

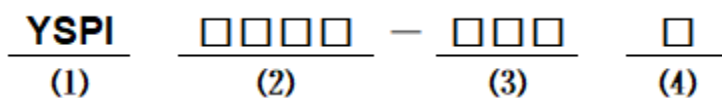
■ Features

- 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



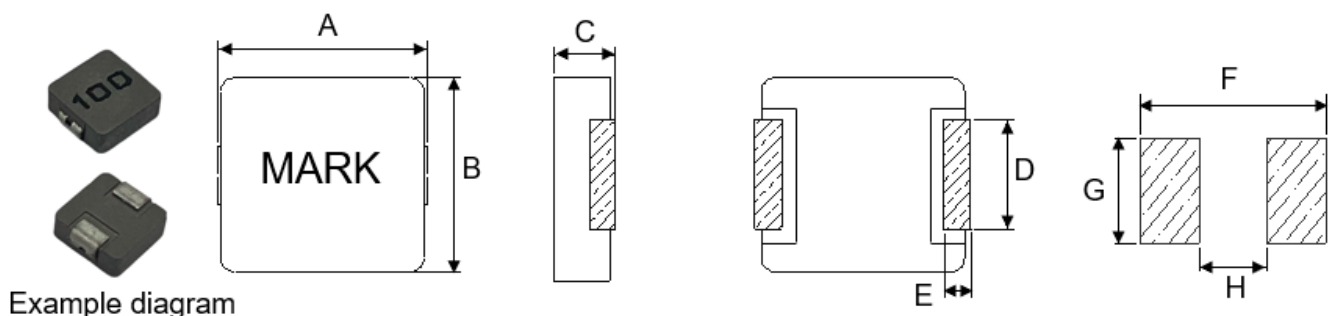
(1) : Type

(2) : Dimensions

(3) : Inductance value

(4) : Inductance Tolerance: $N=\pm 30\%$, $M=\pm 20\%$, $K=\pm 10\%$

■ Shapes and Dimensions (Unit: mm)



TYPE	A	B	C Max.	D	E	F Ref.	G Ref.	H Ref.
YSPI0520	5.7 ± 0.2	5.2 ± 0.2	2.0	2.0 ± 0.3	1.5 ± 0.3	6.0	2.5	2.2

■ YSPI0520 Series

Part Number	Inductance (μ H) @100KHz/1V	DCR Max. (m Ω)	Saturation Current Isat Typ.(A)	Heat Rating Current Irms Typ.(A)
YSPI0520-R22M	0.22 $\pm$ 20%	6.5	17.0	12.0
YSPI0520-R33M	0.33 $\pm$ 20%	8.0	15.0	11.0
YSPI0520-R47M	0.47 $\pm$ 20%	9.0	14.0	10.5
YSPI0520-R68M	0.68 $\pm$ 20%	13	12.0	8.5
YSPI0520-1R0M	1.0 $\pm$ 20%	17	8.0	7.0
YSPI0520-1R5M	1.5 $\pm$ 20%	35	6.5	5.5
YSPI0520-2R2M	2.2 $\pm$ 20%	45	6.0	4.0
YSPI0520-3R3M	3.3 $\pm$ 20%	60	5.0	3.5
YSPI0520-4R7M	4.7 $\pm$ 20%	90	5.0	3.0
YSPI0520-5R6M	5.6 $\pm$ 20%	120	4.5	2.8
YSPI0520-6R8M	6.8 $\pm$ 20%	125	3.4	2.8
YSPI0520-100M	10 $\pm$ 20%	180	3.0	2.3

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

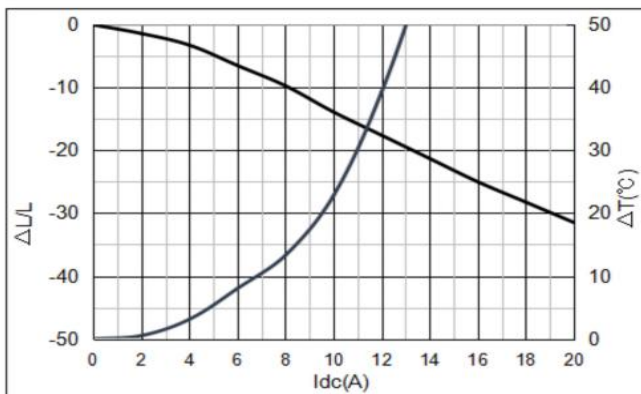
※ Irms (A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)

