# Wire Wound Type Balun – *WB3F Series*

## 1. Part No. Expression:

**W B 3 F 5 0 0 1 1 - T E 2**

(a) (b) (c) (d)

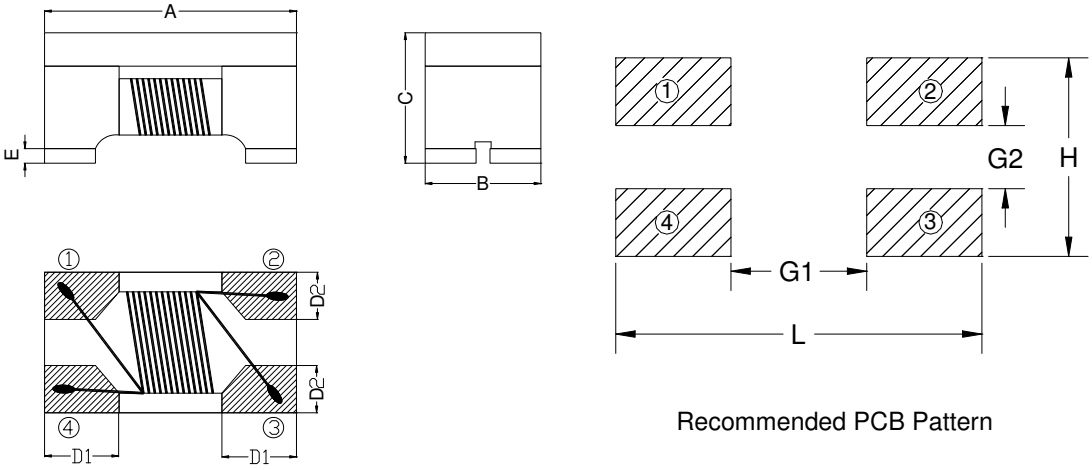
(a) Series Code

(b) Impedance Code

(c) Turns Rate Code

(d) Internal Code

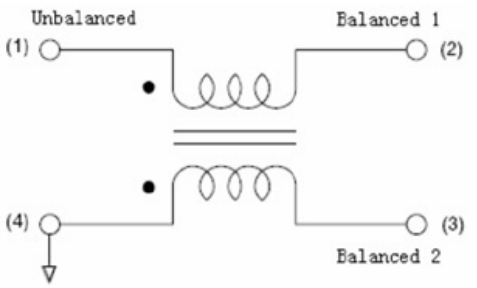
## 2. Configuration & Dimensions: (Unit:- mm)




Recommended PCB Pattern

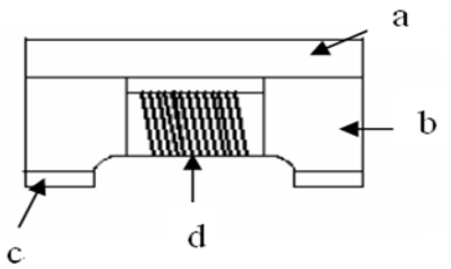
| A | B | C | D1 | D2 | E | L | G1 | G2 | H |
|---|---|---|---|---|---|---|---|---|---|
| 2.0±0.2 | 1.2±0.2 | 1.2±0.2 | 0.50±0.1 | 0.51±0.1 | 0.15±0.1 | 2.60 Ref | 1.25 Ref | 0.45 Ref | 1.40 Ref |

## 3. Schematic:




NOTE: Specifications subject to change without notice. Please check our website for latest information.

## 4. Material List:




a) Upper Plate
b) Core
c) Termination
d) Wire

## 5. General Specifications:

(a) Operating Temp. : -40°C to +125°C (including self-rise temperature).
(b) Storage Temp. : -40°C to +125°C (on board).
(c) Storage Condition (Component in its packaging)
  i) Temperature: Less than 40°
  ii) Humidity: 60% RH.

