

# Coaxial Bias-Tee

50Ω Wideband 2.5 to 6000 MHz

## ZNBT-60-1W+



CASE STYLE: K558

Connectors	Model
N-TYPE/BNC	ZNBT-60-1W+

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Maximum Ratings

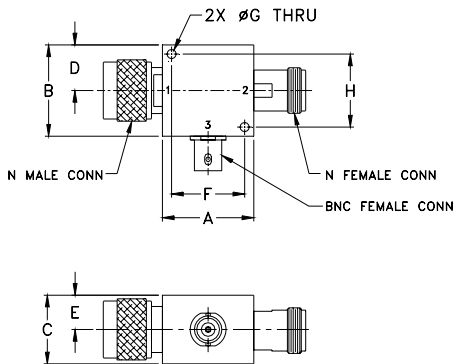
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Input Current	500mA
RF Power	30 dBm
Voltage at DC Port	30V

Permanent damage may occur if any of these limits are exceeded.

### Coaxial Connections

RF	1 (N-Type male)
RF&DC	2 (N-Type female)
DC	3 (BNC female)

### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	wt
1.25	1.25	.94	.63	.47	1.00	.125	1.000	grams
31.75	31.75	23.88	16.00	11.94	25.40	3.18	25.40	117.0

### Features

- wideband coverage, 2.5 to 6000 MHz
- low insertion loss, 0.6 dB typ.
- high power, 1W & current, 0.5A

### Applications

- biasing amplifiers
- biasing of laser diodes
- biasing of active antennas
- test accessory

### Bias Tee Electrical Specifications

MODEL NO.	FREQ. (MHz)		INSERTION LOSS* (dB)						ISOLATION*(dB) (RF port to DC port) (RF&DC port to DC port)						VSWR** (:1)					
			L		M		U		L		M		U		L		M		U	
			f <sub>l</sub>	f <sub>h</sub>	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.
ZNBT60-1W+	2.5	6000	0.2	0.9	0.6	2.0	1.6	2.2	75	45	45	25	35	20	1.1	1.5	1.1	1.3	1.35	1.6

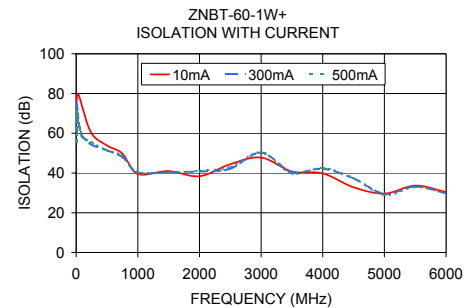
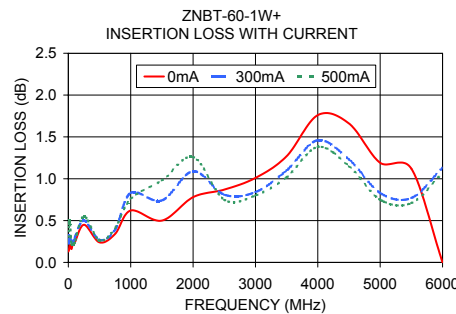
L= 2.5 - 25 MHz M= 25 - 3000 MHz U= 3000 - 6000 MHz

\* Insertion Loss and Isolation are guaranteed up to 20 dBm-RF power and 200mA DC current.

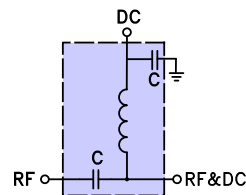
\*\* VSWR measured with open and short at DC port.

