

■ Features

- High current type.
- Ferrite bobbin core and compact size.
- Low core loss for high frequency power application.
- Large terminal surface for good PCB bonding.
- Operating temperature: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$.

■ Applications

- Portable communication equipment.
- Notebook PC, digital camera, LCD television set.
- Power supply for VTR, OA equipment.
- DC/DC converters.

■ Product Identification

$\frac{\text{YPRH}}{(1)} \quad \frac{\square\square\square\square}{(2)} - \frac{\square\square\square}{(3)} \quad \frac{\square}{(4)}$

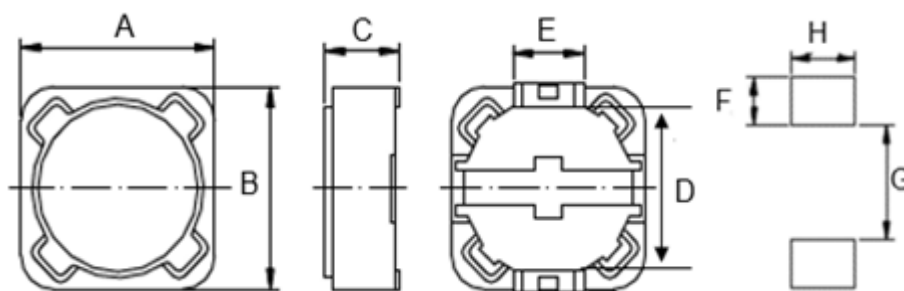
(1) : Type

(2) : Dimensions

(3) : Inductance value

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

■ Shapes and Dimensions (Unit: mm)



TYPE	A	B	C max	D	E	F Ref.	G Ref.	H Ref.
YPRH1209	12.0 $\pm$ 0.5	12.0 $\pm$ 0.5	10.0	7.9 $\pm$ 0.1	4.9 $\pm$ 0.1	2.6	7.4	5.4

■ Electrical Characteristics

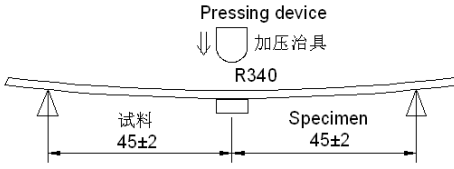
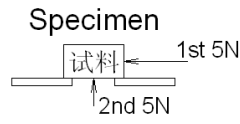
Part Number	Inductance	Test Frequency	DCR Max.(mΩ)	Isat Max.(A)
YPRH1209-220M	22uH±20%	100KHz/0.25V	50	5.0

- ※ The saturation current value is the DC current value having inductance decrease down to 30%.(at 25℃)
- ※ The temperature rise current value is the DC current value having temperature increase up to 40℃. (at 25℃)
- ※ The rated current is the DC current value that satisfies both of current value saturation current value and temperature rise current value.

■ Material List

NO.	ITEM	MATERIAL DESCRIPTION	SUPPLIER	REMARK
1	CORE	DL5	TAK	or Equivalent
2	WIRE	2UEWH	PACIFIC	or Equivalent
3	BASE	129R	HUIGAO	or Equivalent
4	EPOXY	WK8015	WELL	or Equivalent
5	SOLDER	SN99.3CU0.7	DAIHUI	or Equivalent
6	MARKING	100 Black	SENUON TRADING	or Equivalent

