

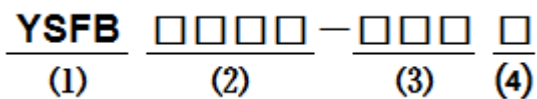
**■ Features**

- Assemblage design, sturdy structure.
- High inductance, high current, low magnetic loss, low ESR, small parasitic capacitance.
- Flat wire winding, achieve a low D.C. Resistance.
- Temperature rise current and saturation current is less influenced by environment.
- Operating temperature range: -40°C ~ +125°C.

**■ Applications**

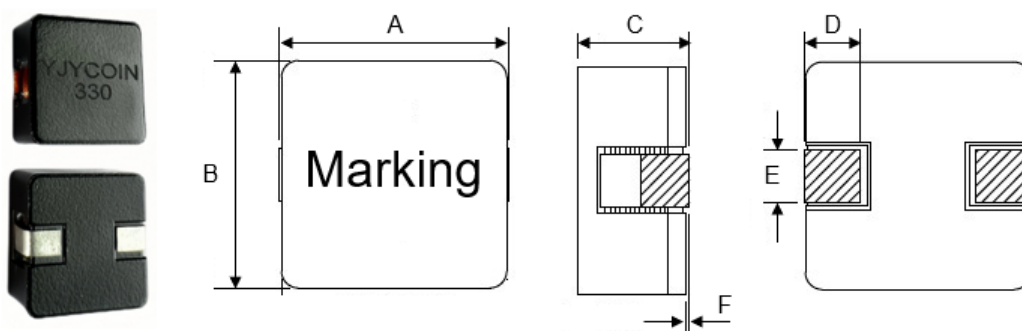
- Low profile, high current power supplies.
- Battery powered devices.
- DC/DC converters in distributed power systems.
- DC/DC converters for field programmable gate array.

**■ Product Identification**



- (1) : Type
- (2) : Dimensions
- (3) : Inductance value
- (4) : Inductance Tolerance: M=±20%, K=±10%

**■ Shapes and Dimensions (Unit: mm)**



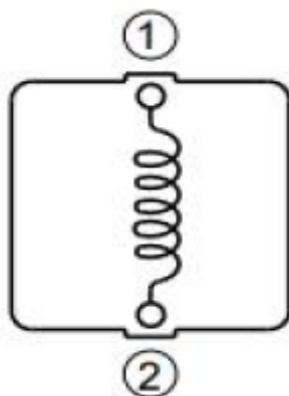
TYPE	A	B	C	D	E	F
YSFB1890	18.3±1.0	18.2±0.5	8.9±0.3	4.5±1.0	3.0±0.5	0~0.3