### Typical Performance Data

Freq. (MHz)	Pin (dBm)	INSERTION LOSS (dB) with current							ISOLATION (dB) (Pin=-10dBm) with current						
		0mA	100mA	200mA	300mA	400mA	500mA	10mA	100mA	200mA	300mA	400mA	500mA		
2.50	30.00	0.13	0.23	0.21	0.22	0.31	0.30	68.50	62.97	60.56	58.97	57.44	55.90		
10.00	29.97	0.15	0.20	0.24	0.32	0.30	0.42	77.66	79.59	76.96	74.04	72.52	71.45		
25.00	29.86	0.21	0.21	0.22	0.29	0.29	0.49	80.02	70.90	70.60	69.99	68.07	66.79		
50.00	30.01	0.16	0.21	0.28	0.25	0.23	0.22	78.47	64.54	64.38	63.82	63.20	62.99		
75.00	30.09	0.23	0.25	0.21	0.24	0.29	0.21	76.00	61.41	61.08	60.63	60.45	60.05		
100.00	30.16	0.23	0.29	0.30	0.29	0.30	0.23	73.21	59.27	58.85	58.49	58.33	57.99		
250.00	29.95	0.45	0.48	0.46	0.50	0.42	0.55	59.95	53.49	53.94	54.27	54.90	55.48		
500.00	29.97	0.24	0.28	0.25	0.27	0.28	0.26	53.84	51.56	51.59	51.49	51.45	51.37		
750.00	30.00	0.34	0.43	0.39	0.39	0.37	0.41	49.76	48.15	48.03	47.97	47.87	48.75		
1000.00	30.12	0.62	0.67	0.77	0.83	0.82	0.76	39.51	40.38	40.33	40.30	40.34	40.39		
1500.00	30.11	0.50	0.53	0.73	0.74	0.82	0.98	40.98	40.70	40.59	40.52	40.38	40.28		
2000.00	30.07	0.78	0.81	1.07	1.09	1.15	1.26	38.39	40.41	40.59	40.79	41.03	41.19		
2500.00	30.33	0.87	0.73	0.76	0.81	0.78	0.75	44.44	43.39	43.34	42.18	43.14	43.02		
3000.00	30.23	1.01	0.81	0.83	0.84	0.81	0.80	47.79	50.29	50.00	50.25	50.35	50.41		
3500.00	29.94	1.27	1.07	1.09	1.10	1.06	1.02	40.78	40.57	40.01	40.48	39.65	39.75		
4000.00	29.62	1.76	1.54	1.51	1.46	1.41	1.38	39.82	41.94	42.51	42.21	42.62	42.60		
4500.00	30.06	1.66	1.29	1.28	1.23	1.18	1.15	32.83	36.48	36.51	37.26	37.33	37.50		
5000.00	30.07	1.19	0.92	0.87	0.83	0.79	0.75	29.66	29.37	29.59	29.56	29.33	28.96		
5500.00	29.53	1.12	0.82	0.79	0.77	0.72	0.71	33.67	33.30	33.28	33.22	33.02	32.93		
6000.00	30.02	1.54	1.17	1.13	1.13	1.10	1.07	30.44	29.81	29.89	29.76	29.58	29.95		



### Electrical Schematic



### Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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ZNBT-60-1W+  
ED-6605/1  
RS/CP/AM  
151007

# Bias Tee, Coaxial

# ZNBT-60-1W+

## Typical Performance Data

FREQ. (MHz)	INSERTION LOSS with current (RF Port to RF&DC Port) (dB)						ISOLATION with current (RF Port to DC Port, RF&DC Port to DC Port) (dB)					
	0mA	100mA	200mA	300mA	400mA	500mA	0mA	100mA	200mA	300mA	400mA	500mA
	2.50	0.13	0.23	0.21	0.22	0.31	0.30	68.50	62.97	60.56	58.97	57.44
10.00	0.15	0.20	0.24	0.32	0.30	0.42	77.66	79.59	76.96	74.04	72.52	71.45
25.00	0.21	0.21	0.22	0.29	0.29	0.49	80.02	70.90	70.60	69.99	68.07	66.79
50.00	0.16	0.21	0.28	0.25	0.23	0.22	78.47	64.54	64.38	63.82	63.20	62.99
75.00	0.23	0.25	0.21	0.24	0.29	0.21	76.00	61.41	61.08	60.63	60.45	60.05
100.00	0.23	0.29	0.30	0.29	0.30	0.23	73.21	59.27	58.85	58.49	58.33	57.99
250.00	0.45	0.48	0.46	0.50	0.42	0.55	59.95	53.49	53.94	54.27	54.90	55.48
500.00	0.24	0.28	0.25	0.27	0.28	0.26	53.84	51.56	51.59	51.49	51.45	51.37
750.00	0.34	0.43	0.39	0.39	0.37	0.41	49.76	48.15	48.03	47.97	47.87	48.75
1000.00	0.62	0.67	0.77	0.83	0.82	0.76	39.51	40.38	40.33	40.30	40.34	40.39
1500.00	0.50	0.53	0.73	0.74	0.82	0.98	40.98	40.70	40.59	40.52	40.38	40.28
2000.00	0.78	0.81	1.07	1.09	1.15	1.26	38.39	40.41	40.59	40.79	41.03	41.19
2500.00	0.87	0.73	0.76	0.81	0.78	0.75	44.44	43.39	43.34	42.18	43.14	43.02
3000.00	1.01	0.81	0.83	0.84	0.81	0.80	47.79	50.29	50.00	50.25	50.35	50.41
3500.00	1.27	1.07	1.09	1.10	1.06	1.02	40.78	40.57	40.01	40.48	39.65	39.75
4000.00	1.76	1.54	1.51	1.46	1.41	1.38	39.82	41.94	42.51	42.21	42.62	42.60
4500.00	1.66	1.29	1.28	1.23	1.18	1.15	32.83	36.48	36.51	37.26	37.33	37.50
5000.00	1.19	0.92	0.87	0.83	0.79	0.75	29.66	29.37	29.59	29.56	29.33	28.96
5500.00	1.12	0.82	0.79	0.77	0.72	0.71	33.67	33.30	33.28	33.22	33.02	32.93
6000.00	1.54	1.17	1.13	1.13	1.10	1.07	30.44	29.81	29.89	29.76	29.58	29.95