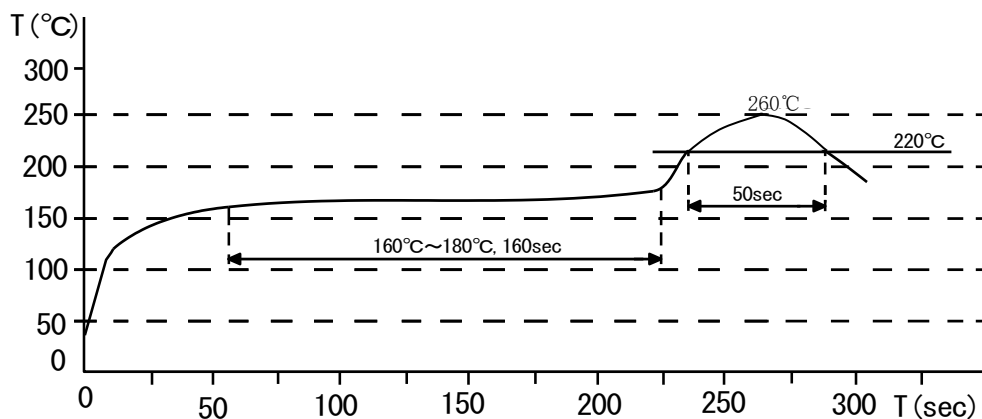
■ Reliability Testing Items

NO.	Item	Specification	Condition
1	Bending test	Change from an initial value L : within±10%	Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 3mm and hold for 30±5s.  Pressing device ↓ 加压治具 R340 基板 Board: 40X100mm 厚 Thickness: 1.0mm 试料 45±2 Specimen 45±2
2	Adhesion strength	Change from an initial value L : within±10%	A static load using a R0.5 pressing tool shall be applied the arrow and to the body of the specimen in the direction of the arrow and shall be hold for 60±5s. Measure after removing pressure.  Specimen 试料 1st 5N 2nd 5N
3	Vibration	Change from an initial value L : within±10%	The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz (10Hz to 55Hz to 10Hz in a period of one minute) for 1 h in each of 3(X,Y,Z) axes.
4	Mechanical shock	Change from an initial value L : within±10%	Peak acceleration: 981 m/S² Duration of pulse: 6ms 3 times in each of 3(X,Y,Z)axes. The specimen must be fixed on test board. Three successive shock shall be applied in the perpendicular direction of each surface of the specimen.
5	Free fall test	Change from an initial value L : within±10%	The specimen must be fixed on test board. It must be equipped with instruments of which weight is 500g. Then it shall be fallen freely from 1m height to rigid wood 3 times in each of three axes.
6	Solder ability	New solder shall cover 90% minimum of the surface immersed.	Terminals shall be immersed for 5 to 10 seconds in flux at room temperature. Dip sample into solder bath containing molten solder at 245±5°C for 3±0.5 seconds.
7	Resistance to soldering heat	Resistance to soldering heat	Test method Reflow soldering method Preheat 150~180°C 90±30s Peak temp 250(+ 5,-0)°C (230°Cmin , 30±10s) The specimen shall be subjected to the reflow process under the above condition 2 times. Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. Measurement The specimen shall be stored at standard atmospheric conditions for 1 h in prior to the measurement.

■ Reliability Testing Items

NO.	Item	Specification	Condition
8	Dielectric strength	Without damage.	100V DC shall be applied for 60s between the terminal and the core.
9	Insulation resistance	100mΩ or more.	100V DC shall be applied between the terminal and the core.
10	Low temperature	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of $-40\pm 3^{\circ}\text{C}$ for $500 \pm 12\text{h}$. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
11	Dry heat	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of $125\pm 2^{\circ}\text{C}$ for $500 \pm 12\text{h}$. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
12	Dump heat	Change from an initial value L : within±10%	The specimen shall be stored at a temperature of $125\pm 2^{\circ}\text{C}$ with relative humidity of 90 ~ 95% for $500 \pm 2\text{h}$. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
13	Temperature cycle	Change from an initial value L : within±10%	The specimen shall be subjected to 500 continuous cycles of temperature change of -40°C for 30 min and 125°C for 30 min with the transit period of 2min or less. Then it shall be stabilized under standard atmospheric conditions for 1 h before measurement. Measurement shall be made within 1h.
14	Temperature drift	Inductance temperature coefficient 2000 ppm/ $^{\circ}\text{C}$ or less	To be measured in the range of -40°C to 125°C .
15	Operating temperature range	$-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$	Including self temperature rise.
16	Storage temperature range	$-40 \sim +125^{\circ}\text{C}$	$-40 \sim +125^{\circ}\text{C}$