## 6. Electrical Characteristics:

| Part Number | UB/B Impedance (Ω) | Test Frequency (MHz) | DC Resistance (Ω) Max. | Rated Power (dBm) Max. | Rated Volt. (DCV) Max. | Withstand Volt. (DCV) Max. | IR (MΩ) Min. | Insertion Loss (dB) Max | CMRR (dB) |
|---|---|---|---|---|---|---|---|---|---|
| WB3F50011-TE2 | 50/50 | 400~1800 | 0.50 | 27 | 20 | 125 | 10 | 2.2 | 15 (typ.) |
| WB3F50011-T02 | 50/50 | 40~ 860 | 1.00 | 27 | 20 | 125 | 10 | 2.5 | 20 (typ.) |
| WB3F50011-MN2 | 50/50 | 100~1000 | 0.35 | 27 | 20 | 50 | 10 | 1.0 | 10 (min.) |
| WB3F50011-ST2 | 50/50 | 45~870 | 1.00 | 27 | 20 | 50 | 10 | 1.2 | 20 (min.) |
| WB3F75011-TE2 | 75/75 | 400~1800 | 0.50 | 27 | 20 | 125 | 10 | 2.0 | 15 (typ.) |
| WB3F75011-T02 | 75/75 | 50~1200 | 0.70 | 27 | 20 | 125 | 10 | 1.2 | 20 (typ.) |
| WB3F75011-MS2 | 75/75 | 1000~1500 | 0.59 | 27 | 20 | 50 | 10 | 1.4 | 20 (min.) |
| WB3F75011-MT2 | 75/75 | 50~1200 | 0.77 | 27 | 20 | 50 | 10 | 1.0 (1)<br>1.2 (2) | 20 (min.) |
| WB3F75011-SA2 | 75/75 | 45~870 | 0.88 | 27 | 20 | 50 | 10 | 1.0 | 20 (min.) |
| WB3F75011-SB2 | 75/75 | 50~1200 | 0.70 | 27 | 20 | 50 | 10 | 1.2 | 20 (min.) |
| WB3F75011-122 | 75/75 | 1000~1500 | 0.59 | 27 | 20 | 50 | 10 | 1.4 | 20 (min.) |

Note: (1) 50~870MHz = 1.0
(2) 870~1200MHz = 1.2

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## 7. Characteristics Curves:

WB3F50011-TE2


WB3F50011-T02


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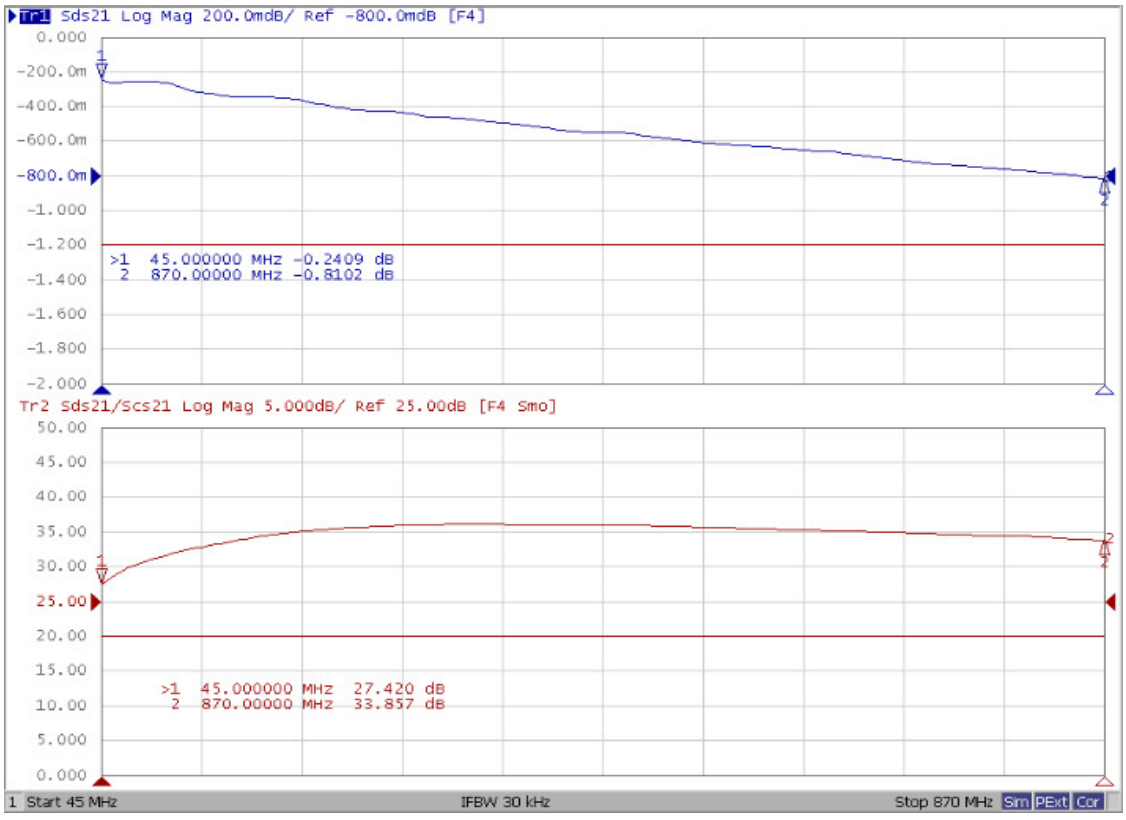
WB3F50011-MN2