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

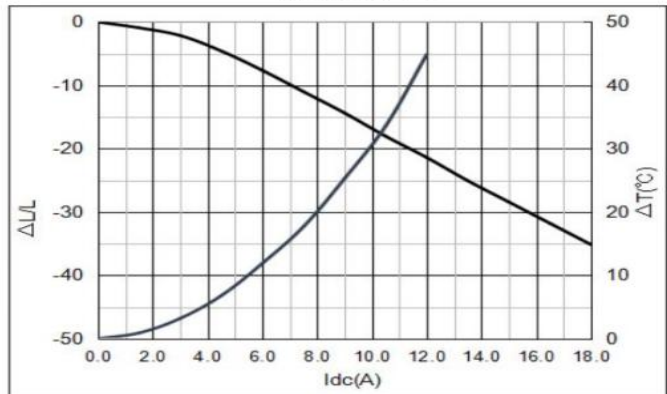
※ Absolute maximum voltage 30VDC.

■ Current Characteristic

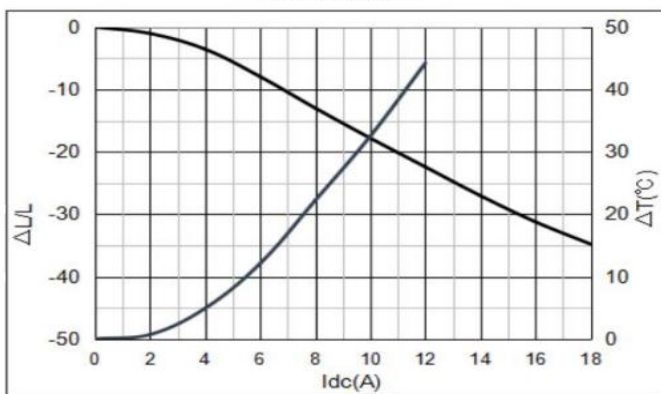
YSPI0520-R22M



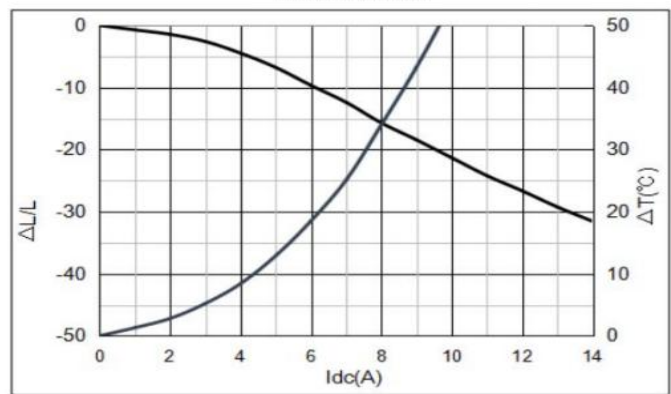
YSPI0520-R33M



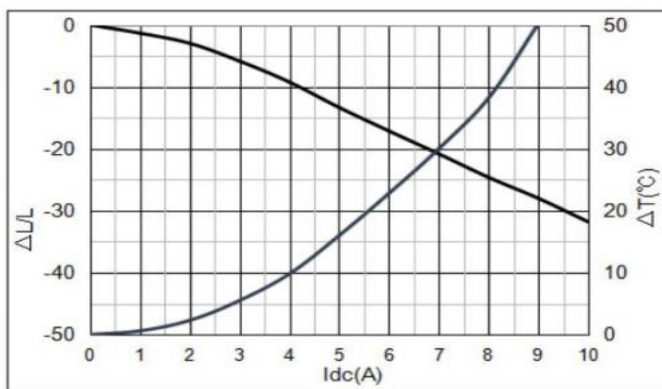
YSPI0520-R47M



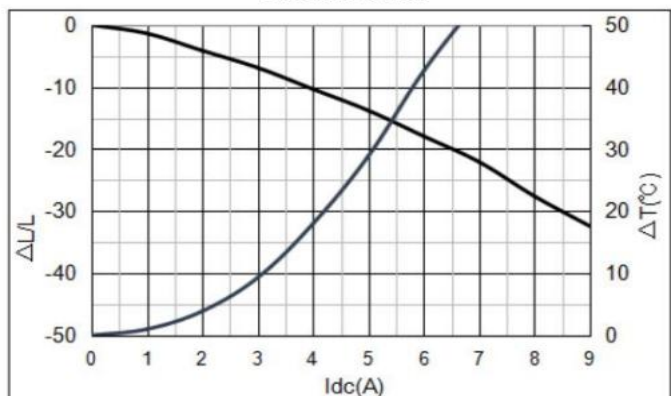
YSPI0520-R68M



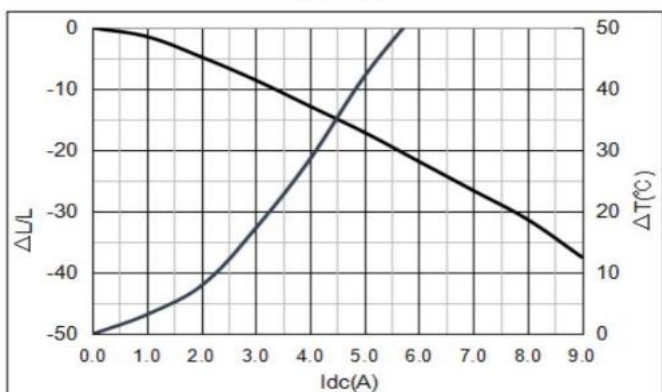
YSPI0520-1R0M



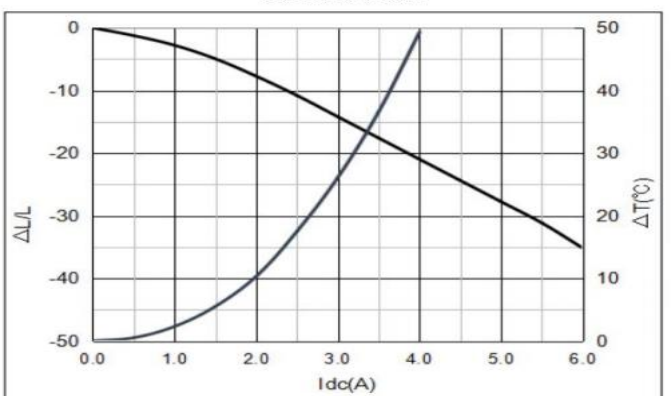
