

Plug-In Bias-Tee

50Ω Wideband 10 to 3000 MHz

PBTC-3G+



Generic photo used for illustration purposes only

CASE STYLE: C07

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	30dBm max.
Voltage at DC port	30V max.
Input Current	500mA
DC resistance from DC to RF&DC port	4.5 ohm typ.

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

Pin Connections

RF	9
RF&DC	12
DC	3
GROUND	all other pins
CASE GROUND	1,2,4,5,7,8,11,13,14,15,16

Features

- wideband, 10 to 3000 MHz
- low insertion loss, 0.6 dB typ.
- hermetic, metal case

Applications

- biasing laser diodes
- biasing amplifiers
- biasing active antennas
- DC return
- DC blocking
- military, hi-rel application

+RoHS Compliant

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

Bias-Tee Electrical Specifications

FREQUENCY (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	
		Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.
f _L	f _U																		
10	3000	0.15	0.7	0.3	1.5	1.0	2.5	27	20	30	20	35	20	1.06	1.2	1.13	1.66	1.6	1.7

L= low range (f_L to 10 f_L)

M= mid range (10 f_L to f_U/2)

U= upper range (f_U/2 to f_U)

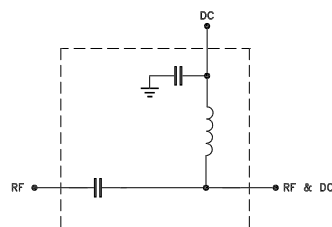
* Insertion Loss and Isolation are guaranteed up to 20 dBm-RF power and 200mA DC current.

** 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						VSWR (:1)
		0mA	20mA	50mA	100mA	150mA	200mA	10mA	20mA	50mA	100mA	150mA	200mA	
10.00	19.79	0.11	0.15	0.16	0.17	0.17	0.18	31.50	31.01	29.96	29.26	29.22	29.42	1.02
15.00	21.83	0.14	0.18	0.18	0.21	0.21	0.15	31.07	30.42	28.95	27.53	27.08	27.10	1.02
141.86	20.57	0.21	0.25	0.25	0.26	0.27	0.23	33.27	33.24	33.17	33.06	32.90	32.75	1.02
276.19	20.83	0.33	0.37	0.36	0.34	0.36	0.36	33.42	33.39	33.57	33.84	33.99	34.10	1.01
403.05	20.98	0.21	0.25	0.22	0.24	0.22	0.22	40.88	41.42	41.56	42.17	41.76	42.32	1.04
791.10	20.55	0.24	0.27	0.28	0.30	0.32	0.29	35.93	36.18	36.01	35.69	35.76	36.04	1.13
925.43	20.02	0.26	0.28	0.26	0.29	0.33	0.29	30.93	30.83	30.98	30.93	31.00	31.02	1.16
1000.00	19.70	0.33	0.34	0.35	0.35	0.38	0.38	35.63	35.41	35.62	35.80	35.55	35.86	1.17
1313.48	19.25	0.38	0.42	0.41	0.43	0.44	0.44	37.38	37.67	37.35	37.42	38.05	38.00	1.26
1701.53	20.14	1.45	1.46	1.50	1.49	1.50	1.45	34.14	33.79	33.97	34.12	34.23	34.09	1.38
1962.71	19.86	0.81	0.79	0.85	0.85	0.84	0.81	34.01	34.04	34.25	34.12	34.13	34.42	1.40
2350.76	20.42	0.74	0.80	0.80	0.78	0.80	0.76	39.61	38.75	38.52	38.86	38.96	38.75	1.50
2477.63	20.80	1.34	1.38	1.41	1.42	1.41	1.36	37.19	37.73	37.85	36.87	37.46	36.98	1.48
2873.14	21.04	1.83	1.92	1.93	1.91	1.93	1.93	40.84	40.10	39.86	41.04	40.12	39.78	1.39
3000.00	21.16	1.80	1.91	1.92	1.90	1.92	1.91	34.25	34.42	34.80	37.52	35.61	34.79	1.31

