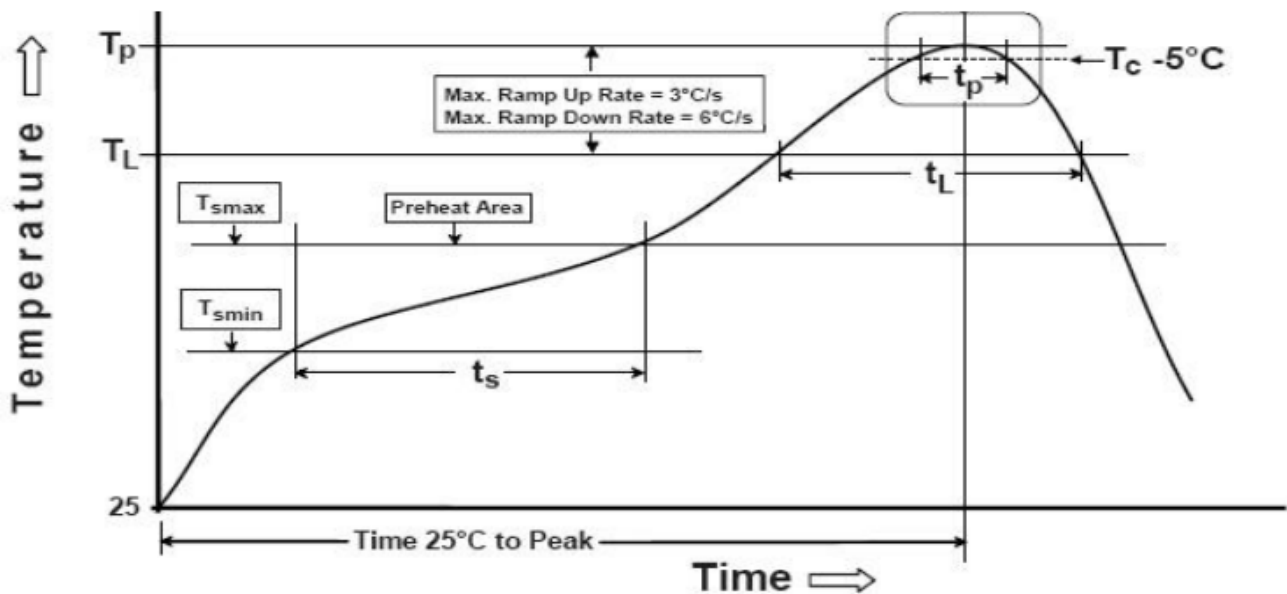
Unless otherwise specified, the standard range of atmospheric conditions for measurements and tests are as follows:

Ambient temperature: 15 °C ~ 35 °C. Relative humidity : 25% ~ 85%. Air pressure: 86kPa ~ 106kPa.

If there is doubt about the results, measurement shall be made within the following limits:

Ambient temperature: 20 °C ± 1 °C. Relative humidity: 63% ~ 67%. Air pressure: 86kPa ~ 106kPa.

Reflow profile for SMT components



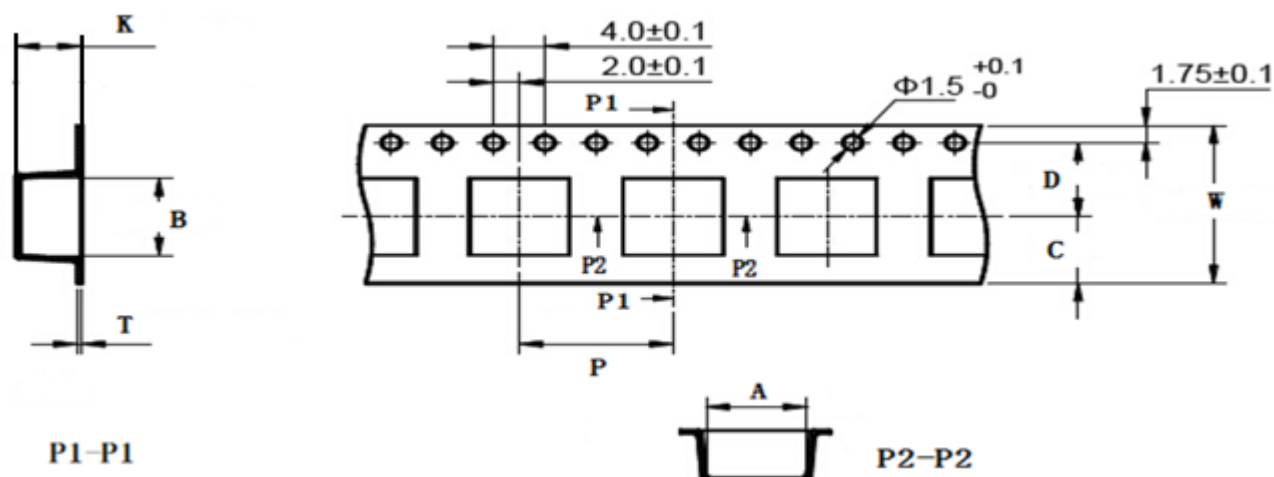
Reflow is referred to standard IPC/ JEDEC J-STD-020D

