

# HIGH FREQUENCY BALUN ADAPTER

For 150 Ω Fibre Channel , 100 Ω Gigabit Ethernet and 78 Ω High Speed 1553.  
Ruggedized



- Transforms a balanced differential signal to a 50 Ω, grounded, unbalanced signal for testing differential cable
- Designed for standard test equipment with SMA connectors Wide bandwidth 1.0 MHz – 1.2 GHz
- Operating temperature range from 0° C to 70° C.
- Moisture Sensitivity Level: 1

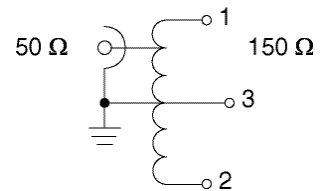
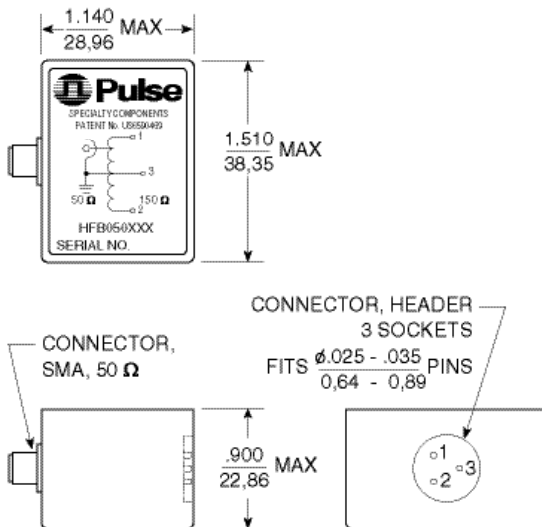
## Electrical Specifications @ 25°C — Operating Temperature from 0° C to +70° C

Part Number*	Impedance (Ω)	Rated (A)	Insertion Loss (dB MAX) 1.0 MHz - 1.2 GHz	Return Loss (dB MIN) 1.0 MHz - 1.2 GHz
	Unbalanced	Balanced		
HFB050150	50	150	-2	15
HFB050100	50	100	-2	15
HFB050078	50	78	-2	15

## Mechanical

## Schematic

HFB050XXX



Weight ..... 40.0 grams MAX  
Pan/Tube Size = 1.

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

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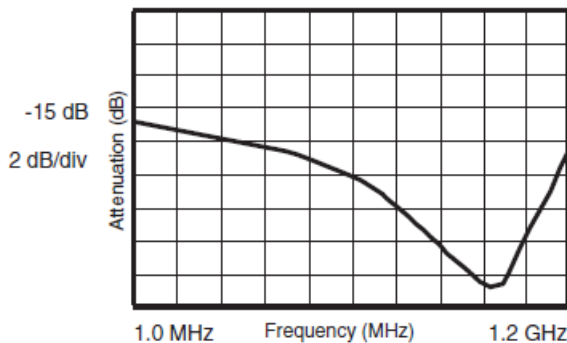


## Application Notes

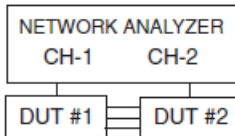
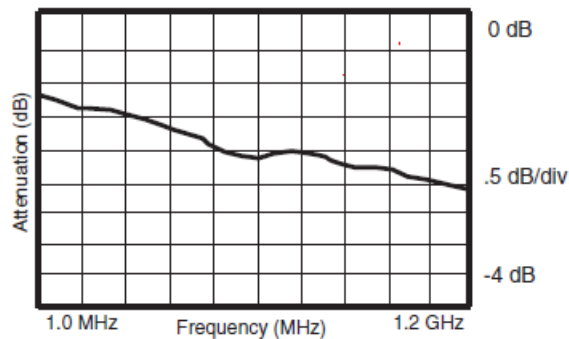
The Specialty Components Division has developed a high frequency BALUN for test and measurement applications. Wide bandwidth and high frequency response makes this device ideal for differential mode measurement in high speed applications such as

Fibre Channel, Gigabit Ethernet and next generation MIL-STD-1553. The BALUN allows design engineers to characterize differential mode devices using single-ended test equipment as shown below.

