



Power Inductor EBP0630A-TWA Product Specifications

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■ Power Inductor — EBP0630A-TWA Series



■ Application

- Automotive applications

■ Features

- ROHS · Halogen Free and REACH compliance.
- High rated current.
- 155°C maximum total temperature operation.
- Low core loss.
- Ultra low buzz noise due to molding construction.
- AEC-Q200 qualified.

■ Parts Number Explanation

Example:

EBP	0630	A	—	4R7	M	—	T	W	A
Product Type	Size (mm)	Application		Inductance (uH)	Tolerance		Package	Internal Code	Optional
Molding Power Inductor				4R7 : 4.7uH 220 : 22.0uH	M : ±20%		T : Taping		A : For Automotive Electronics



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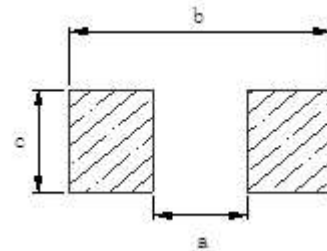
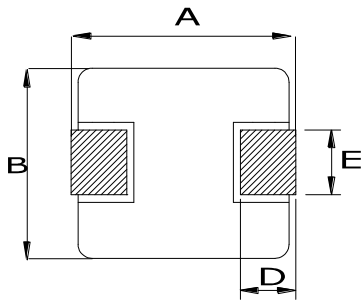
■ Standard Electrical Specifications

Part No.	Inductance	DC Resistance		Saturation Current		Heating Rating Current	
	L0 (μH)	DCR (mΩ)		Isat (A)		Irms (A)	
	±20 %, 100 kHz, 1V	Typ	Max	TYP.	Max	TYP.	Max
EBP0630A-4R7M-TWA	4.7	29	33	9.0	7.5	6.0	5.5
EBP0630A-220M-TWA	22	140	170	3.0	2.6	2.5	2.2

Notes:

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 55 °C to + 155 °C
3. Irms (A): DC current (A) that will cause an approximate ΔT of 40 °C (reference ambient temperature is 25 °C)
4. Isat(A): DC current (A) that will cause L0 to drop approximately 30 %
5. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
6. The part temperature (ambient + temp rise) should not exceed 155 °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.
7. Cleaning Process Note
 - (a) If this power choke is dipped in the cleaning agent, such as toluene, xylene, ketone, and ether system, there is a possibility that the performance decreases greatly
 - (b) The high power ultrasonic washing may damage the choke body.
 - (c) Please contact us if you need the cleaning via the above agents or ultrasonic washing.

■ Dimensions



Recommend Land Pattern

Unit: mm

Type	A	B	C	D	E	a typ	b typ	c typ
EBP0630A	7.0±0.3	6.6±0.2	2.8±0.2	1.6±0.3	3.0±0.3	3.7	8.4	3.5

■ Marking

- The inductor is marked with a 3-digit code

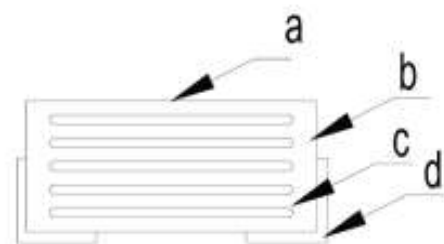
Nominal Inductance	
Example	Nominal Value
1R0	1.0 μ H
100	10 μ H
101	100 μ H



Note : Using Ink for marking

■ Structure and Components

Symbol	Components	Material
a	MARKING	Ink (black)
b	CORE	Alloy Sponge Powder
c	WIRE	Polyurethane copper wire
d	TERMINAL	Copper plated with Sn





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● Reliability test and requirement

Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	1. No case deformation or change in appearance 2. New solder coverage More than 95%	1. Preheat: $155^{\circ}\text{C} \pm 5^{\circ}\text{C}$, $60\text{s} \pm 2\text{s}$ 2. Tin: lead-free. 3. Temperature: $240^{\circ}\text{C} \pm 5^{\circ}\text{C}$, flux $3.0\text{s} \pm 0.5\text{s}$.
Mechanical shock	1. No case deformation or change in appearance 2. $\Delta L/L_0 \leq \pm 10\%$	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 appearance 2. $\Delta L/L_0 \leq \pm 10\%$	1. Reflow: 2times 2. Frequency: $10\text{HZ} \sim 55\text{HZ} \sim 10\text{HZ}$, 20 Min/Cycles 3. Amplitude: 1.52 mm 4. Directions: X,Y,Z 5. Time: 12 cycle / direction
Endurance Reliability		
Item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. First -55°C for 30 minutes, last 155°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 $\pm 10\%$ Without distinct damage in appearance	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 $\pm 10\%$ Without distinct damage in appearance	1. Temperature: $-55 \pm 2^{\circ}\text{C}$ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours
High temperature storage	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Temperature: $+155 \pm 2^{\circ}\text{C}$ 2. Time: 1000 hours 3. Measured at room temperature after placing for 24 ± 2 hours



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Recommended Soldering Technologies:

(1) Re-flowing Profile

Preheat condition: 150 ~200°C/60~180sec.

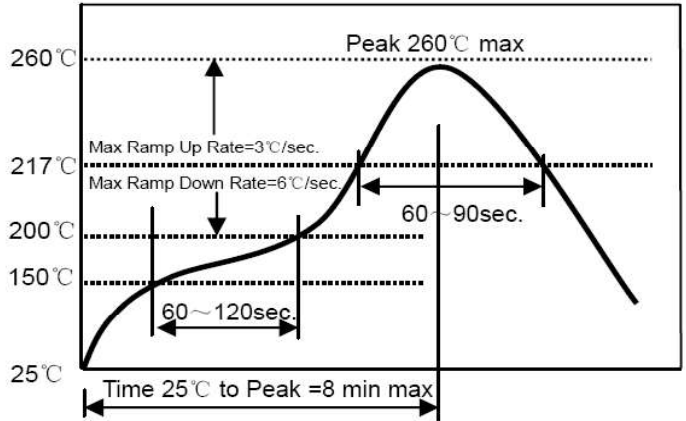
Allowed time above 217°C: 80~120sec.

Max temp: 260°C

Max time at max temp: 10 sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max



(2) Iron Soldering Profile

Iron soldering power: Max. 30W

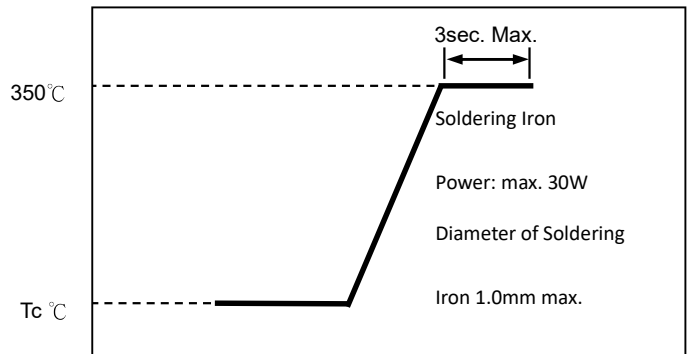
Pre-heating: 150°C/60sec.

Soldering Tip temperature: 350°C Max.

Soldering time: 3sec. Max.

