

50Ω High Output 5 to 150 MHz

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Input Power	50mW
Peak IF current	20mA

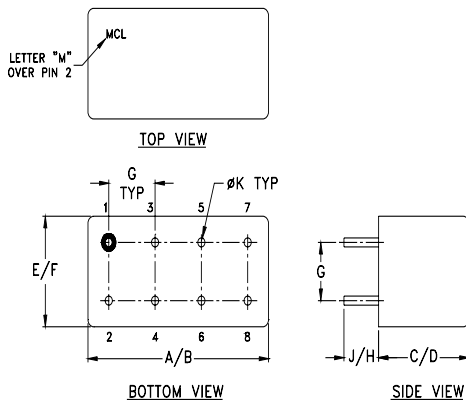
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

RF REF (RF2)	8
RF IN (RF1)	1
DC OUT (I)	3,4^
GROUND	2,5,6,7
CASE GROUND	2

^ pins must be connected together externally

Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F
.770	.800	.385	.400	.370	.400
19.56	20.32	9.78	10.16	9.40	10.16
G	H	J	K		
.200	.20	.14	.031		
5.08	5.08	3.56	0.79		
				wt	
				grams	
				5.2	

Features

- wideband, 5 to 150 MHz
- hermetic case
- low DC offset, 0.3 mV typ.
- high DC output, 1000 mV typ.

Applications

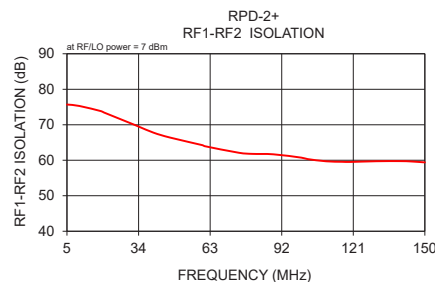
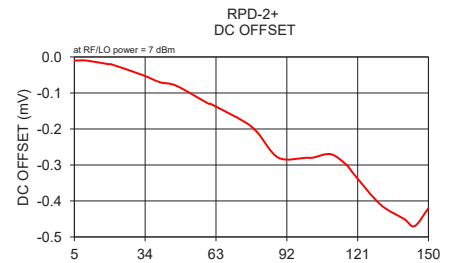
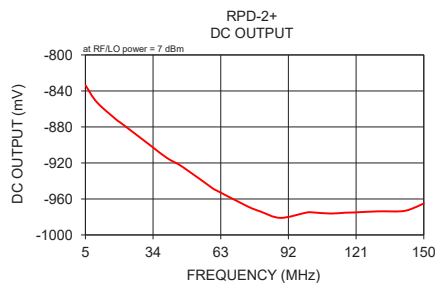
- monitoring circuits
- leveling circuits
- PLL

Phase Detector Electrical Specifications

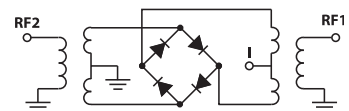
FREQUENCY (MHz)		POWER IN	SCALE FACTOR	IMPEDANCE (ohms) Output Load I	ISOLATION (dB)	OUTPUT POLARITY	DC OUTPUT (mV)				FIGURE OF MERIT
RF1	I	RF1									
RF2		RF2 (dBm)	mV/deg.		RF1/RF2 Min.	RF1/RF2 In-Phase	Max. Typ.	Offset Min.	Typ.	Max.	Typ.
5-150	DC-50	7	8	500	40	neg.	1000	700	0.3	1	143

