

# Bias Tee

## Technical Product Data



### Features

- Passes GPS, Galileo & GLONASS L1/L2
- Excellent Flatness | L1 - L2 | < 2 dB
- Waterproof / EMI Sealed Option
- Mil Spec 1275B Spike & Surge Protection Option

### Description

The GPS Bias Tee is used to supply a DC voltage to the center conductor of a coaxial cable. The bias tee is used to provide power to antennas, amplifiers and other RF networked devices. It is available with a built in regulated power supply allowing users to use standard AC power or unregulated coarse power supplies to create a set voltage with low very noise and ripple. It can be configured with a variable option to provide voltage over a predetermined a range. It can also be configured with a direct DC connection to the coaxial center conductor allowing users to connect power supplies of their chosing.

The bias tee is available with the options to meet your specific needs. Please call, fax, email ([sales@gpssource.com](mailto:sales@gpssource.com)), or visit our website ([www.gpssource.com](http://www.gpssource.com)) for further information on product options and specifications.

### Electrical Specifications, Operating Temperature -40 to 80°C

Parameter		Conditions	Min	Typ	Max	Units
Freq. Range		Input, 50Ω or Output, 50Ω	1		2	GHz
In/Out Imped.		IN/OUT,		50		Ω
Insertion Loss		IN/OUT	1	1.5	2	dB
Input SWR		50Ω			2.0:1	-
Output SWR		50Ω			2.0:1	-
Group Delay Flatness		T <sub>d,max</sub> - T <sub>d,min</sub> , J1 - Ant			1	ns
AC IN	110	Wall Mount Transformer <sup>(5)</sup>		110		VAC
	220/240	Wall Mount Transformer (Various Intl. plugtypes available <sup>(5)(6)</sup> )		230		VAC
DC IN (Input on Military Connector) <sup>(6)</sup>		Without 1275B With 1275B	6 <sup>(1)</sup>	9 28 <sup>(2)</sup>	35 32	VDC
Current(I <sub>internal</sub> )		Bias current for on board power supply is negligible	NA			mA
Current (I <sub>out</sub> )		Both ports			500 <sup>(3)(4)</sup>	mA
Noise (On DC voltage)		Peak to Peak			<15	mV

**Notes:**

- DC IN for powered option must be 3V greater than desired DC Voltage Out
- By design 1275B spike & surge protection assumes a 28 volt system, 33.3 V or greater will trigger over voltage protection circuitry.
- Maximum DC total current draw out all port[s] of the device is a function of the DC input voltage and the output voltage where the power dissipation must be less than 1 watt @ 25C:

$$(V_{DC\ IN} - V_{DC\ OUT} - 1.2) * (I_{out} + I_{internal}) \leq 1W @ 25C$$

See <http://gpssource.com/faq/AppNotes/voltage-1.pdf> for more information

- Max current for any single port 250ma.
- For powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC), V<sub>DC IN</sub> of 9V is standard.
- Higher DC voltages are available from transformers if required e.g if you needed variable voltage of 12 to 3.3 then a transformer with a 15V DC output would be required.