**Electrical requirements**

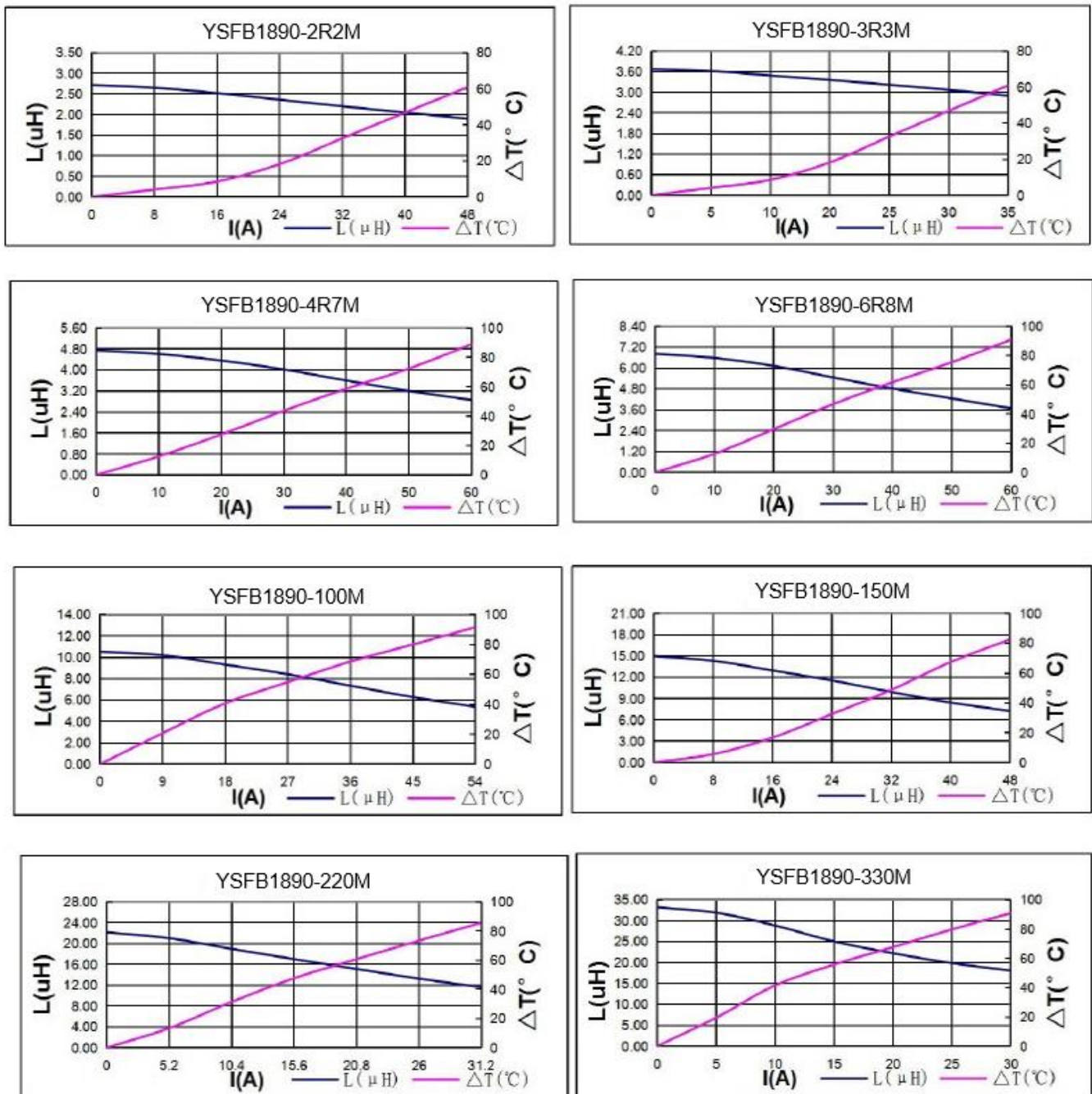
Part Number	Inductance (uH)	DCR Max. (mΩ)	Saturation current (A)	Temperature rise current(A)
YSFB1890-1R3M	1.3±20%	1.20	67	32
YSFB1890-2R2M	2.2±20%	1.82	50	32
YSFB1890-3R3M	3.3±20%	2.60	43	25
YSFB1890-4R7M	4.7±20%	3.40	39	23
YSFB1890-6R8M	6.8±20%	4.70	31	19
YSFB1890-100M	10±20%	6.90	24	16
YSFB1890-150M	15±20%	10.0	22	14
YSFB1890-220M	22±20%	14.1	18	11
YSFB1890-330M	33±20%	23.0	14	8.5

- ※ All test data is based on 25 °C ambient.
- ※ DC current(A) that will cause an approximate ΔT40°C.
- ※ DC current(A) that will cause L0 to drop approximately 30% Typ.
- ※ The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions. Circuit design,component.PWB trace size and thickness,airflow and other cooling provision all affect the part temperature.Part temperature should be verified in the den application.