YSPI0520-1R5M



YSPI0520-2R2M

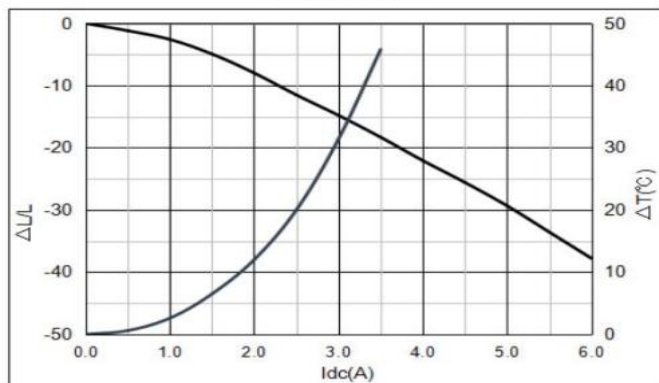


YSPI0520-3R3M

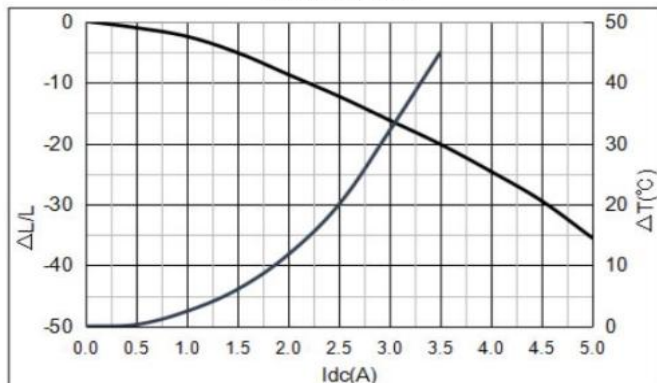


■ Current Characteristic

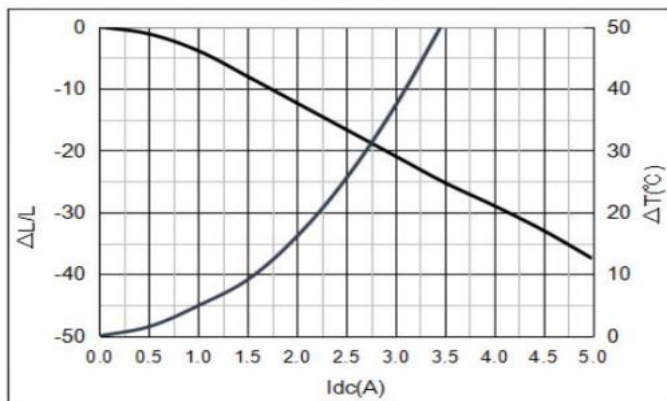
YSPI0520-4R7M



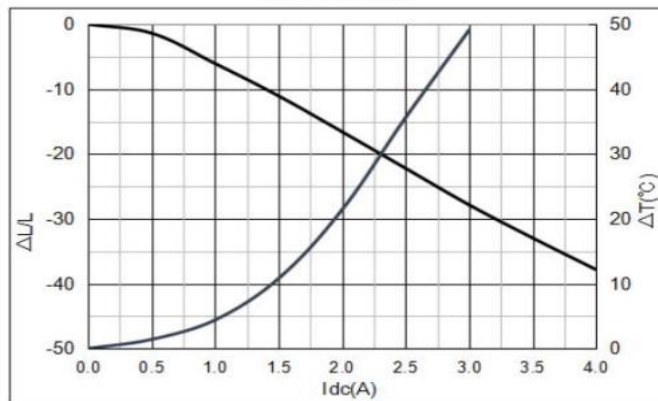
YSPI0520-5R6M



YSPI0520-6R8M



YSPI0520-100M



■ General Characteristics

NO.	ITEMS	CONDITIONS	SPECIFICATION
1	OPERATION TEMPERATURE STORAGE TEMPERATURE		-40 ~ +125℃ (INCLUDING COIL TEMPERATURE RISE) -40 ~ +125℃
2	TEMPERATURE COEFFICIENT	-30 ~ +105℃	0 ~ 2000ppm/℃
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℃ 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℃±2℃ HUMIDITY: 90%~95%RH DURATION: 96±4 HOURS.	DEVIATION RELATIVE TO INITIAL VALUE: L: WITHIN ±10%
8	THERMAL SHOCK TEST	20 CYCLES OF +105℃ FOR 30 MINUTES, -40℃ 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℃±2℃ DURATION: 96±4 HOURS	
10	LOW TEMPERATURE STORAGE TEST	TEMPERATURE: -40℃±3℃ DURATION: 96±4 HOURS.	