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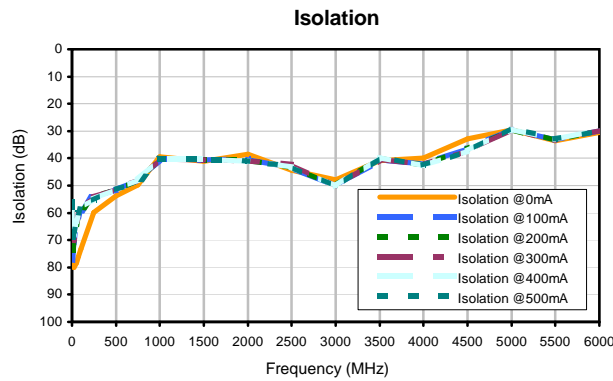
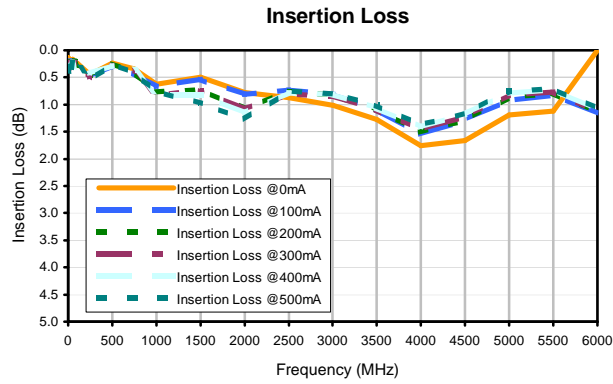
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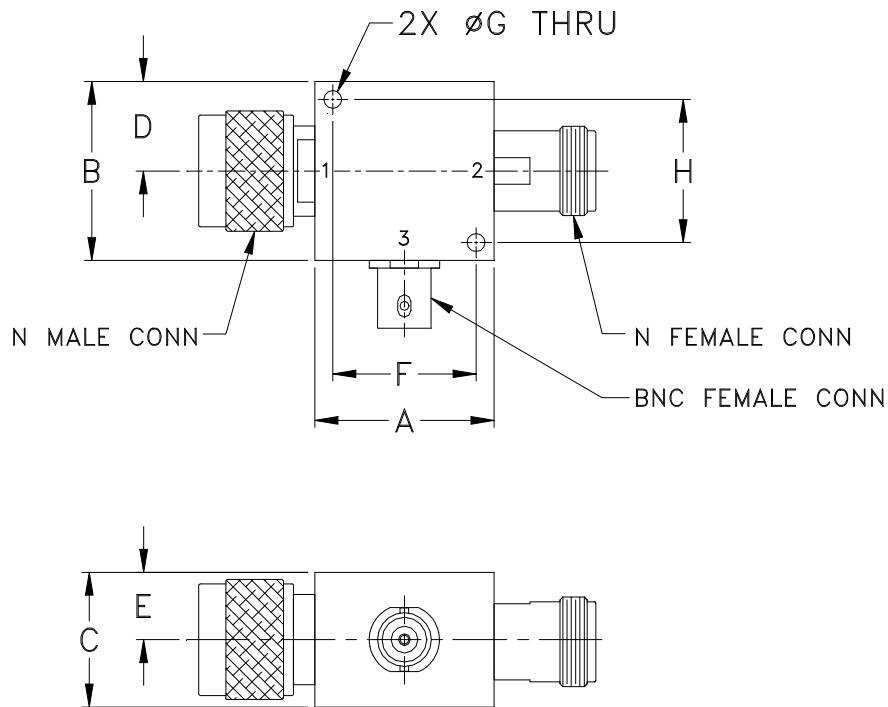
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## Typical Performance Curves



### Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
K558	1.25 (31.75)	1.25 (31.75)	.94 (23.88)	.63 (16.00)	.47 (11.94)	1.000 (25.40)	.125 (3.18)	1.000 (25.40)	--	--	--	--	--

CASE#	P	Q	WT. GRAMS
K558	--	--	117.0

Dimensions are in inches (mm). Tolerances: 2 Pl.  $\pm .03$ ; 3 Pl.  $\pm .015$

#### Notes:

- Case material: Aluminum alloy.
- Case finish:  
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Refer to the individual model data sheet for the type of connectors available.



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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I