

## BT-0024SMG-1

### Miniature Surface-Mount 0.0005 - 24 GHz Bias-Tee

## DEVICE OVERVIEW

### General Description

The BT-0024SMG is a packaged bias tee featuring excellent insertion loss and superior isolations over a broad 500 kHz to 24 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.



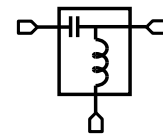
### Features

- Frequency Range: 500 kHz to 24 GHz
- Frequency Range with External Coil: 5 kHz to 24 GHz
- DC Current 500 mA
- Miniature Surface Mount Package
- Lead Free Assembly
- Reflow Solderable

### Applications

- Test and Measurement Equipment

### Functional Block Diagram



### Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
BT-0024SMG-1	Miniature Surface-Mount 0.0005 - 24 GHz Bias-Tee	SMG	RoHS REACH	Obsolete	EAR99
<u>BT-0024SMG-2</u>	Miniature Surface-Mount 0.0005 - 24 GHz Bias-Tee	SMG	RoHS REACH	Obsolete	EAR99

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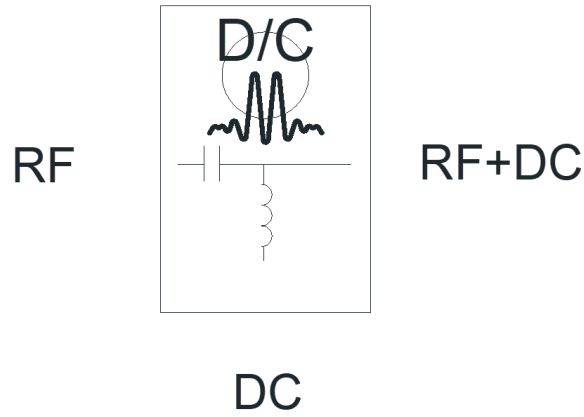
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## Revision History

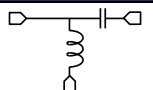
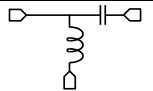
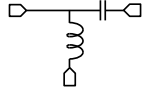
Revision Code	Revision Date	Comment
D	2020-10-01	Bias Current plots added
E	2021-10-01	EOL

**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.	

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### 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

#### Package Information

Parameter	Details	Rating
Dimensions	-	3.81 x 6.10 mm
Moisture Sensitivity Level	-	MSL 3

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### Electrical Specifications

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

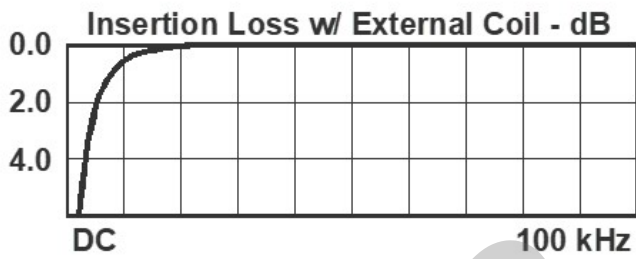
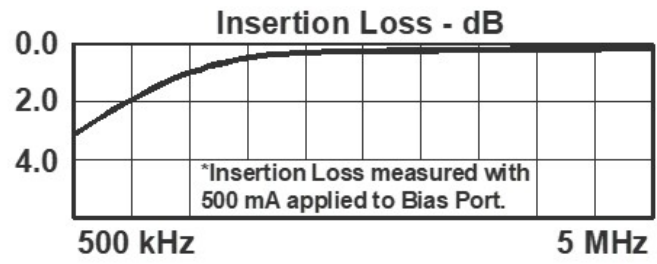
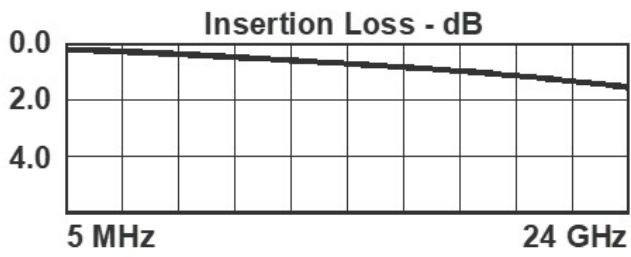
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
DC Port Isolation	-	0.0005	24	-	40	-	dB
DC Resistance	-	0.0005	24	-	1.5	-	$\Omega$
Insertion Loss	-	0.005	24	-	1	2	dB
Insertion Loss	-	0.0005	0.005	-	1	6	dB