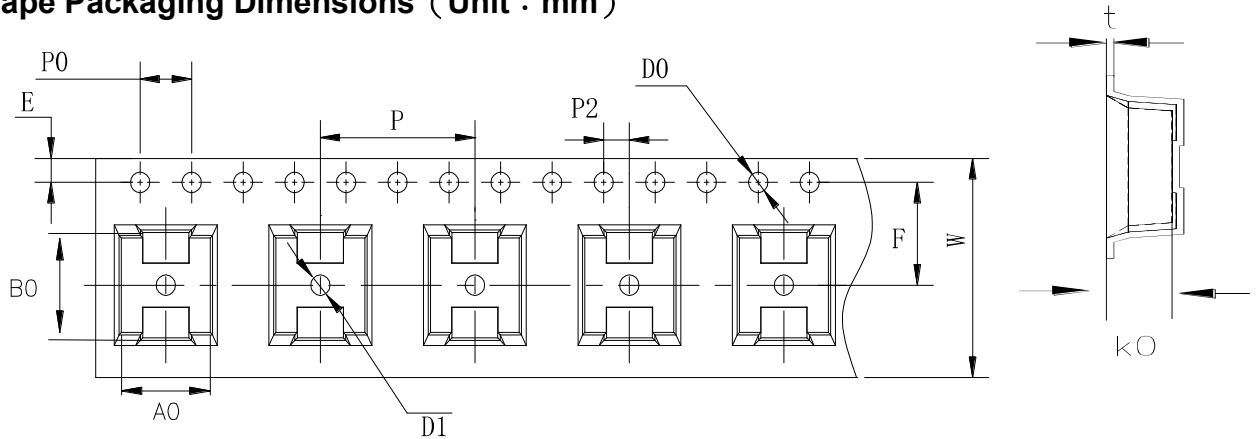
Solder paste: Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering



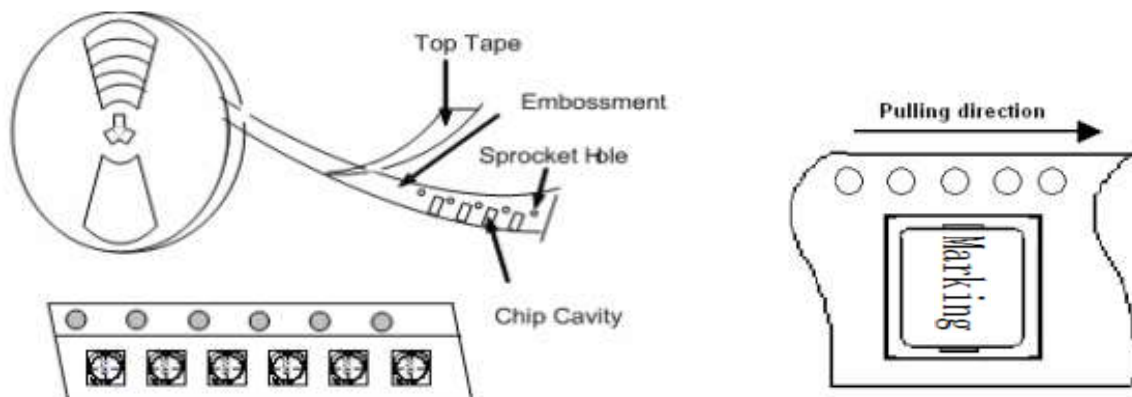
■ Packaging Information

(1) Tape Packaging Dimensions (Unit : mm)

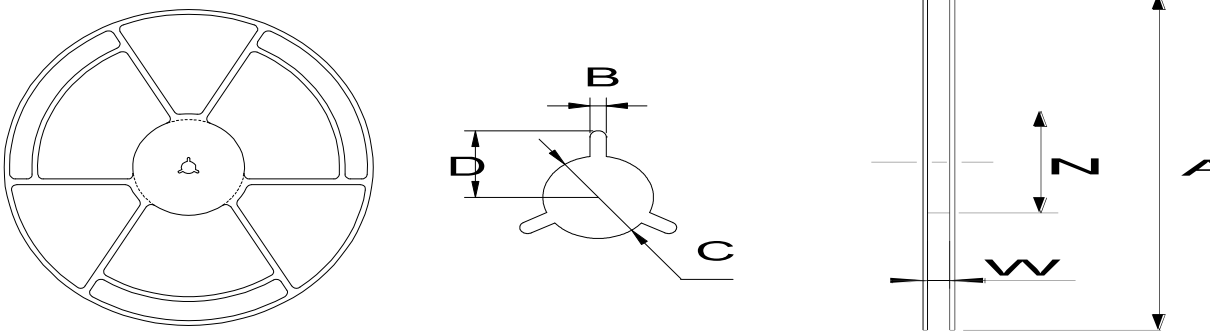


Type	Tape dimensions (mm)											
	W	P	P0	P2	D0	D1	t	A0	B0	K0	E	F
EBP0630A	16±0.3	12±0.1	4±0.1	2±0.1	1.5±0.1	1.5±0.1	0.35±0.05	6.9±0.1	7.5±0.1	3.3±0.1	1.75±0.1	7.5±0.1