WB3F50011-ST2

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WB3F75011-TE2


WB3F75011-T02


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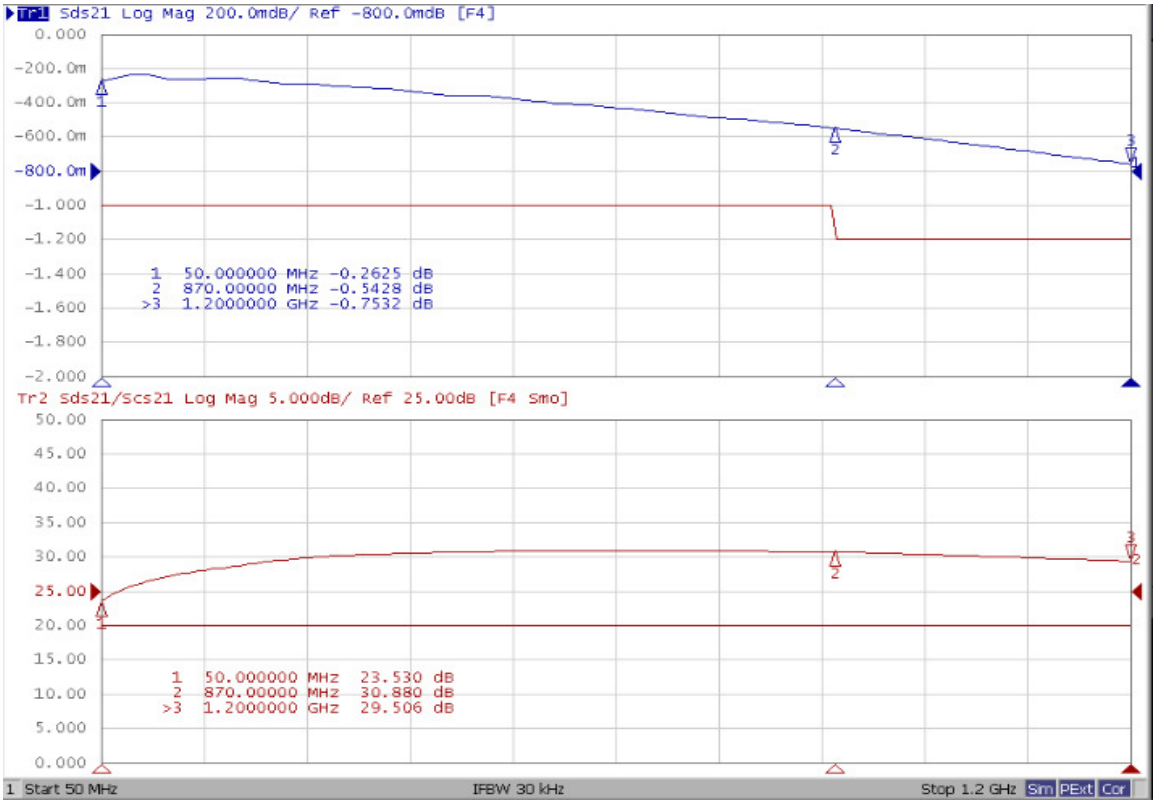
WB3F75011-MS2