**Typical Return Loss - S11**  
50 ohm Unbalanced Port

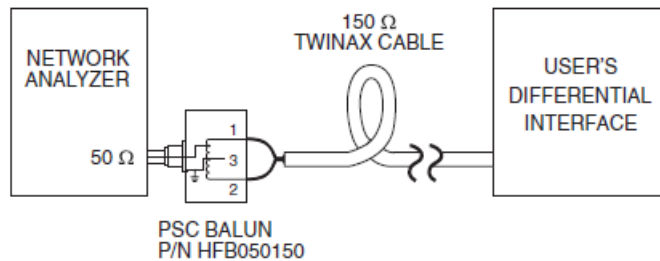


**Typical Insertion Loss - S21**  
Two Baluns Configured Back to Back



Insertion loss S21 is measured with two units connected back to back as shown.

Note 1: Correct value of S21 for each DUT will be 1/2 of the value shown in graph.  
Note 2: Return loss S11 is measured on 50 ohm port with 150 ohms termination on balance port.

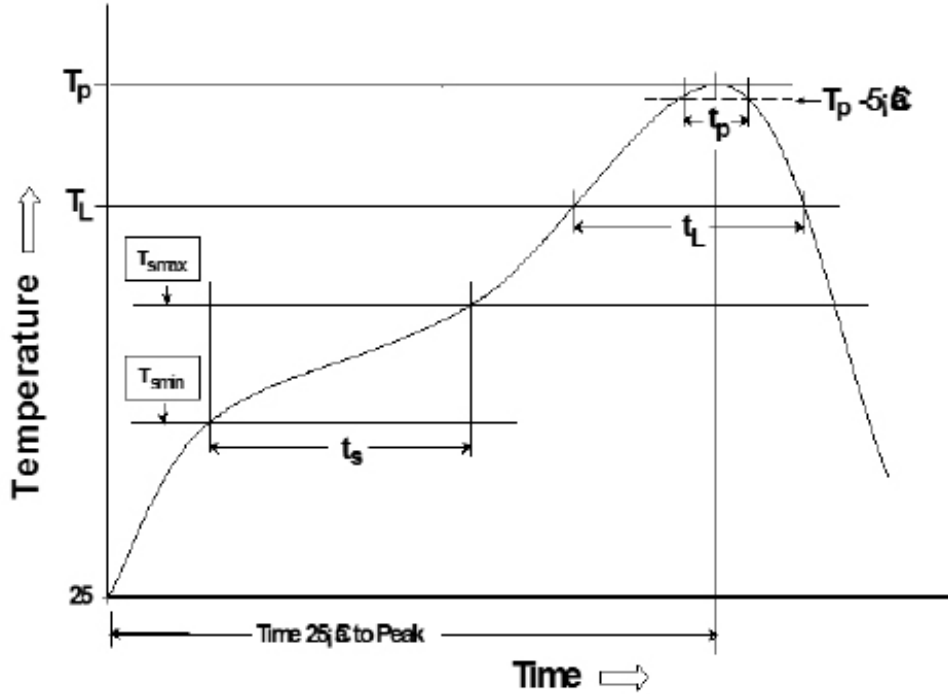


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## Transceiver Tin/Lead Recommended Reflow Profile (Based on J-STD-020D)



$T_{SMIN}$ (°C)	$T_{SMAX}$ (°C)	$T_L$ (°C)	$T_P$ (°C MAX)	$t_s$ (s)	$t_L$ (s)	$t_p$ (s MAX)	Ramp-up rate ( $T_L$ to $T_P$ )	Ramp-down rate ( $T_P$ to $T_L$ )	Time 25°C to peak temperature (s MAX)
100	150	183	225	60-120	60-150	20	3°C/s MAX	6°C/s MAX	360

**Notes:**

1. All temperatures measured on the package leads.
2. Maximum times of reflow cycle: 2.

### For More Information

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