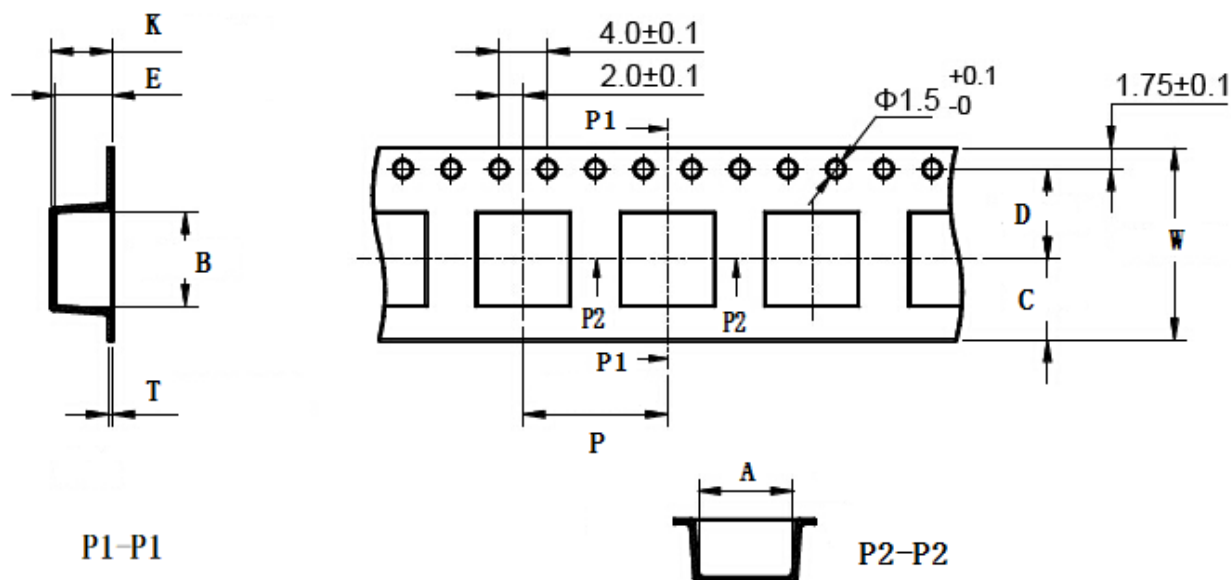
■ Recommended Reflow Condition



We recommend infrared ray as heat source of reflow bath.

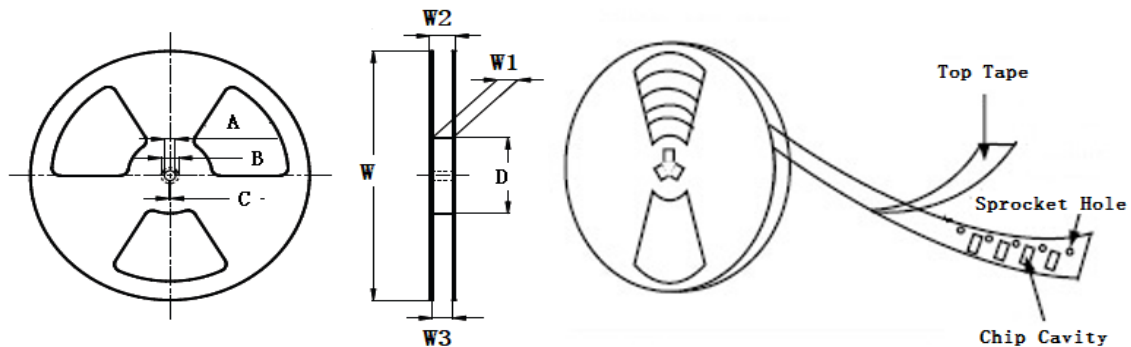
However halogen lamp shall be used, side heat will be beyond range of resistance heat, so we can't recommend it.