**Electrical schematics**



**Current characteristic**

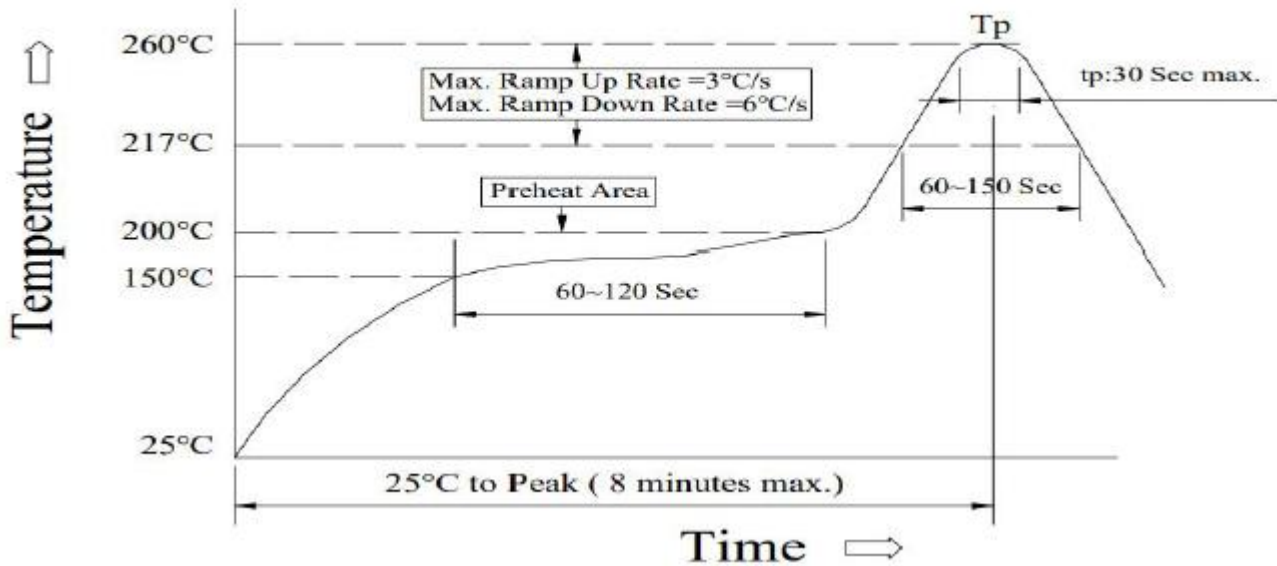


## ■ Reliability

Item	Specification and Requirement	Test Method
Solder ability test	Terminals area must have 95% min solder coverage	Solder heat proof: ① Preheating: $160 \pm 10^{\circ}\text{C}$ for 90 seconds ② Retention time: $245 \pm 5^{\circ}\text{C}$ for $2 \pm 0.5$ seconds
Vibration test	Inductance change: Within $\pm 5\%$ Without Mechanical damage such as break	① Vibration frequency: (10Hz to 55Hz to 10Hz) in 60 seconds as a period ② Vibration time: Period cycled for 2 hours in each of 3 mutual perpendicular directions. ③ Amplitude: 1.5mm Max.
Shock test	Inductance change: Within $\pm 5\%$ Without Mechanical damage such as break	① Peak value: 100G. ② Duration of pulse: 11ms. ③ Times in each positive and negative direction of 3 mutual perpendicular directions
Thermal shock	Inductance change: Within $\pm 5\%$ Without Mechanical damage such as break	① Repeat 100 cycle as follow ( $-55 \pm 2^{\circ}\text{C}$ 30 $\pm$ 3 minutes), Room temperature, 5 minutes ( $+125 \pm 2^{\circ}\text{C}$ , 30 $\pm$ 3 minutes) ② Recovery: 48+4/-0 hours of recovery Under the standard condition after the test. (see Note 1)
High temperature life test	Inductance change: Within $\pm 5\%$ Without Mechanical damage such as break	① Environment condition: $85 \pm 2^{\circ}\text{C}$ Applied current: Rated current ② Duration: 1000+4/-0 hours (see Note 1)
Humidity Resistance	Inductance change: Within $\pm 5\%$ Without Mechanical damage such as break	① Environment condition: $60 \pm 2^{\circ}\text{C}$ Humidity: 90-95% Applied current: Rated current ② Duration: 1000+4/-0 hours (see Note 1)
Low temperature life test	Inductance change: Within $\pm 5\%$ Without Mechanical damage such as break	Store temperature $-55 \pm 2^{\circ}\text{C}$ for total 1000+4/-0 hours
High temperature life test	Inductance change: Within $\pm 5\%$ Without Mechanical damage such as break	Store temperature $+125 \pm 2^{\circ}\text{C}$ for total 1000+4/-0 hours