WB3F75011-MT2

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WB3F75011-SA2


WB3F75011-SB2


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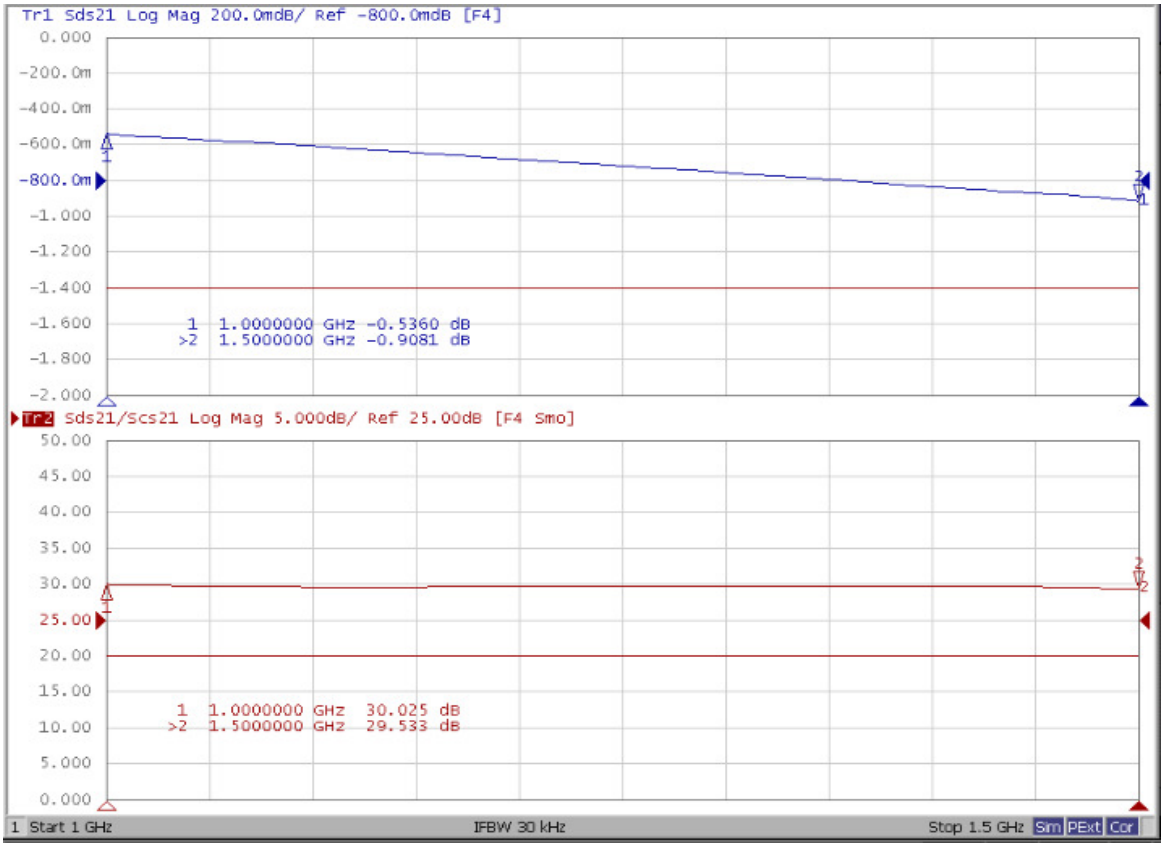
WB3F75011-122

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## 8. Soldering and Mounting:

Mildly activated rosin fluxes are preferred. Our terminations are suitable for all re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

### 8-1 Lead Free Solder Re-flow

Recommended temperature profiles for re-flow soldering in Figure 1.

### 8-2 Soldering Iron (Figure 2)

Products attachment with soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

Note:

a) Preheat circuit and products to 150°C.

b) 350°C tip temperature (Max.)

c) Never contact the ceramic with the iron tip

d) 1.0mm tip diameter (Max.)

e) Use a 20 Watt soldering iron with tip diameter of 1.0mm

f) Limit soldering time to 4~5 sec.

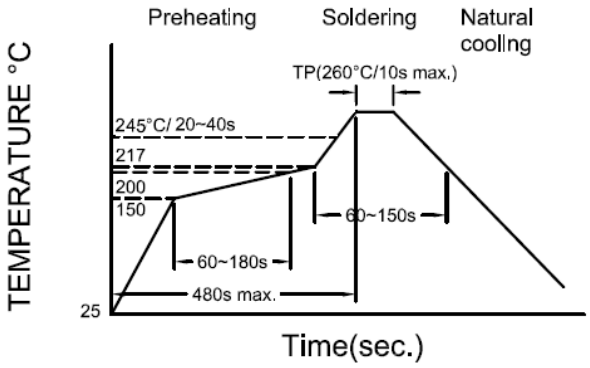



Figure 1: Re-flow Soldering time
3 times Max

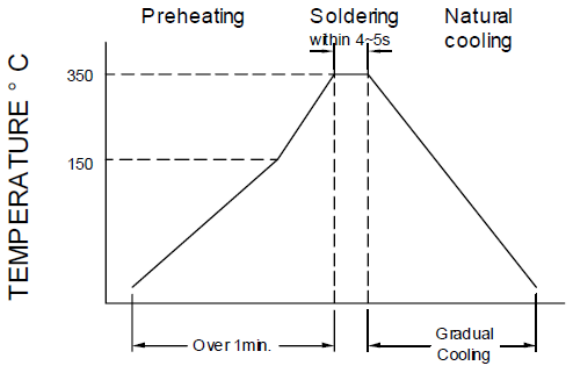
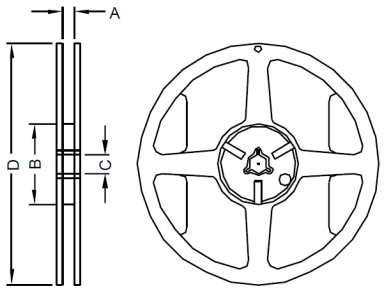