※ Standard testing conditions:

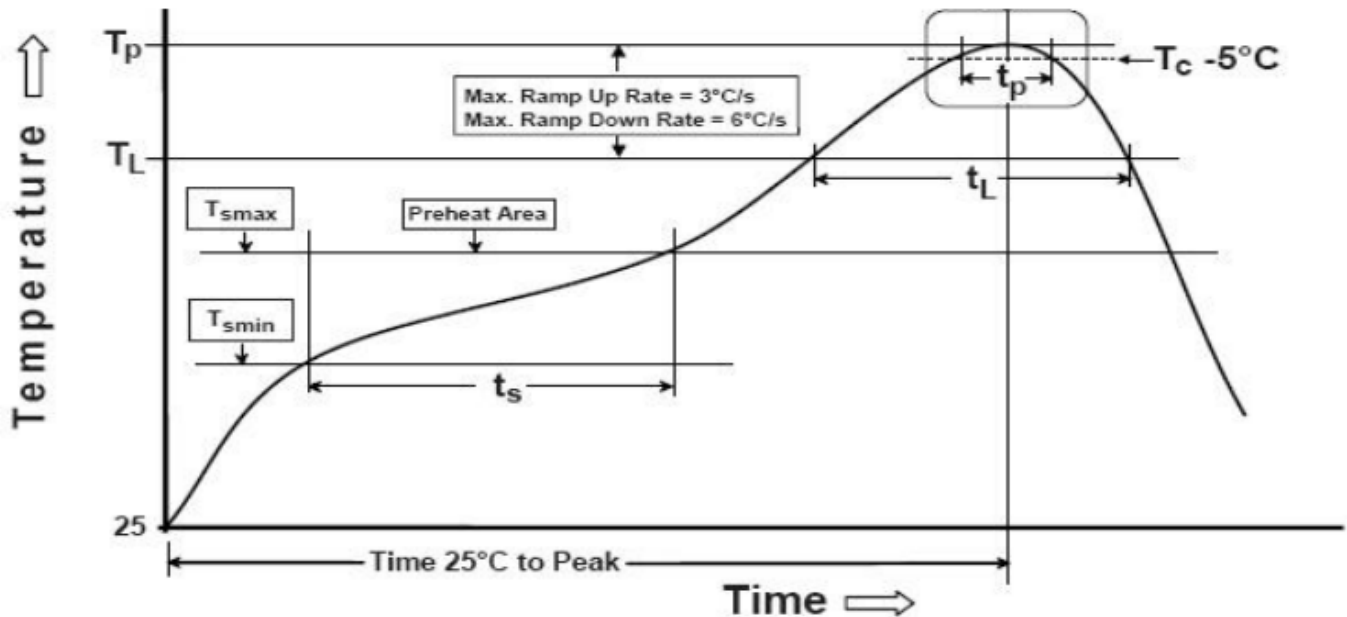
Unless otherwise specified, the standard range of atmospheric conditions for measurements and tests are as follows:

Ambient temperature: 15℃ ~ 35℃. 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℃±1℃. Relative humidity: 63% ~ 67%. Air pressure: 86kPa ~ 106kPa.

Reflow profile for SMT components



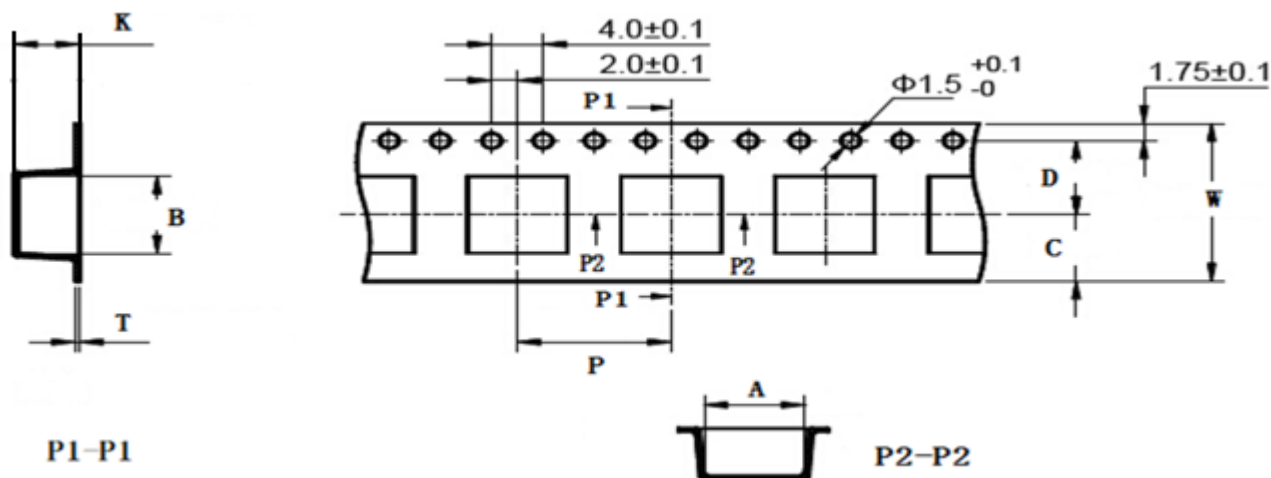
Reflow is referred to standard IPC/ JEDEC J-STD-020D