Electrical Schematic



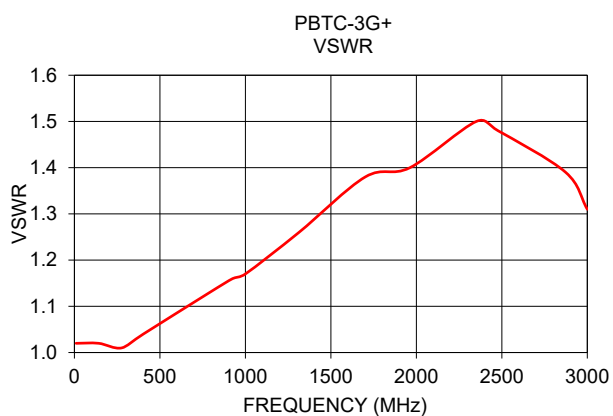
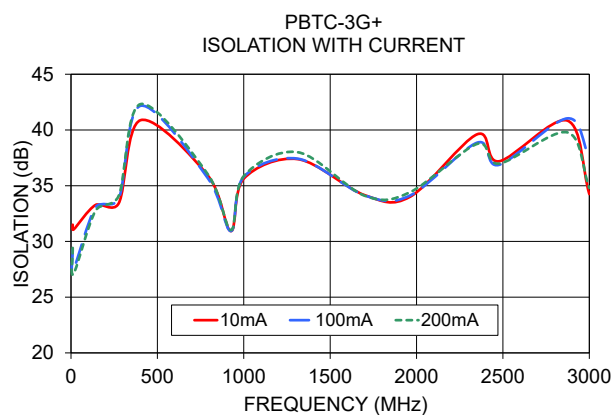
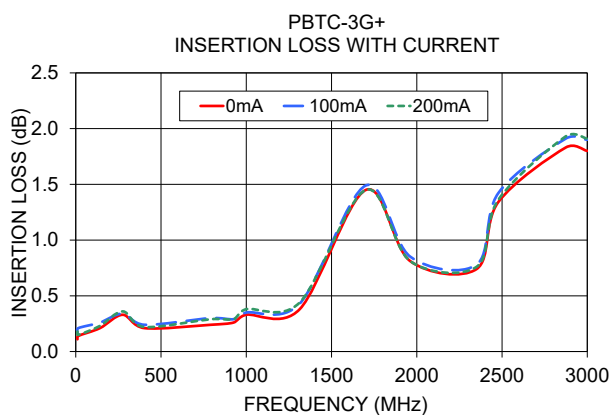
Notes

- 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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Bias Tee , Plug In

PBTC-3G+

Typical Performance Data

TEST CONDITIONS: Input Current = 100mA, @Temperature = +25degC

FREQ. (MHz)	INSERTION LOSS (RF Port to RF&DC Port) (dB)	ISOLATION (RF&DC Port to DC Port) (dB)	ISOLATION (RF Port to DC Port) (dB)	VSWR		
				RF Port (:1)	RF&DC Port (:1)	DC port (:1)
10	0.02	27.89	27.59	1.09	1.14	17.57
50	0.14	31.89	31.89	1.06	1.03	82.73
70	0.13	34.53	34.52	1.06	1.02	133.63
80	0.14	35.45	35.44	1.06	1.02	157.93
100	0.14	36.99	37.06	1.06	1.02	157.93
110	0.14	37.77	37.75	1.05	1.02	144.77
120	0.15	38.51	38.59	1.06	1.02	157.93
130	0.15	39.32	39.46	1.06	1.02	157.93
140	0.15	40.18	40.35	1.06	1.02	173.72
150	0.16	41.07	41.38	1.07	1.02	157.93
160	0.16	42.05	42.49	1.07	1.02	173.72
170	0.16	43.04	43.59	1.08	1.02	124.09
180	0.17	44.06	44.81	1.08	1.02	108.58
190	0.17	45.27	46.27	1.09	1.02	82.73
200	0.17	46.28	47.39	1.08	1.02	57.91
210	0.17	46.92	47.75	1.08	1.02	42.38
220	0.18	47.81	48.50	1.07	1.02	38.61
230	0.18	49.01	48.42	1.07	1.02	36.97
240	0.18	49.53	47.39	1.07	1.02	31.60
250	0.18	49.62	46.14	1.07	1.03	26.33
260	0.19	49.00	44.69	1.07	1.03	20.70
270	0.19	48.35	43.27	1.08	1.03	15.53
300	0.21	46.20	40.36	1.09	1.03	5.54
400	0.26	41.16	38.51	1.08	1.03	5.70
500	0.23	36.66	32.30	1.05	1.04	4.77
600	0.23	38.85	35.10	1.01	1.07	2.99
700	0.32	41.55	39.33	1.02	1.13	8.90
800	0.30	34.46	31.86	1.09	1.17	6.11
900	0.33	32.53	29.54	1.12	1.16	1.28
1000	0.53	37.78	36.42	1.13	1.16	2.89
1100	0.58	34.07	32.28	1.15	1.17	2.03
1200	0.45	36.76	34.88	1.22	1.19	3.56
1300	0.53	41.99	44.97	1.25	1.16	4.47
1400	0.68	37.33	37.28	1.37	1.18	3.50
1500	0.60	35.77	34.36	1.39	1.25	1.62
1600	0.56	41.56	40.68	1.40	1.35	2.45
1700	0.73	41.55	42.10	1.46	1.37	3.11
1800	0.82	37.33	38.52	1.47	1.38	2.67
1900	0.73	39.59	49.54	1.40	1.40	3.14
2000	0.66	42.96	41.82	1.37	1.47	3.18
2100	0.73	39.19	38.46	1.33	1.45	2.14
2200	0.78	40.18	39.71	1.29	1.38	2.65
2300	0.79	40.16	39.04	1.31	1.34	2.43
2400	0.85	39.06	39.37	1.38	1.31	3.01
2500	0.94	41.04	42.42	1.36	1.29	3.96
2600	1.03	46.35	42.26	1.33	1.29	4.54
2700	1.08	44.12	39.38	1.29	1.28	4.57
2800	1.10	38.50	35.96	1.16	1.29	3.28
2900	1.14	38.59	36.49	1.12	1.30	3.71
3000	1.29	38.52	36.40	1.31	1.35	4.23
3100	1.47	39.56	37.77	1.44	1.40	4.78
3200	1.64	41.59	38.15	1.54	1.47	5.44