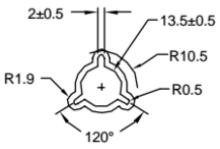

Figure 2: Iron Soldering time
1 times Max

## 9. Packaging Information:

### 9-1 Reel Dimension

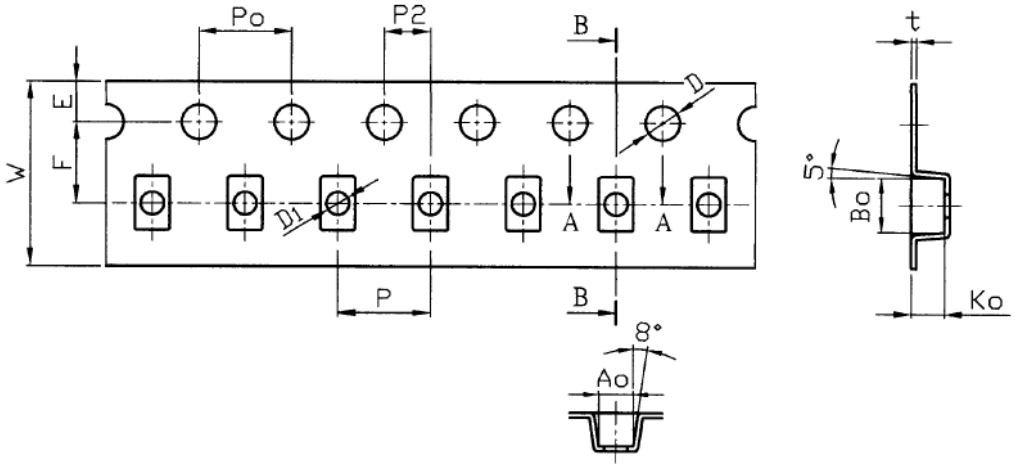



7" x 8mm




| Type | A(mm) | B(mm) | C(mm) | D(mm) |
|---|---|---|---|---|
| 7"x8mm | 9.0±0.5 | 60.0±2.0 | 13.5±0.5 | 178.0±2.0 |

### 9-2 Tape Dimension/ 8mm

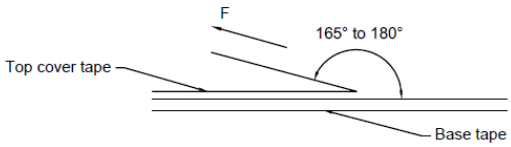



| Series | W(mm) | P(mm) | E(mm) | F(mm) | P2(mm) | D(mm) |
|---|---|---|---|---|---|---|
| | 8.00±0.10 | 4.00±0.10 | 1.75±0.10 | 3.50±0.05 | 2.00±0.05 | 1.50+0.10/-0.00 |
| WB3F | D1(mm) | P0(mm) | A0(mm) | B0(mm) | K0(mm) | t(mm) |
| | 1.00±0.10 | 4.00±0.10 | 1.50±0.10 | 2.35±0.10 | 1.45±0.10 | 0.28±0.05 |

### 9-3 Packaging Quantity

| Chip Size | WB3F |
|---|---|
| Chip/Reel | 2,000 |
| Inner Box | 10,000 |
| Middle Box | 50,000 |
| Carton | 100,000 |

### 9-4 Tearing Off Force




The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

| Room Temp. (℃) | Room Humidity (%) | Room atm (hPa) | Tearing Speed mm/min |
|---|---|---|---|
| 5~35 | 45~85 | 860~1060 | 300 |

## Application Notice:

1. Storage Conditions:

To maintain the solderability of terminal electrodes:

a) Recommended products should be used within 12 months from the time of delivery.

b) The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation:

a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.

b) Vacuum pick up is strongly recommended for individual components.

c) Bulk handling should ensure that abrasion and mechanical shock are minimized.