■ Taping Dimensions(Unit:mm)



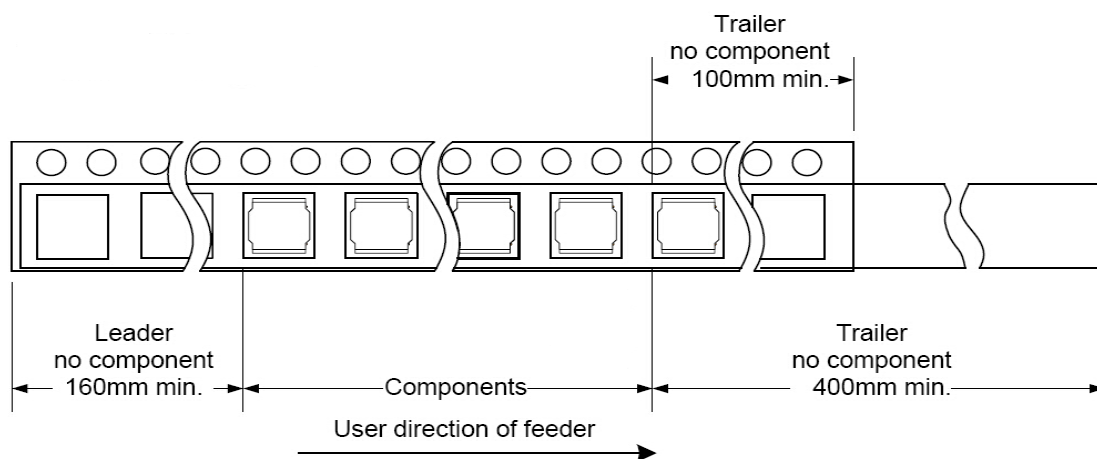
TYPE	W	A	B	C	D	E	P	K	T	MPQ
YPRH1209	24±0.3	12.6±0.1	12.6±0.1	10.75	11.5±0.1	8.2±0.1	20±0.1	10.0Ref	0.4±0.05	400

■ Reel Dimensions(Unit:mm)

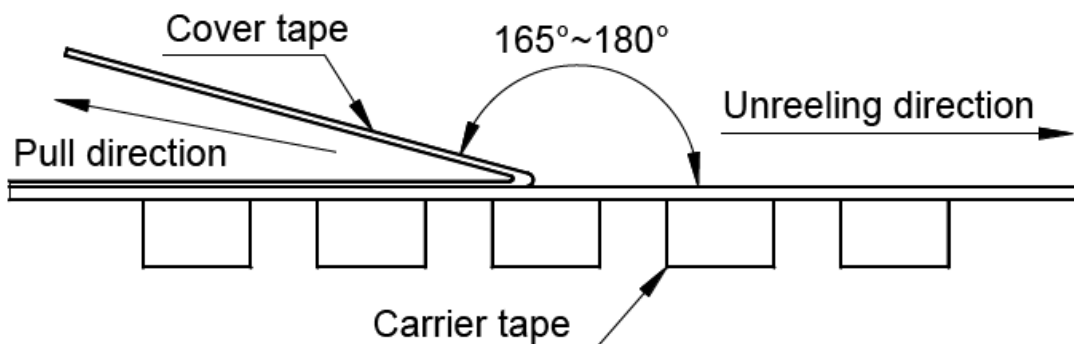


TYPE	W	W1	W2	W3	A	B	C	D
YPRH1209	330±2.0	24.4±1.5	30.4 Max	23.9 Min	13.0±0.5	21.0±0.8	2.0±0.5	100 Min

■ 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.