

BT-0014SMG-1

Miniature Surface-Mount 0.0005 - 14 GHz Bias-Tee

DEVICE OVERVIEW

General Description

The BT-0014SMG is a packaged bias tee featuring excellent insertion loss and superior isolations over a broad 500 kHz to 14 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.



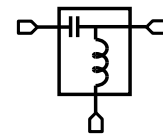
Features

- Frequency Range: 500 kHz to 14 GHz
- Frequency Range with External Coil: 5 kHz to 14 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-0014SMG-2	Miniature Surface-Mount 0.0005 - 14 GHz Bias-Tee	SMG	RoHS REACH	Obsolete	EAR99
BT-0014SMG-1	Miniature Surface-Mount 0.0005 - 14 GHz Bias-Tee	SMG	REACH RoHS	Obsolete	EAR99

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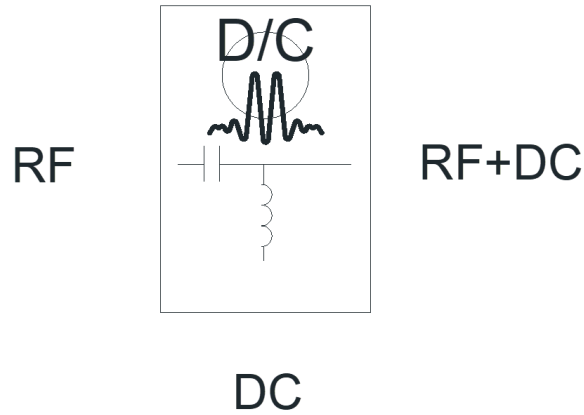
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Revision History

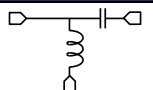
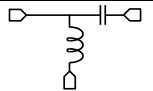
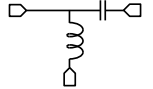
Revision Code	Revision Date	Comment
D	2020-10-01	Bias Current plots added
E	2021-10-01	EOL

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.	

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

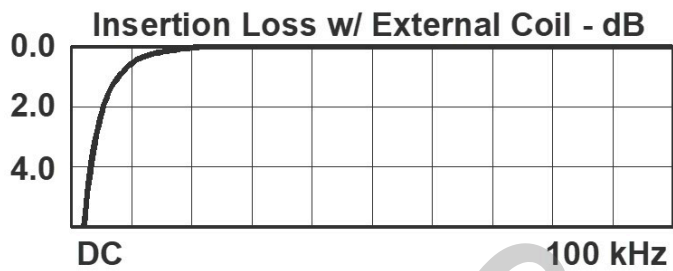
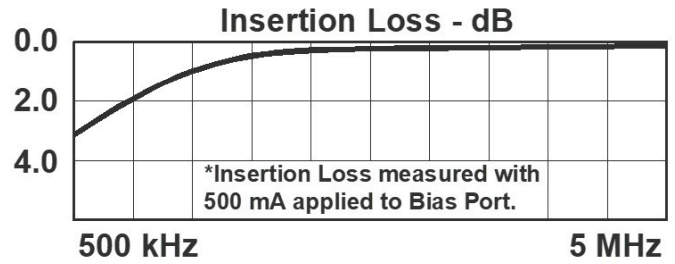
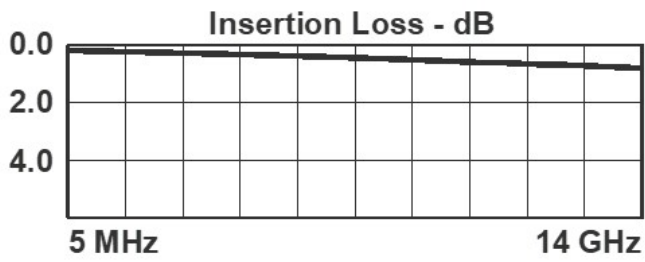
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
DC Port Isolation	-	0.0005	14	-	40	-	dB
DC Resistance	-	0.0005	14	-	1.5	-	Ω
Insertion Loss	-	0.0005	0.005	-	1	6	dB
Insertion Loss	-	0.005	14	-	0.5	1.5	dB

