



- ◆ 6 models
- ◆ High-speed, high-current, and high-voltage models
- ◆ DC bias currents to 1.0 Amps

The AVX-T series of ultra-broadband bias insertion units is designed for use with Avtech sub-nanosecond rise time pulse generators.

These bias tees are ideally suited for applying DC bias to diodes, transistors and other devices. The basic electrical equivalent circuit of the bias tee consists of two elements. A DC-blocking capacitor presents a low impedance to pulses, but a high impedance to DC. A shunt inductor presents a high impedance to narrow pulses, but an extremely low impedance to DC.

In model AVX-T, the blocking capacitor has a maximum voltage rating of 200V and the inductor has a maximum current rating of 0.5A. Pulse widths of 0.2 to 50 ns may be used, with a DC bias of up to 0.5A.

Models AVX-TB and AVX-TB1 are similar, but cover the pulse width range of 0.6 to 500 ns and

feature bias current ratings of 0.25 and 1.0 Amps. Models AVX-TC and AVX-TD are designed for pulse widths in the range of 5 ns to 5.0 us and 40 ns to 100 us, respectively.

Model AVX-TG is intended for use with the AVRZ-5W-B high-voltage pulse generator (see <http://www.avtechpulse.com/medium/avrz-5w>).

To apply a DC bias (also called an offset or level shift) to the output of an Avtech pulse generator (or any laboratory pulse or signal generator), the AVX-T series unit is placed between the generator output and the load of interest and the desired DC offset (either polarity) is applied to the DC terminal.

These models are intended as accessories for Avtech pulse generators, and have not been characterized for CW operation.

Model:	AVX-T	AVX-TB	AVX-TB1	AVX-TC	AVX-TD	AVX-TG
Pulse width range:	0.2 - 50 ns	0.6 - 500 ns	0.6 - 500 ns	5 ns - 5 us	40ns - 100us	15ns - 10us
Rise time:	≤ 60 ps	≤ 150 ps	≤ 150 ps	≤ 1 ns	≤ 5 ns	≤ 5 ns
Maximum pulse amplitude:	200 V	50 V	50 V	50 V	100 V	500 V
Maximum DC voltage <sup>1</sup> :	200 V	50 V	50 V	50 V	100 V	50 V
Maximum DC bias current <sup>2</sup> :	0.5 A	0.25 A	1 A	0.3 A	0.3 A	0.2 A
Maximum pulse PRF:	1 GHz	500 MHz	500 MHz	20 MHz	1 MHz	10 kHz
Maximum pulse duty cycle:	1%					0.1%
Characteristic impedance:	50 Ω					
Insertion loss:	≤ 1 dB					
Maximum output power:	10 Watts average					
RF connectors:	SMA female <sup>3</sup>				BNC female	
Bias connectors:	solder terminal					
Dimensions mm:	38 × 28 × 23		36 × 28 × 58		43×66×109	43×76×152
(H×W×D) inches:	1.5 × 1.1 × 0.9		1.4 × 1.1 × 2.3		1.7×2.6×4.3	1.7×3.0×6.0
Chassis material:	Cast aluminum, blue enamel					

1) This is the breakdown voltage of the capacitors. When operating into purely resistive 50 Ohm loads, the DC bias current maximum specification will limit the maximum DC voltage to a lower level.

2) This is the current rating of the inductor.

3) Add the -APDT3 option to include two SMA-male to BNC-female adapters (Amphenol 242102 or similar).