Profile Feature		Lead(Pb) Free solder
Preheat and soak	·temperature Min.(Ts min)	150°C
	·temperature Max.(Ts max)	200°C
	·time(Tsmin to Ts max)(ts)	60-120 Seconds
Average ramp up rate Tsmax to Tp		3°C/Second Max.
Liquidous temperature (TL)		217 °C
Time (TL) maintained above TL		60-150 seconds
Peak package body temperature (Tp)		Table2
Time (tp)* within 5 °C of the specified classification temperature (Tc)		30* seconds
Average Ramp-down rate (Tp to TL)		6 °C/second max
Time 25 °C to peak temperature		8 minutes max.

Table2. Pb-Free Process - Classification Temperatures (Tc)

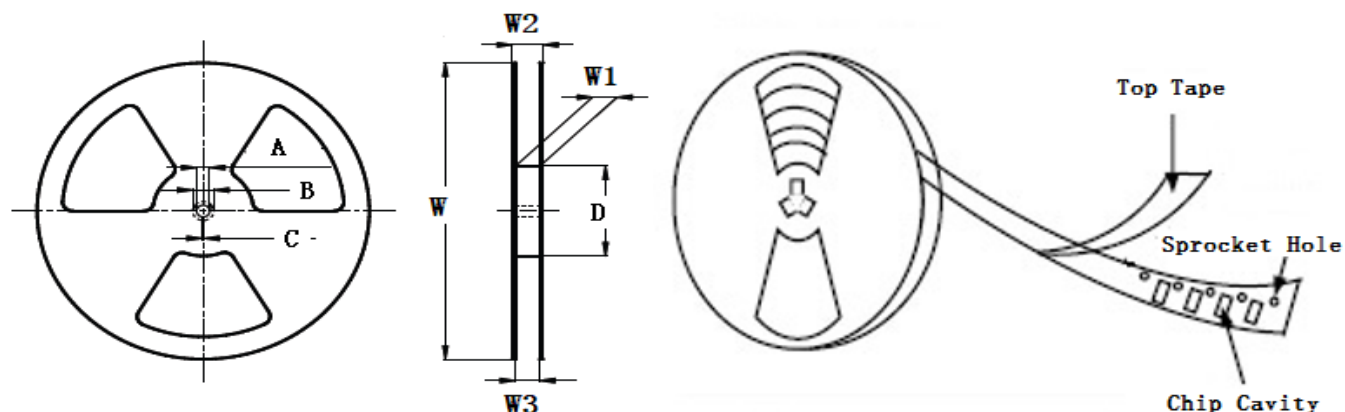
Package Thickness	Volume mm3 <350	Volume mm3 350~2000	Volume mm3 >2000
<1.6 mm	260°C	260°C	260°C
1.6mm- 2.5mm	260°C	250°C	245°C
>2.5 mm	250°C	245°C	245°C

Taping Dimensions(Unit:mm)



