

# BT-0010SMG-2

## Miniature Surface Mount Bias Tee

### DEVICE OVERVIEW

#### General Description

The BT-0010SMG is a packaged bias tee featuring excellent insertion loss and superior isolations over a broad 20 MHz to 10 GHz bandwidth. Tight fabrication tolerances allow for low unit to unit variation enabling accurate simulations using the provided s3p file taken from measured production units. The bias tee is available in a compact package and is suitable for applications such as amplifier biasing, diode biasing and DC level shifting.



[Download s-parameters here](#)

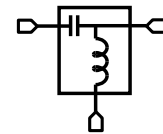
#### Features

- Frequency Range 20 MHz to 10 GHz
- Watt RF Power Handling
- Miniature Surface Mount Package
- Reflow Solderable

#### Applications

- Test and Measurement Equipment

#### Functional Block Diagram



#### Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
BT-0010SMG-2	Miniature Surface Mount Bias Tee	SMG	RoHS REACH	Released	EAR99
<u>BT-0010SMG-1</u>	Miniature Surface Mount Bias Tee	SMG	RoHS REACH	Released	EAR99

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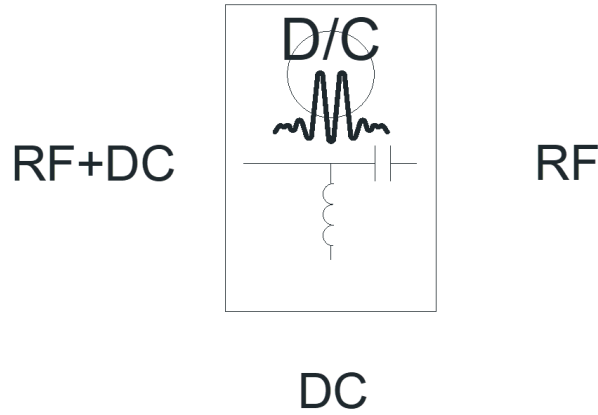
- **Device Overview**
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**Revision History**

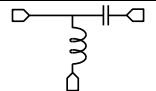
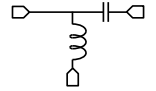
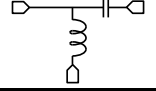
Revision Code	Revision Date	Comment
B	2020-10-01	Bias Current plots added

**Port Configuration and Functions**

**Port Diagram**



**Port Functions**

Port	Function	Description	DC Equivalent Circuit
Common	RF+DC	This port is DC blocked to the RF port and DC connected to the DC port through an internal RF choke.	
DC	DC	This port is internally connected to an RF choke which is DC connected to the RF+DC port and DC blocked to the RF port.	
RF	RF	This port is internally DC blocked to the RF+DC and DC ports.	

**Specifications**

**Absolute Maximum Ratings**

Parameter	Maximum Rating	Unit
DC Current	0.5	A
DC Voltage	30	V
Maximum Storage Temperature	125	°C
Minimum Storage Temperature	-65	°C
RF Power Handling	1	W
Minimum Operating Temperature	-55	°C
Maximum Operating Temperature	100	°C