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 T_p		$3^\circ\text{C/Second Max.}$
Liquidous temperature (T_L)		217°C
Time (T_L) maintained above T_L		60-150 seconds
Peak package body temperature (T_p)		Table2
Time (t_p)* within 5°C of the specified classification temperature (T_c)		30* seconds
Average Ramp-down rate (T_p to T_L)		$6^\circ\text{C/second max}$
Time 25°C to peak temperature		8 minutes max.

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

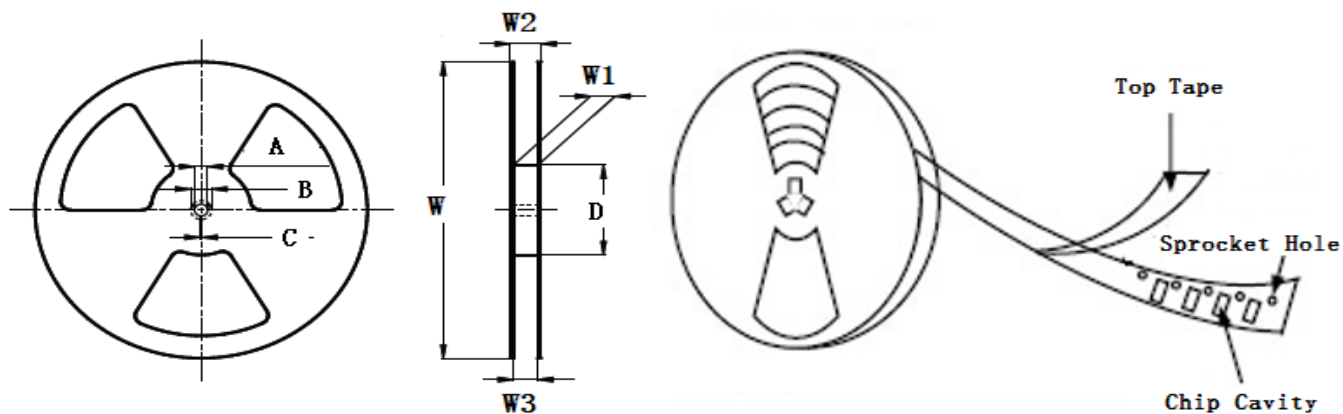
Package Thickness	Volume mm3 <350	Volume mm3 350~2000	Volume mm3 >2000
<1.6 mm	260°C	260°C	260°C
1.6mm- 2.5mm	260°C	250°C	245°C
>2.5 mm	250°C	245°C	245°C

■ Taping Dimensions(Unit:mm)