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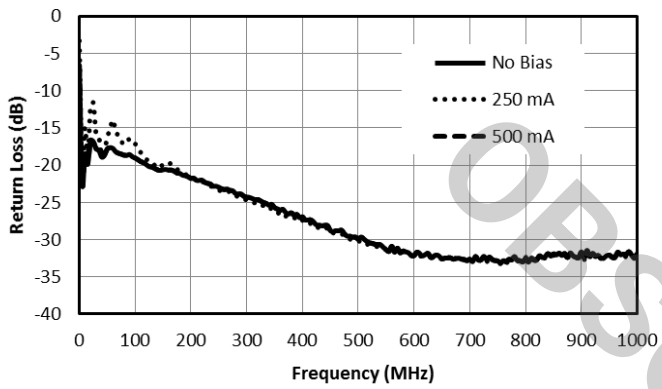
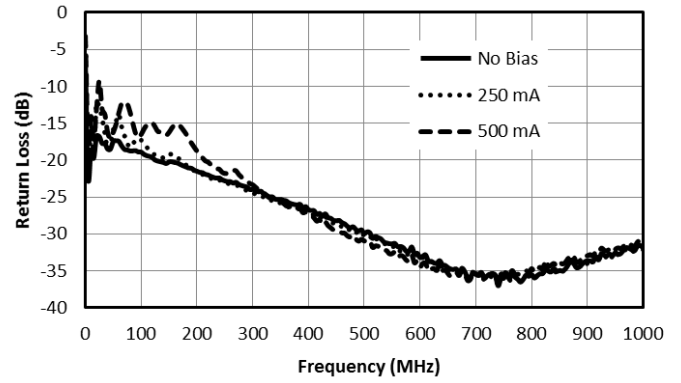
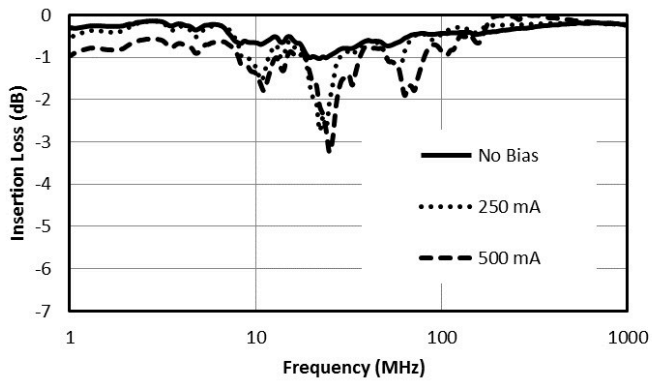
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Typical Performance Plots



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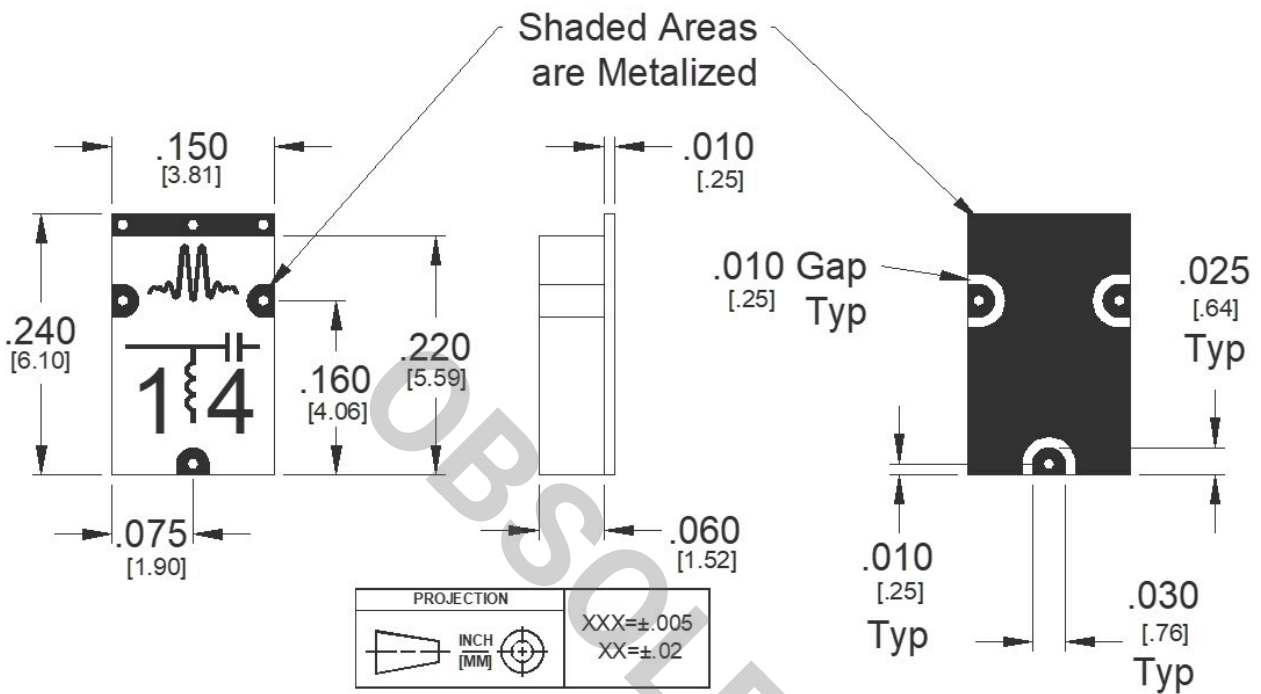
Typical Performance vs Bias Current at Low frequencies