REV. X1

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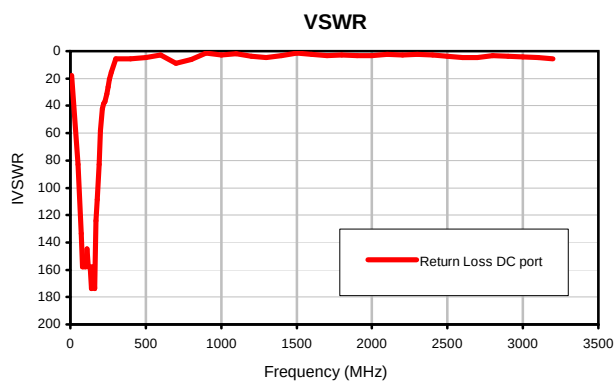
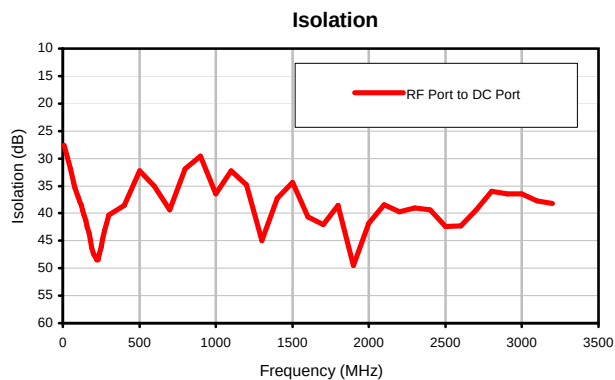
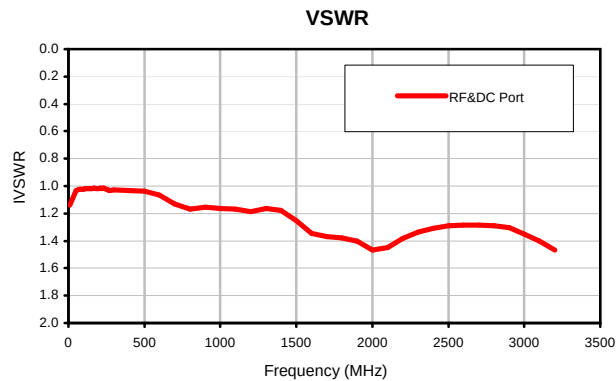
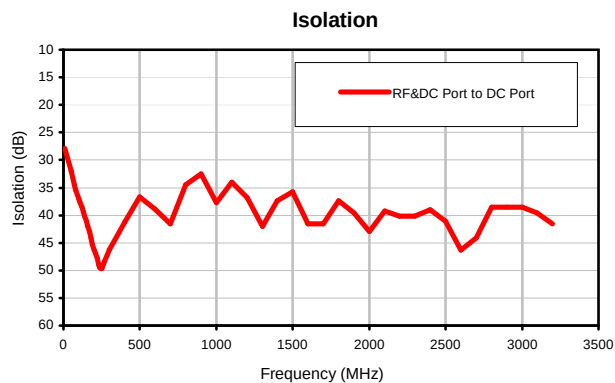
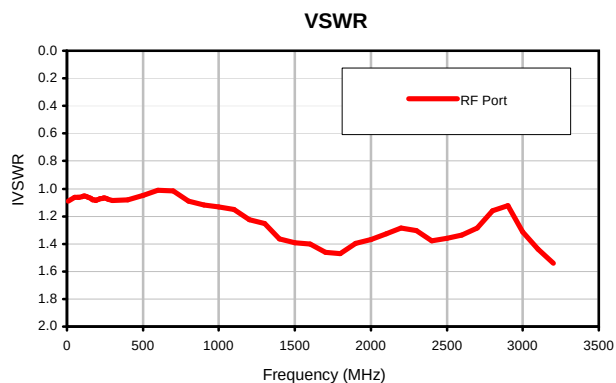
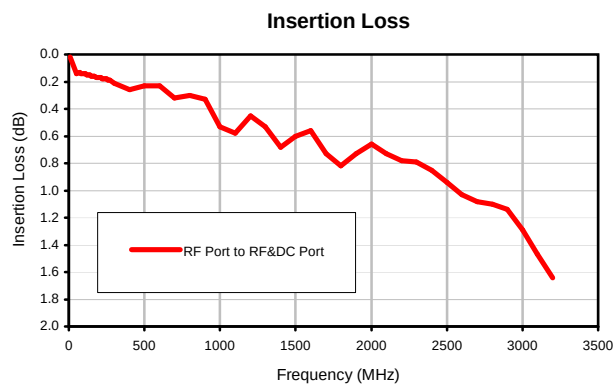
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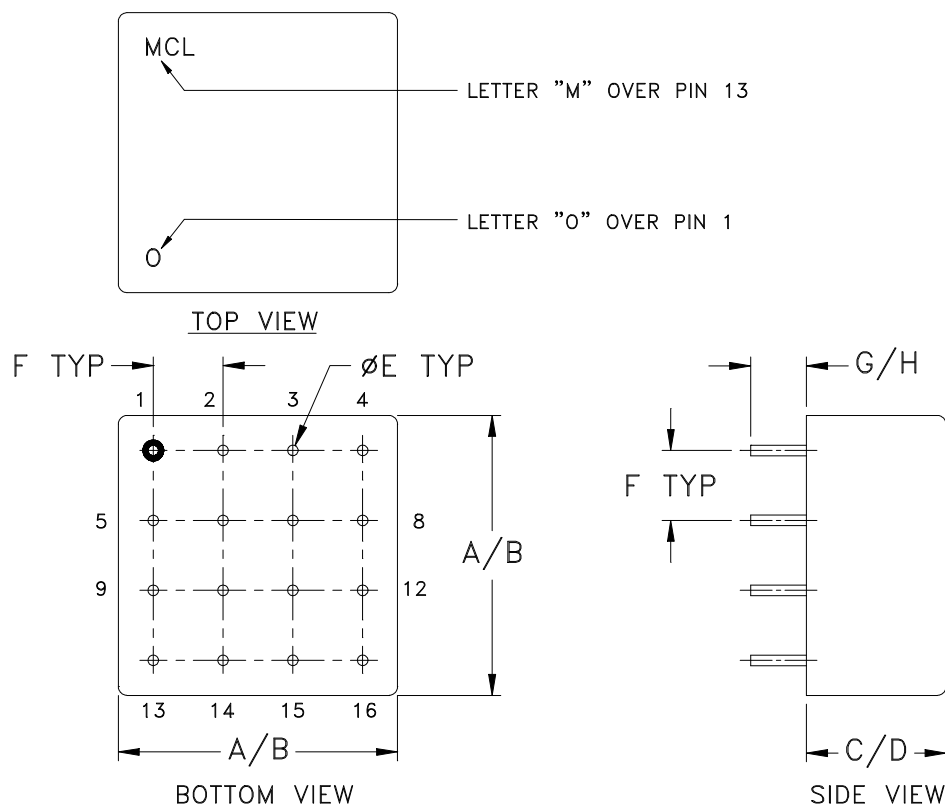


Typical Performance Curves



Outline Dimensions

C07



CASE#	A	B	C	D	E	F	G	H	WT. GRAM
C07	.770 (19.56)	.810 (20.57)	.380 (9.65)	.410 (10.41)	.030 (.76)	.200 (5.08)	.20 (5.08)	.14 (3.56)	11.0

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

Notes:

- Header material: C.R.S.
Pin material: #52 alloy.
Cover material: Cupro-Nickel.
- Pin finish: Electro Tin-Silver..
- Tolerance on pin diameter $\pm .005$ inch.
- Glass meniscus 0.015 inch max.
- Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.



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Mini-Circuits ISO 9001 & ISO 14001 Certified



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
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A



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Specification	Test/Inspection Condition	Reference/Spec
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D