**Reflow Profile**

**Power Choke Coil Type**



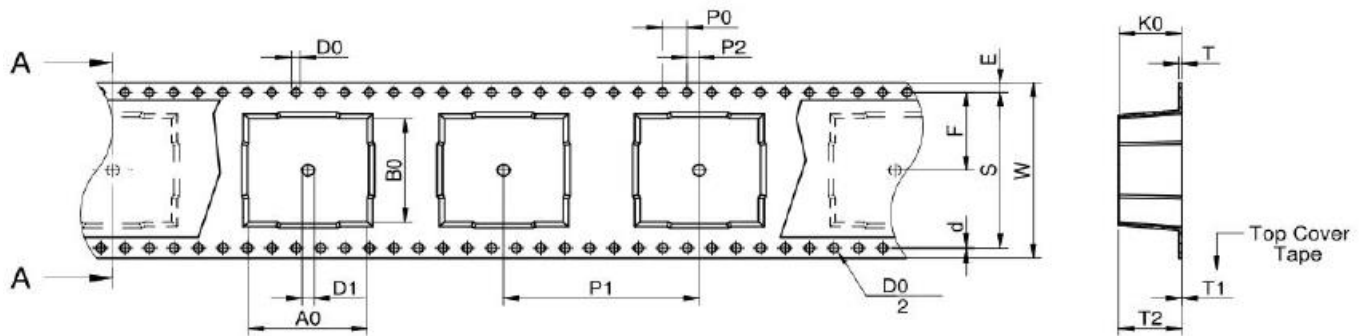
**Reflow Soldering Method**

Reflow Soldering	Tp:255 ~ 260°C	Max. 30 seconds(tp)
	217°C	60 ~ 150 seconds
Pre-Heat	150 ~ 200°C	60 ~ 150 seconds
Time 25°C to peak temperature	8 minutes Max.	

**Soldering iron method**

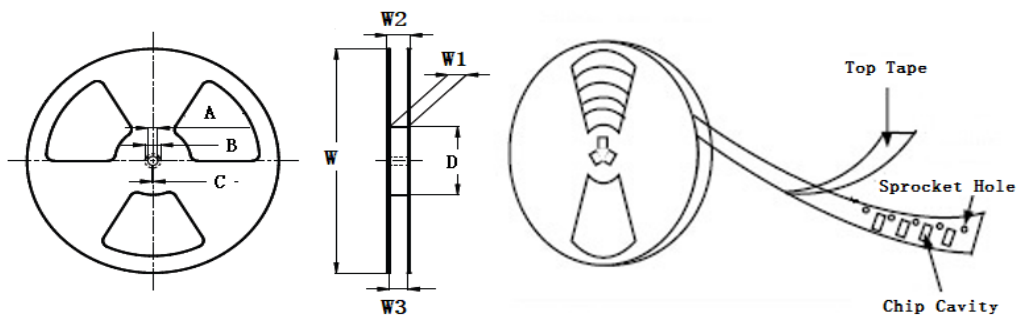
350±5°C Max.3 seconds.