**Package Information**

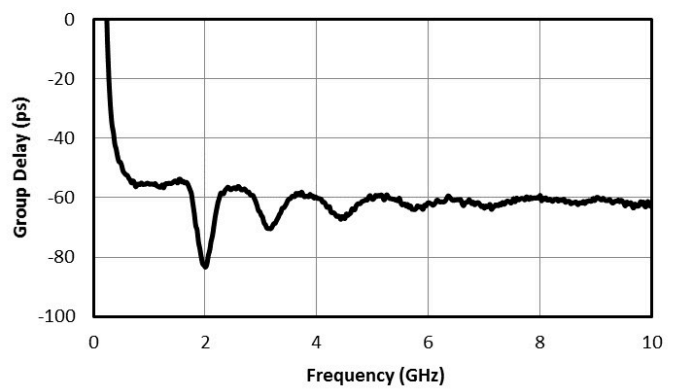
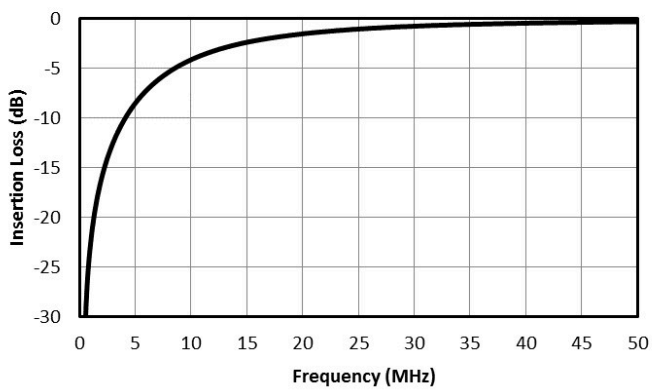
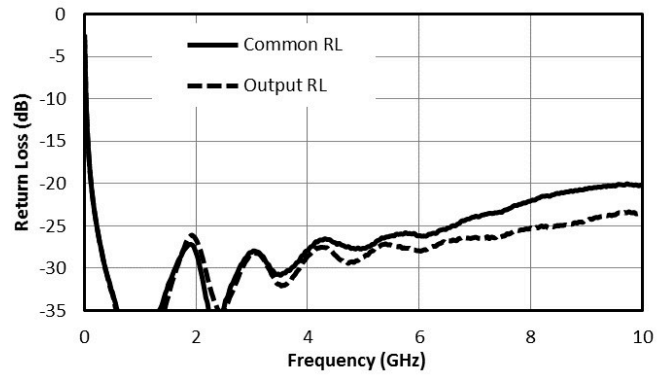
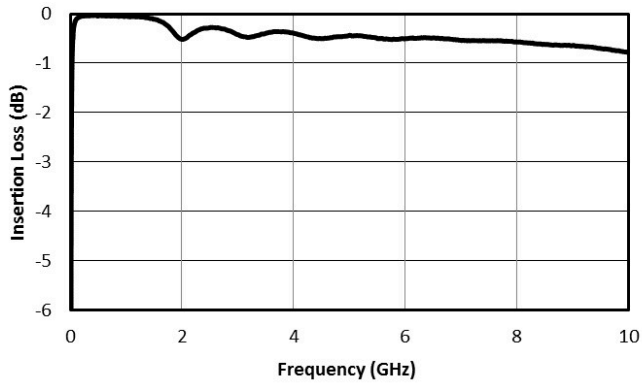
Parameter	Details	Rating
Dimensions	-	3.81 x 5.59 mm
Moisture Sensitivity Level	-	MSL 1

**Electrical Specifications**

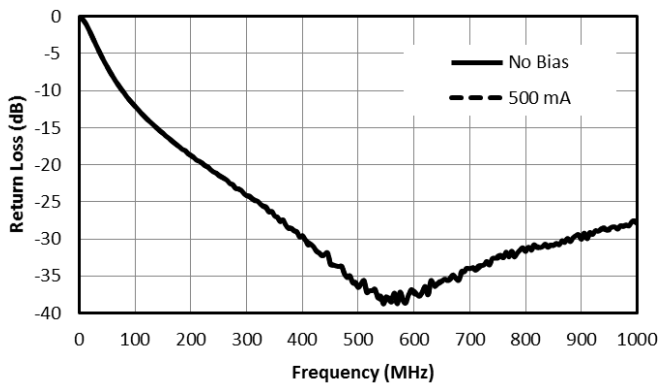
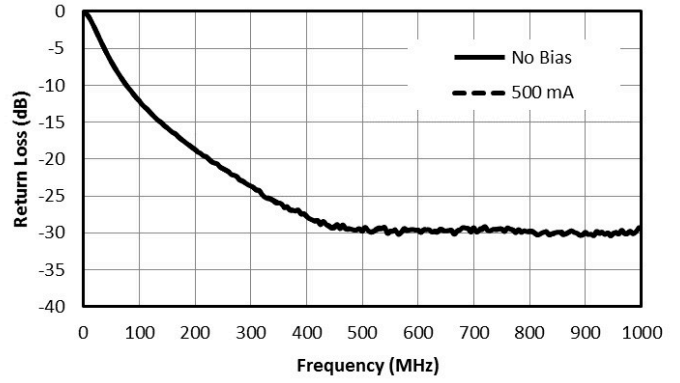
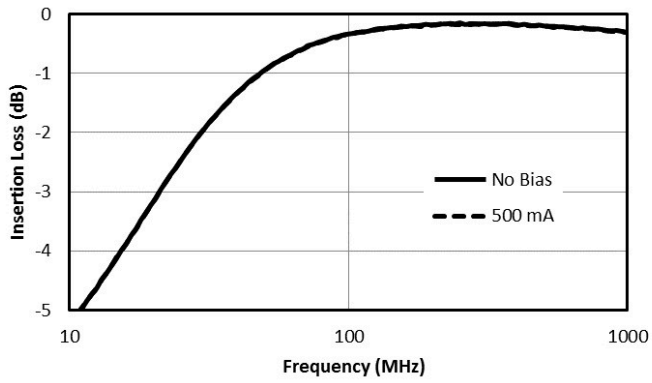
Specifications guaranteed at +25C, measured in a 50-Ohm system

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Capacitance	-	0.02	10	-	1	-	μF
DC Port Isolation	-	0.02	10	-	40	-	dB
DC Resistance	-	0.02	10	-	1	-	Ω
Inductance	-	0.02	10	-	320	-	nH
Insertion Loss	-	7	10	-	1	2	dB
Insertion Loss	-	0.1	3	-	0.5	0.8	dB
Insertion Loss	-	0.03	0.1	-	1	2.5	dB
Insertion Loss	-	0.02	0.03	-	2.5	-	dB
Insertion Loss	-	3	7	-	0.8	1	dB