Mechanical Data

Outline Drawing

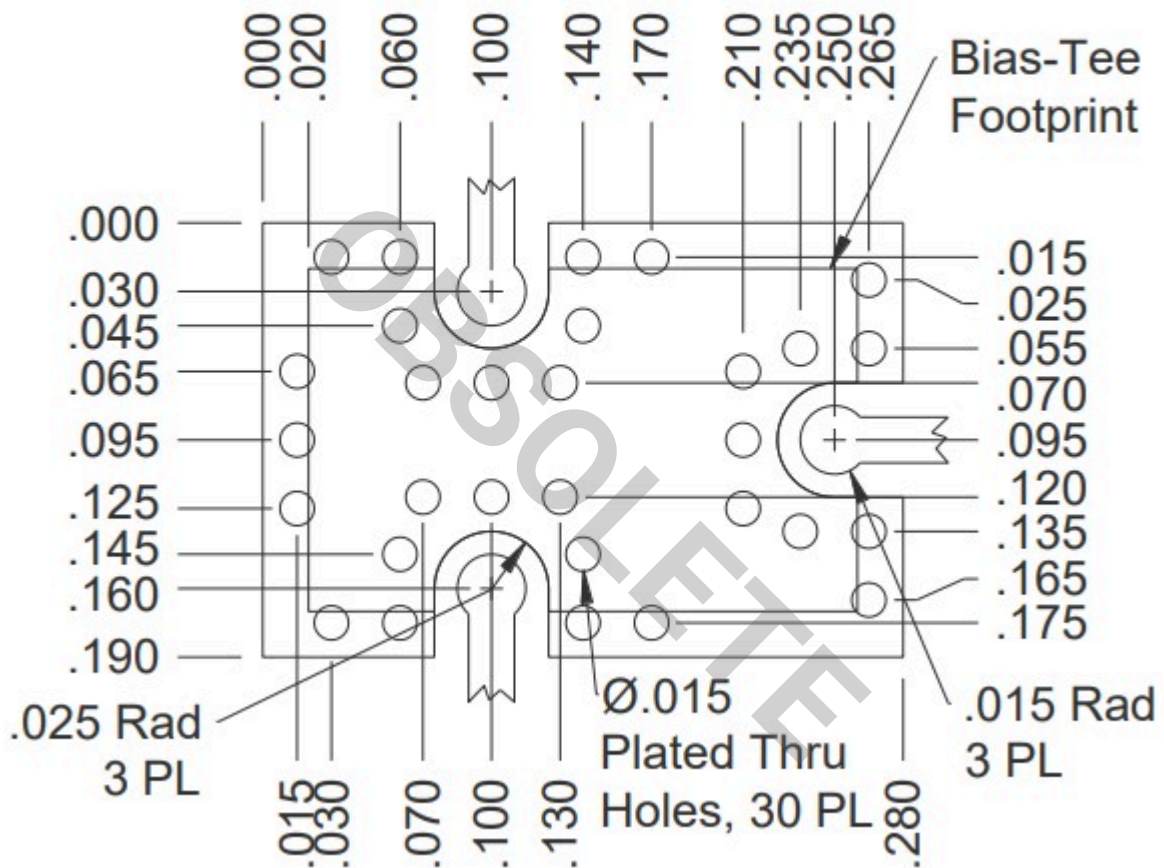
Download : [Outline 3D Drawing](#) | [Outline 3D STP](#)



Footprint Image

Download : [Footprint Drawing](#)

BTSM/PDSM Surface-Mount System Circuit Footprint



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