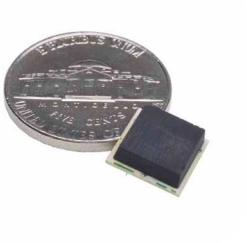
Model SM101

Surface Mount Bias Tee

- **7 kHz to 15 GHz**
- **21 ps Risetime**
- **16V, 500 mA**



The Model SM101 is an ultra-broadband surface-mount bias tee with DC-blocking capacitor designed for use in 10 Gb/s systems. It passes very fast risetime pulses with a minimum of waveform distortion. The risetime is only 21 ps and the -3 dB bandwidth extends over many decades from 7 kHz to 15 GHz. The small size and low cost enable system designers to achieve their increasingly stringent package size and cost goals. As a leadless, solder-mount, electrical component, it can be connected to microstrip lines on a circuit board. This component is ideal for automated assembly. This Bias Tee is intended for use with a Hi-Z, constant current, DC source (Cs < 20 pF). If used with a low-impedance, constant voltage DC source, then the -3 dB low frequency is 1.35 MHz. In this case, external inductors may be used to extend the frequency. A product guide, PG-3042, with additional information is available at the time of order.

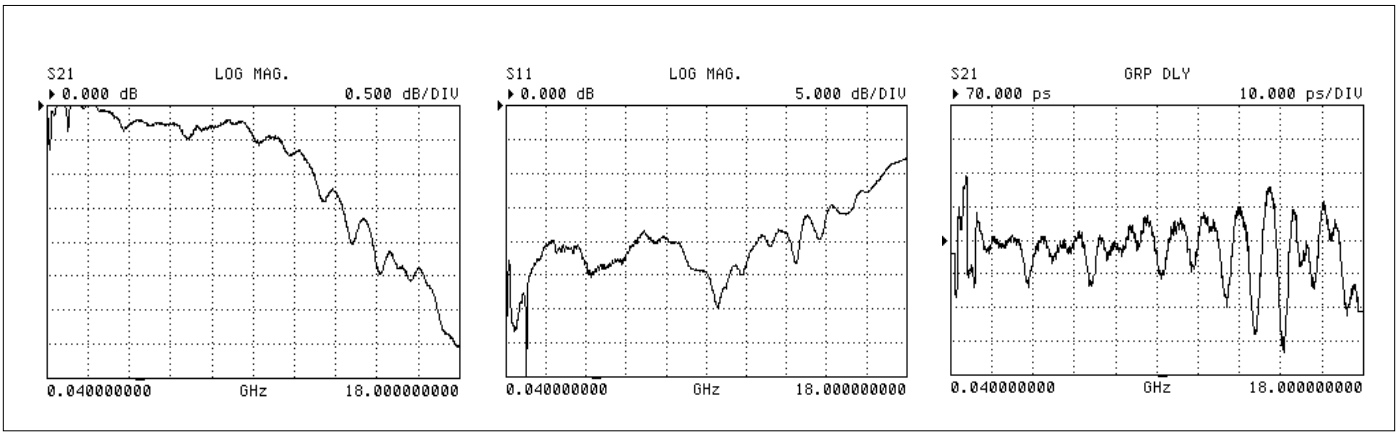
Bandwidth (-3 dB)	15 GHz typical > 12 GHz guaranteed	**Capacitance**	0.22 µF, -50%, +80%
Low Frequency (-3 dB)	7 kHz (Hi-Z source) 1.35 MHz (Lo-Z source)	**Inductance**	2.9 µH ± 25%
Risetime (10% - 90%)	21 ps	**DC Voltage**	16 V max.
Insertion Loss	0.2 dB mid-band	**DC Resistance**	1.4 Ω
Guaranteed limits	< 1 dB 10 MHz to 4 GHz to < 3 dB at 12 GHz	**DC Current**	500 mA max.
Impedance	50 Ω	**Size**	See drawing
RF Power	2 W average max. f > 750 MHz 1 W average max. f < 750 MHz	**Warranty**	One year. See Terms and Conditions of Sale for details.
Mounting	Surface-Mount. Solder pads on bottom of part.	**Temperature Range** Operating Storage	 -25 C to +85 C case temp -40 C to +85 C

Ordering Information

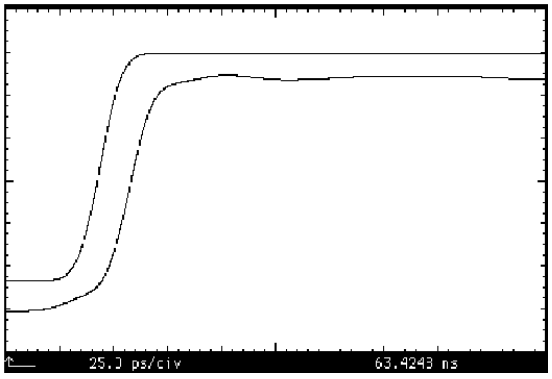
Model Number	Description
SM101-801	Surface Mount Hi-Z Bias Tee: 7 kHz to 15 GHz, 500 mA DC current, 16 V DC max.
SM101-802	SM101 on tape and reel; 24mm-wide tape, 16mm pitch, leaders on full reels of 750 parts
SM101-803	SM101 mounted on evaluation board

Microwave Frequency Response

Linear Sweep from 40 MHz to 18 GHz (1.8 GHz/div).
AC port is input (port 1). AC+DC port is output (port 2).

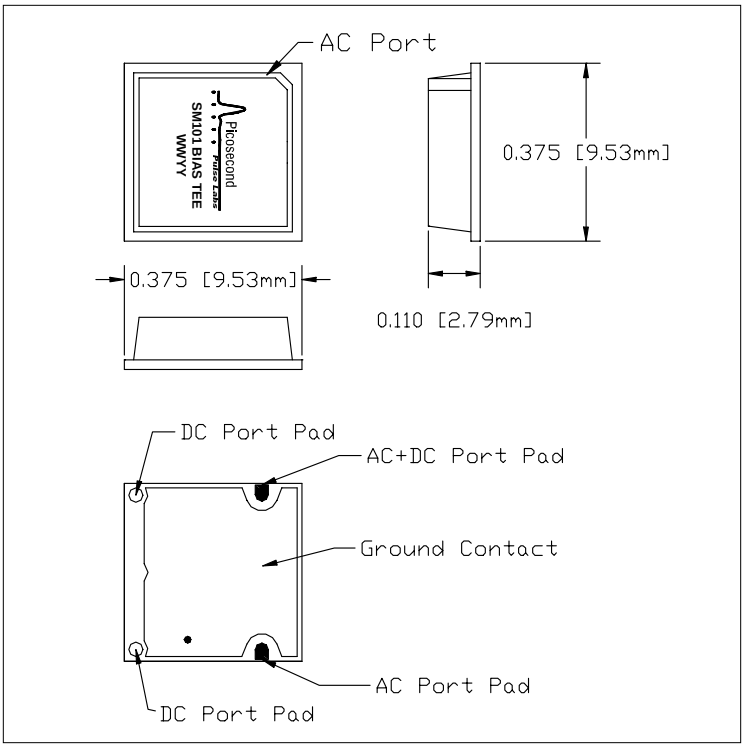


Step Response, 25 ps/div



Upper trace is 20 ps risetime input,
lower trace is output

SM101 Mechanical Drawing



Dimensions given are in inches [mm]