Typical Performance Data

Frequency (MHz)	DC Output mV	DC Offset mV	RF1-RF2 Isolation (dB)
	$\bar{X}$ σ	$\bar{X}$ σ	$\bar{X}$
5.00	-833.63 2.72	-0.01 0.26	75.70
10.00	-852.76 1.95	-0.01 0.27	75.30
18.93	-873.33 1.77	-0.02 0.26	73.81
20.00	-875.10 1.78	-0.02 0.26	73.45
32.86	-900.53 2.55	-0.05 0.24	69.84
40.00	-914.52 3.03	-0.07 0.24	67.79
46.79	-924.59 3.49	-0.08 0.23	66.39
60.00	-949.07 4.67	-0.13 0.23	64.23
60.71	-949.90 4.72	-0.13 0.23	63.98
74.64	-968.41 6.47	-0.18 0.22	62.11
80.00	-973.90 7.19	-0.21 0.22	61.80
88.57	-981.00 8.49	-0.28 0.23	61.68
100.00	-974.94 9.96	-0.28 0.26	60.73
102.50	-974.94 10.38	-0.28 0.27	60.33
110.00	-976.18 11.49	-0.27 0.25	59.71
116.43	-975.23 12.62	-0.30 0.23	59.57
120.00	-975.00 13.37	-0.33 0.22	59.53
130.36	-973.76 16.20	-0.41 0.19	59.73
140.00	-973.73 19.18	-0.45 0.22	59.76
144.29	-971.46 20.99	-0.47 0.25	59.67
150.00	-964.95 23.54	-0.42 0.33	59.40



electrical schematic



Notes

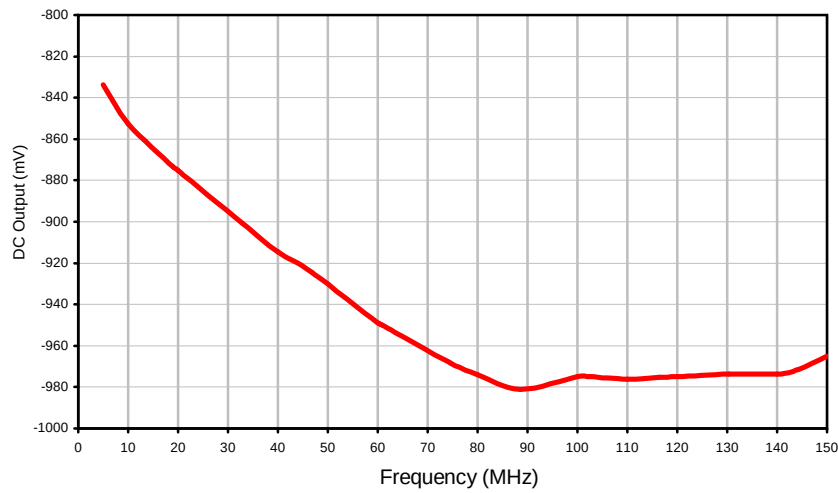
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Typical Performance Data

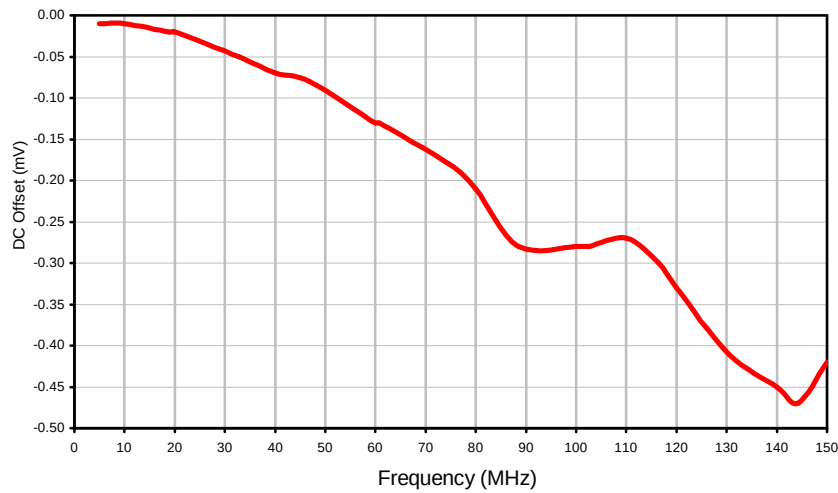
FREQUENCY (MHz)	DC OUTPUT (mV)	DC OFFSET (mV)	RF1-RF2 ISOLATION (dB)
5.00	-833.63	-0.01	75.70
10.00	-852.76	-0.01	75.30
18.93	-873.33	-0.02	73.81
20.00	-875.10	-0.02	73.45
32.86	-900.53	-0.05	69.84
40.00	-914.52	-0.07	67.79
46.79	-924.59	-0.08	66.39
60.00	-949.07	-0.13	64.23
60.71	-949.90	-0.13	63.98
74.64	-968.41	-0.18	62.11
80.00	-973.90	-0.21	61.80
88.57	-981.00	-0.28	61.68
100.00	-974.94	-0.28	60.73
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130.36	-973.76	-0.41	59.73
140.00	-973.73	-0.45	59.76
144.29	-971.46	-0.47	59.67
150.00	-964.95	-0.42	59.40