(2) Taping Drawings (Unit : mm)



(3) Reel Dimensions (Unit : mm)



TYPE	A	W	N	B	C	D
EBP0630A	330+2.0	16.8±0.2	97±0.5	2.2+0.5	13.2±0.2	10.75±0.25

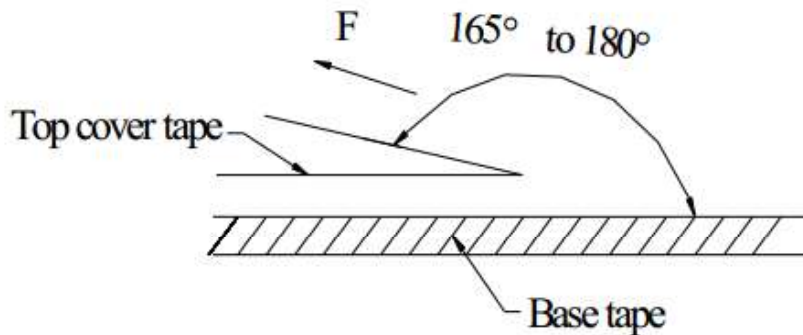
(4) Packaging Quantity (PCS)

Type	Standard Quantity		
	Reel	Inner box	Carton box
EBP0630A	1500 pcs / reel	3Reel / box (4,500 pcs)	4Middle boxes, (18,000 pcs)

(5) Peel force of top cover tape

The peel speed shall be about 300mm/minute

The peel force of top cover tape shall be between 0.1 to 1.3 N



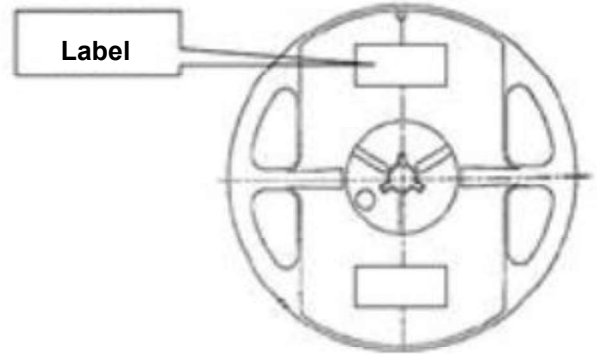


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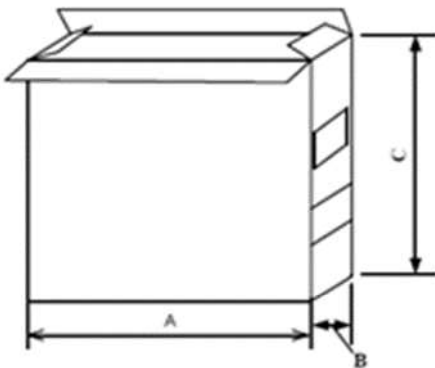
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(6) Reel Label

- Label on the reel
 - Everohms part Number.
 - Lot Number
 - Quantity
 - Description
- Shipping Label
 - Customer's part Number
 - Manufacturer's part Number
 - Quantity
 - date code

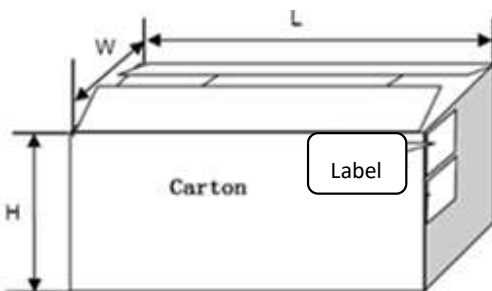


(7) Inner Box



Packaging Type	A (mm)	B (mm)	C (mm)
Inner box	335	70	340

(8) Carton



Packaging Type	L (mm)	W (mm)	H (mm)
Carton	360	360	360