**Available Power Connectors**

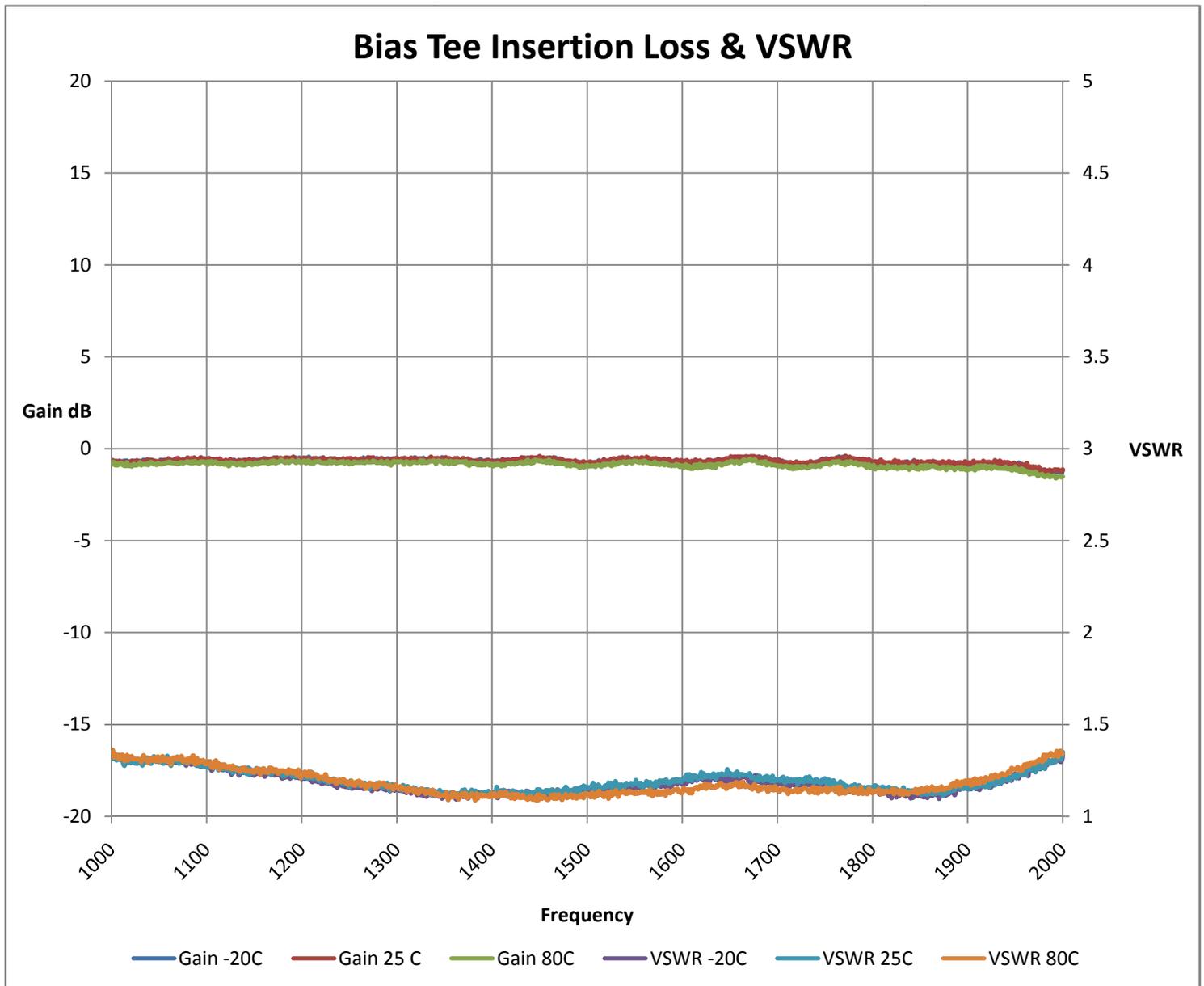
<p>MS3102E10SL-4P</p>			
<p>PM38999 PMS38999 (1275B rated)</p>			
<p>Quick Connects (Power pole 15Amp contacts)</p>			

**1275B Spike and Surge Power Option**

The Mil-Standard 1275 is a specification that defines the conditioning of 28VDC power in military vehicles. Obviously a splitter is not designed to condition the power for a vehicle. The 1275B spike and surge option will protect the internal circuits of our device from the

same spikes and surges called out in the specification but this is not to be confused with a power conditioning circuit that conditions power for a whole vehicle.

**Performance Data:**





**Available Options:**

<b>Power Supply Options:</b>		
<b>Source Voltage Options</b>	<b>Voltage Input</b>	<b>Type</b>
	110 VAC	Wall Mount Transformer
	220 VAC	Wall Mount Transformer
	240 VAC (U.K.)	Wall Mount Transformer
DC 5-28 VDC	Military Style Connector or w/Quick Connects	
<b>Output Voltage Options<sup>(1)</sup></b>	<b>DC Voltage Out</b>	
	3.3	
	5	
	7.5	
	9	
	12	
	Variable (3-12V)	
Custom		
<b>RF Connector Options:</b>		
<b>Connector Options</b>	<b>Connector Type</b>	<b>Limitations</b>
	N (Male & Female)	
	SMA (Male & Female)	
	TNC (Male & Female)	
	SMB (Female)	
	SMC (Female)	
	MCX (Female)	
	BNC (Male & Female)	Performance Not Guaranteed
<b>Housing Options:</b>		
<b>Housings</b>	<b>Housing Type</b>	<b>Limitations</b>
	Standard	None

**Part Number:**

**BT1 - E - P110 / 5 - SF**

Product:

Standard Bias Tee

Housing Option:

**E** – EMI Shielding

**HS** – Hermetically Sealed

**W** – Water Proof

Source Voltage:

**P110** – Transformer,

**P220** – Transformer,

**P240** – Transformer,

**PDC** – DC w/Quick Connects

**PM** – Military Connector (User supplies DC)

**PMS** – Military Connector (User supplies DC  
& 1275B Compliant)

Output Voltage:

**3.3, 5, 7.5, 9, 12, XX, V** – Denotes Output Voltage  
(XX – custom output voltage, V – variable)

Connector Options:

**NM** – N, Male

**NF** – N, Female

**SM** – SMA, Male

**SF** – SMA, Female

**TM** – TNC, Male

**TF** – TNC, Female

**BM** – BNC, Male

**BF** – BNC, Female

**SB** – SMB Jack, Female

**SC** – SMC Jack, Female

**MX** – MCX Jack, Female

For help in creating the part number to meet your exact needs, contact us at [Sales@gpssource.com](mailto:Sales@gpssource.com) or visit our website at [www.gpssource.com](http://www.gpssource.com).

**Mechanical:**