Typical Performance Curves

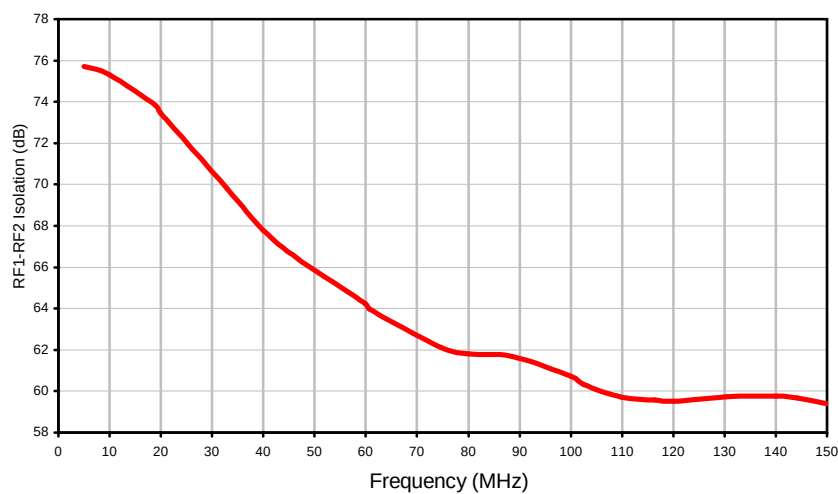
DC Output



DC Offset

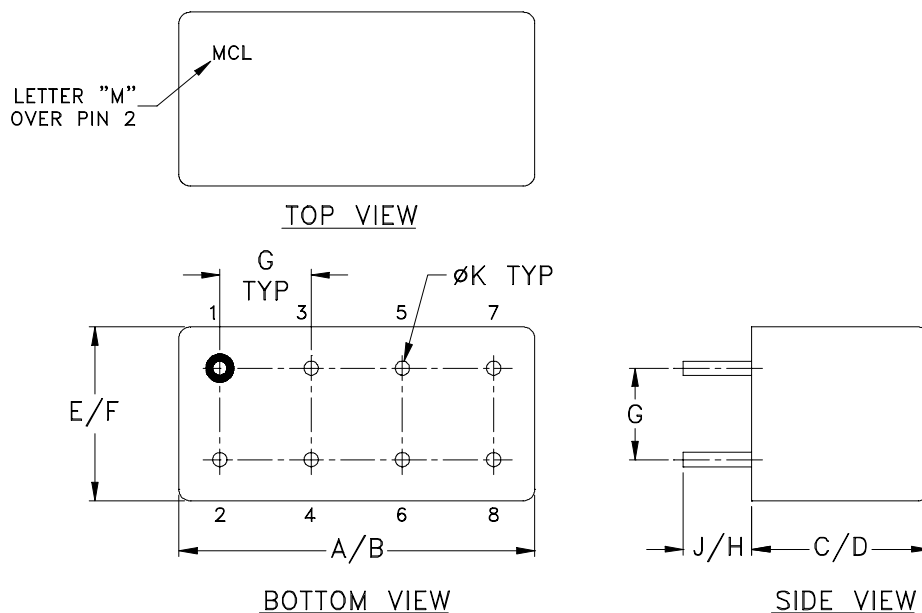


RF1-RF2 Isolation



A01
A04
A05
A06

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	WT, GRAM
A01	.770 (19.56)	.800 (20.32)	.385 (9.78)	.400 (10.16)	.370 (9.40)	.400 (10.16)	.200 (5.08)	.20 (5.08)	.14 (3.56)	.031 (.79)	5.2
A04			.200 (5.08)	.210 (5.33)							3.7
A05			.240 (6.10)	.250 (6.35)							3.7
A06			.285 (7.24)	.310 (7.87)							5.2

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.
- Insulated spacer available. Request P/N B14-045-01.
- 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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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