**■ Taping Dimensions(Unit:mm)**



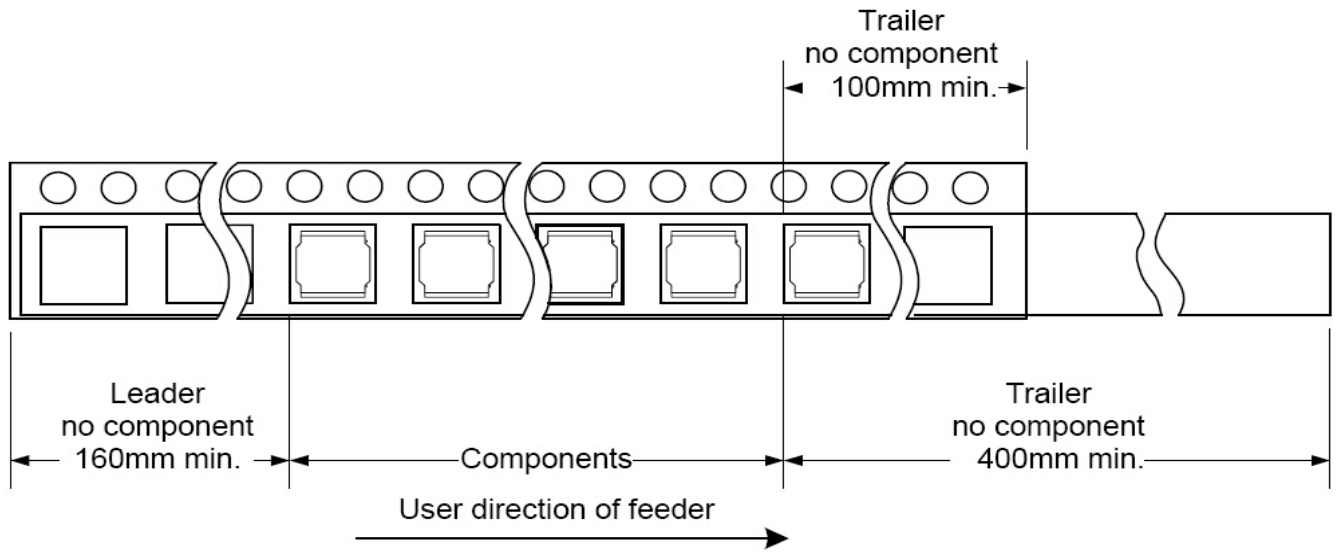
W	A0	B0	K0	P	E	F	D0	P0	T	MPQ
32±0.3	19.4±0.1	18.8±0.1	9.5±0.1	0.2±0.05	1.75±0.1	14.2±0.1	1.5±0.1	4.0±0.1	0.5±0.05	250

**■ Reel Dimensions(Unit:mm)**

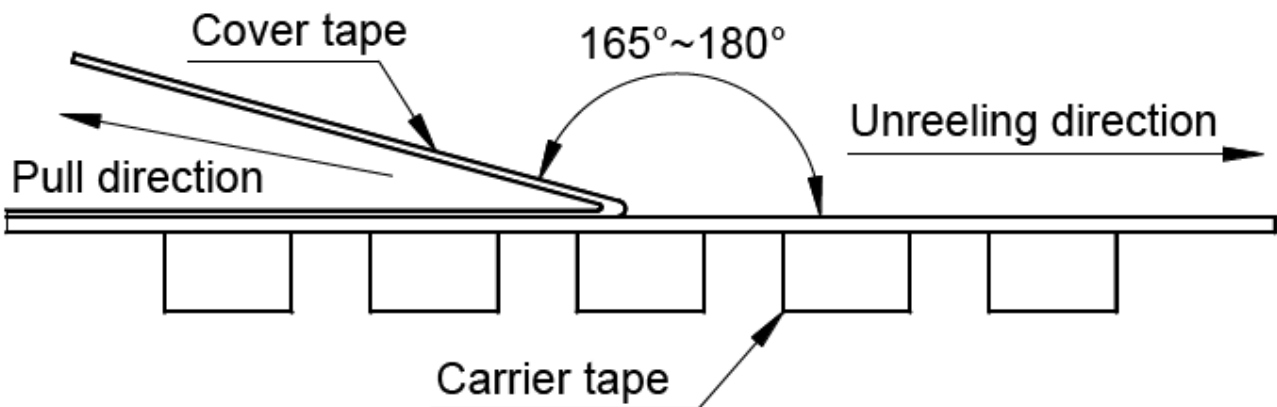


TYPE	W	W1	W2	W3	A	B	C	D
YSFB1890	330±0.5	32.4+1.5-0	38.4Max	31.9 Min	13.0±0.50	21.0±0.80	2.0±0.50	100 Min

**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.

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