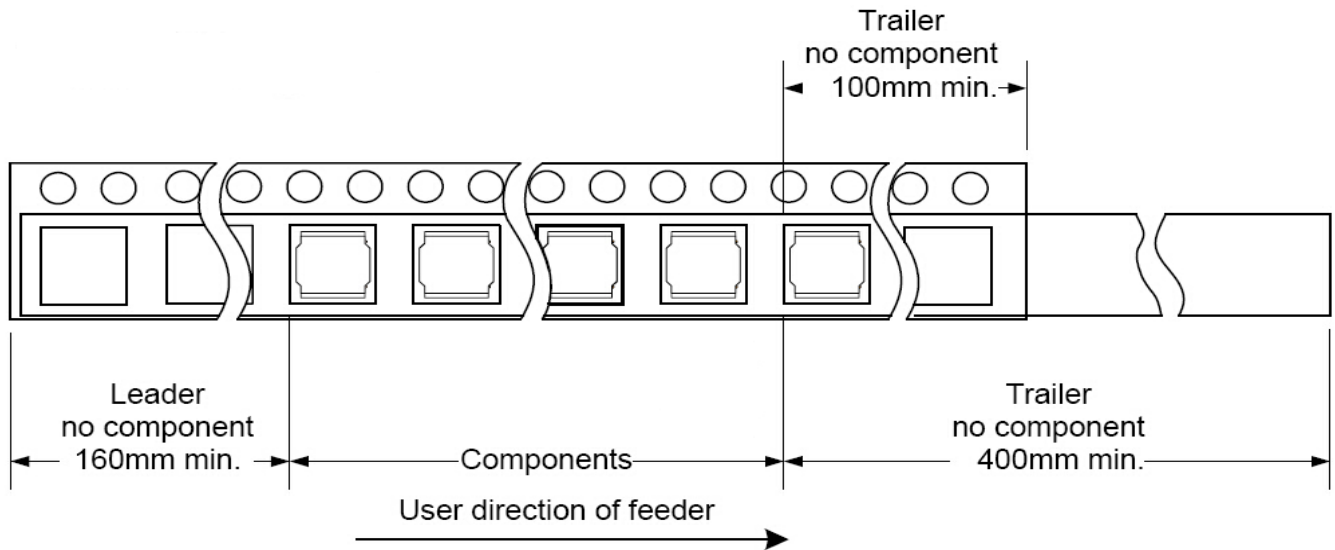
TYPE	W	A	B	C	D	P	K	T	MPQ
YSPI0520	12.0±0.2	5.5±0.1	5.6±0.1	4.75	5.5±0.1	8.0±0.1	2.20±0.1	0.35±0.05	3000

■ Reel Dimensions(Unit:mm)

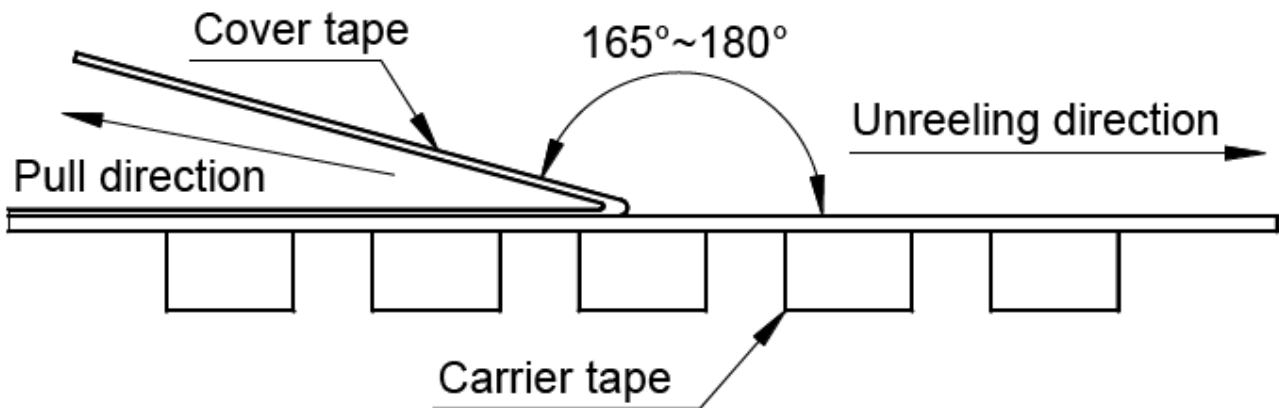


TYPE	W	W1	W2	W3	A	B	C	D
YSPI0520	330±2.0	12.4±2.00	18.4MAX	11.9 Min	13.0±0.50	21.0±0.80	2.0±0.50	100 Min

■ Direction of rolling



■ Cover tape peel off condition



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

Reference peel speed 300±10mm/min.