Typical Performance Plots



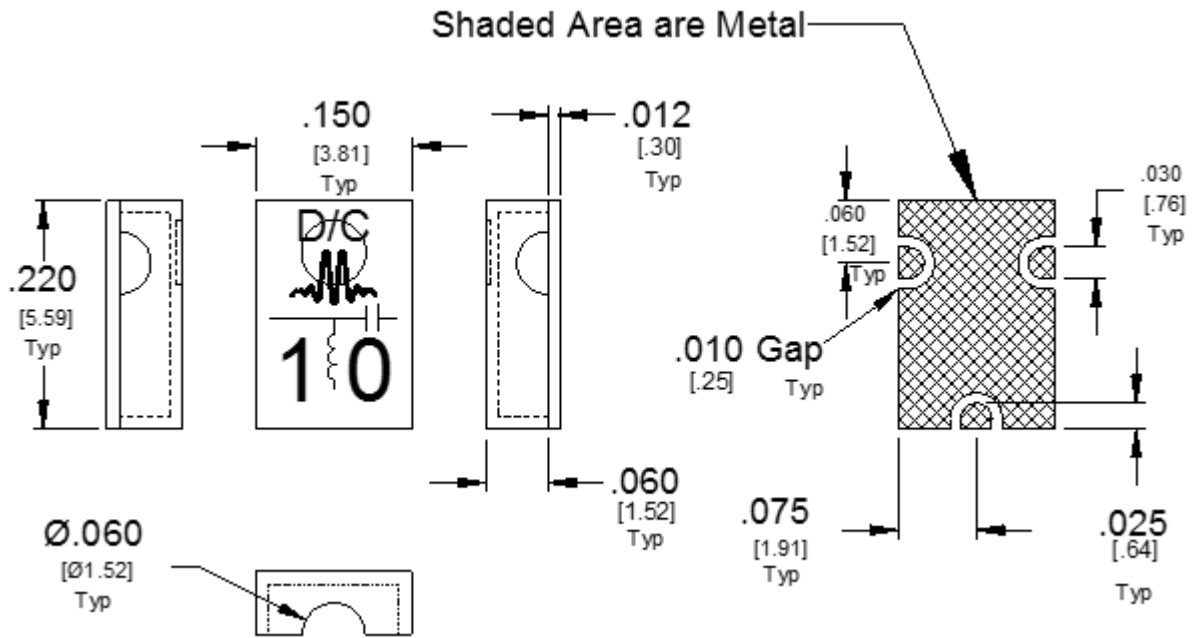
**Typical Performance vs Bias Current at Low frequencies**



**Mechanical Data**

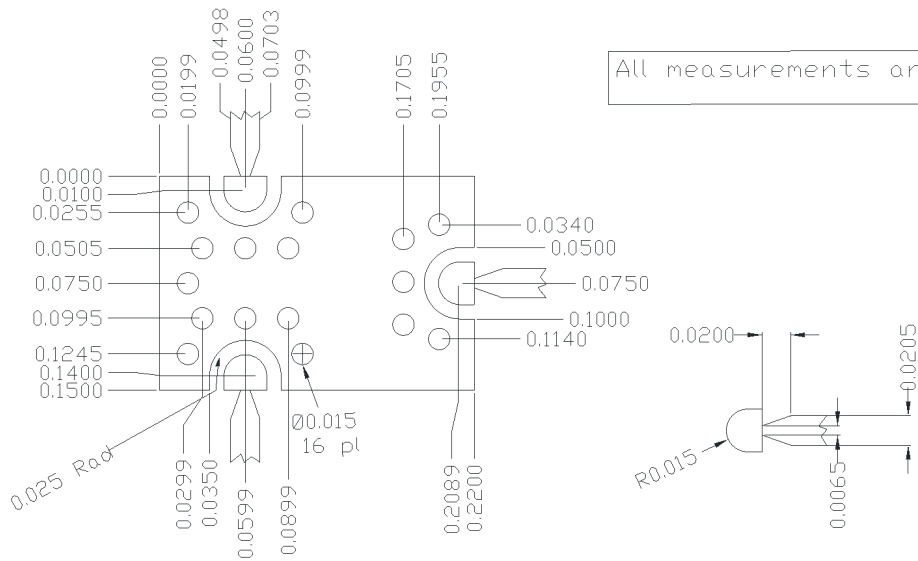
**Outline Drawing**

Download : [Outline 2D Drawing](#) | [Outline 3D Drawing](#) | [Outline 3D STP](#)



**Footprint Image**

Download : [Footprint Drawing](#)



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