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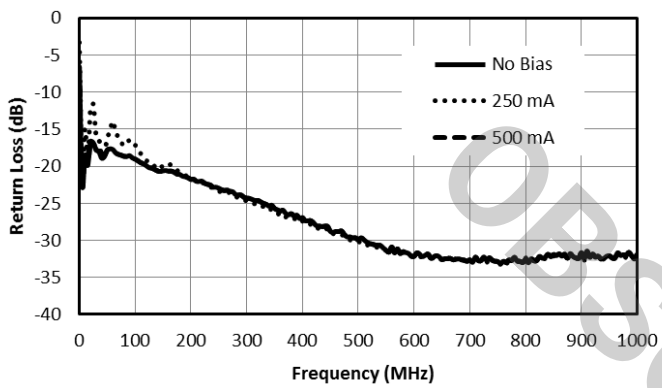
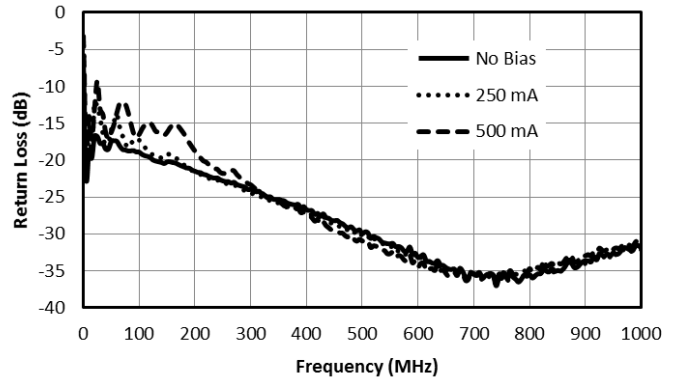
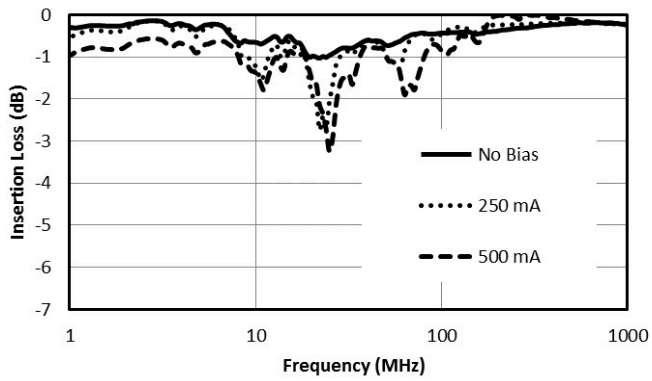
Miniature Surface-Mount 0.0005 - 24 GHz Bias-Tee

### Typical Performance Plots



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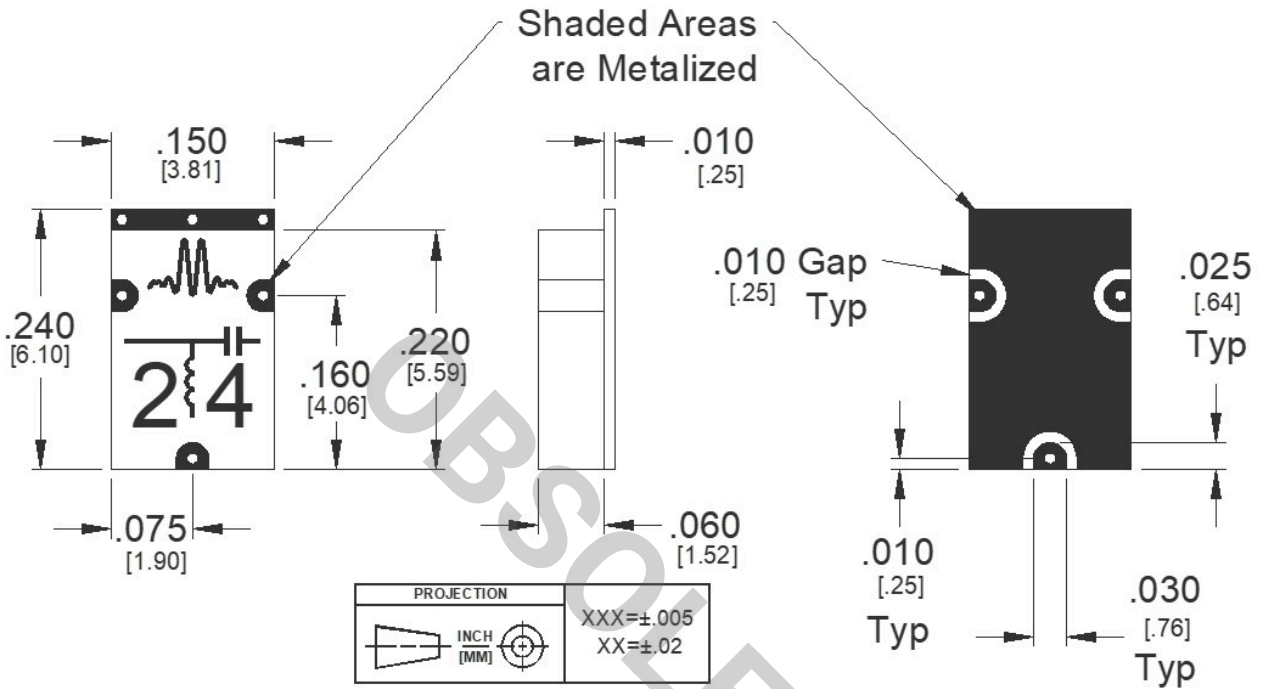
#### Typical Performance vs Bias Current at Low frequencies