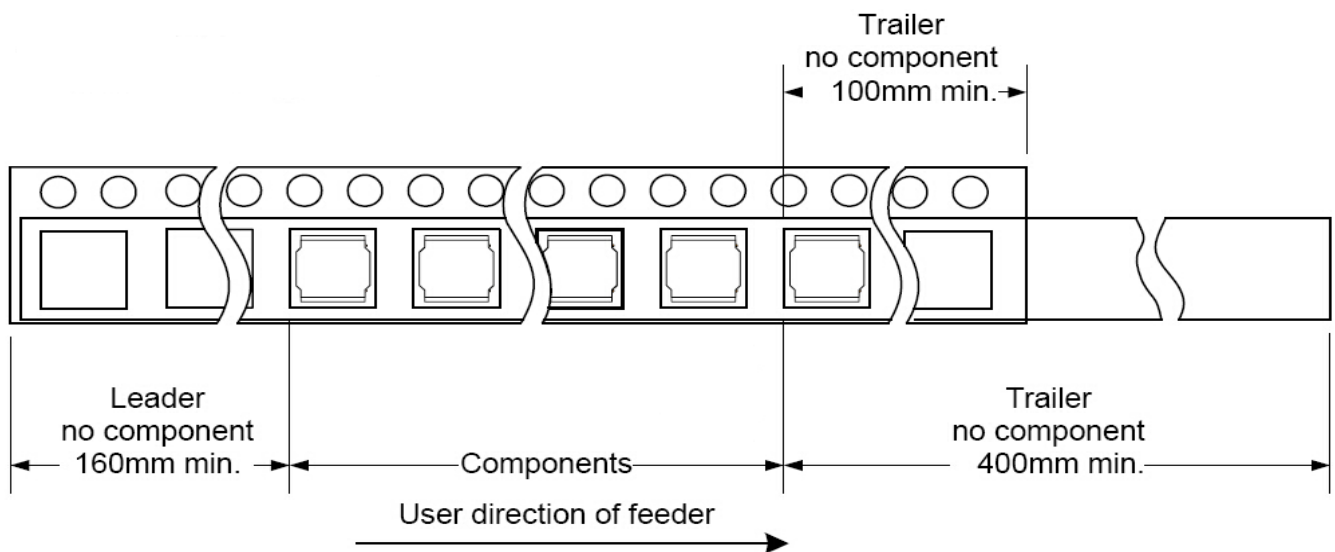
TYPE	W	A	B	C	D	P	K	T	MPQ
YSPI1050	24.0±0.3	10.35±0.1	10.95±0.1	10.75	11.5±0.1	16.0±0.1	5.3±0.1	0.35±0.05	800

Reel Dimensions(Unit:mm)

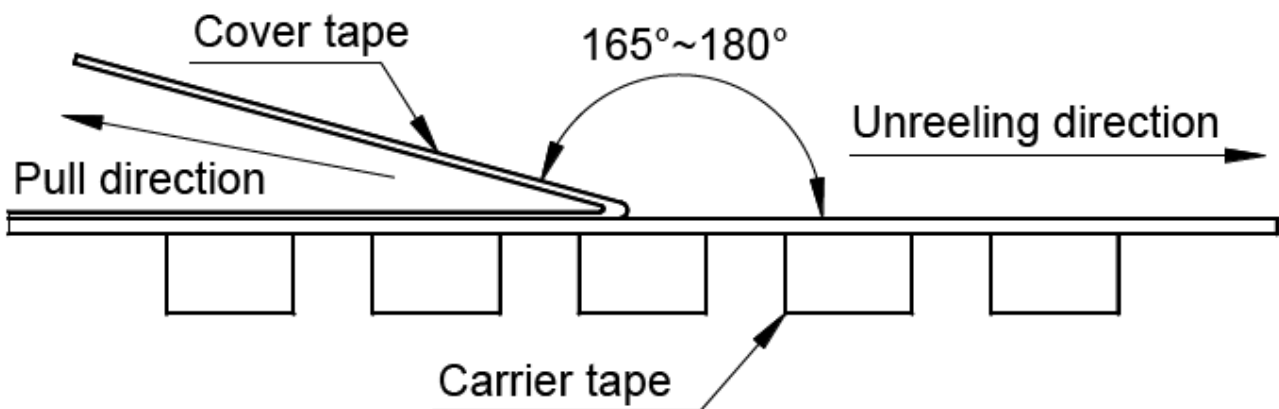


TYPE	W	W1	W2	W3	A	B	C	D
YSPI1050	330±2.0	2.4±2.0	22.4Max.	23.9 Min	13.0±0.50	21.0±0.80	2.0±0.50	100 Min

■ Direction of rolling



■ Cover tape peel off condition



Cover tape peel force shall be 0.1N to 1.3N.

Reference peel speed 300 ± 10 mm/min.