**Mechanical Data**

**Outline Drawing**

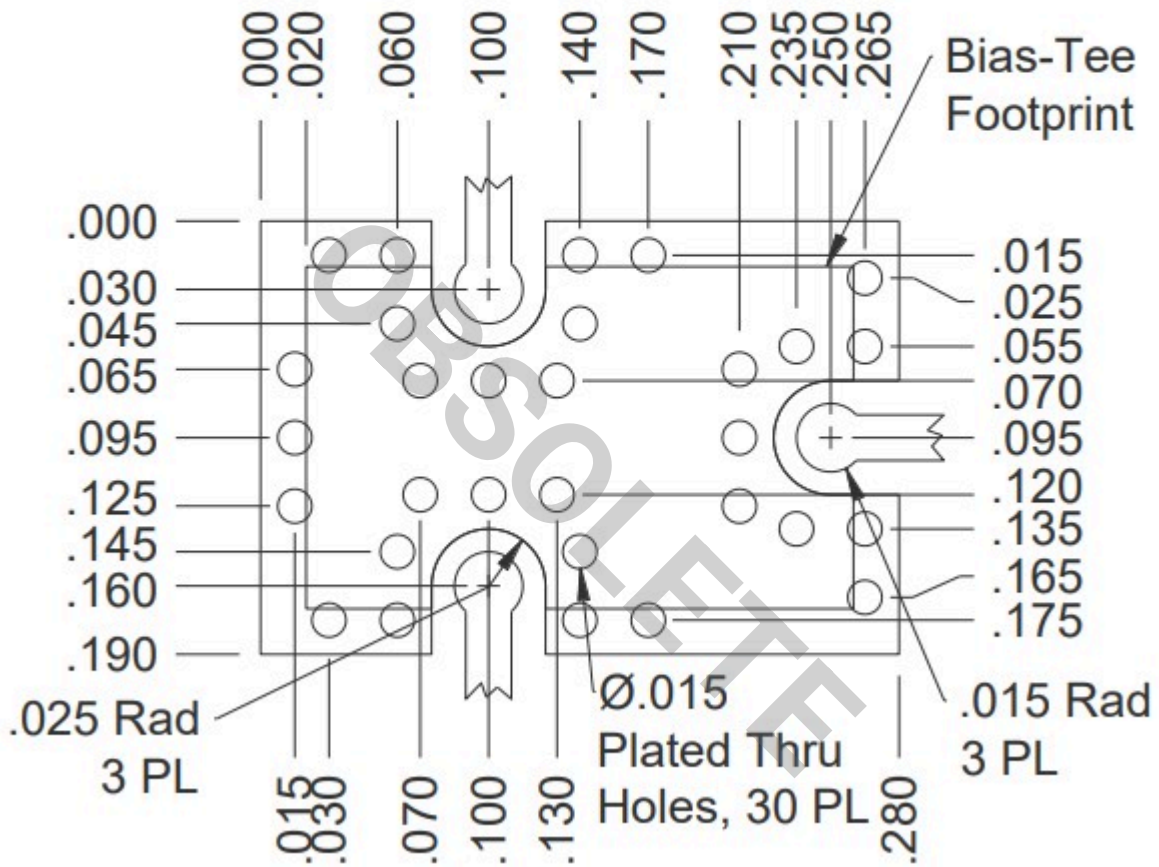
Download : [Outline 3D Drawing](#) | [Outline 3D STP](#)



**Footprint Image**

Download : [Footprint Drawing](#)

**BTSM/PDSM Surface-Mount System Circuit Footprint**



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