

# Plug-In Phase Detector

## RPD-1+

50Ω High Output 1 to 100 MHz



Generic photo used for illustration purposes only

CASE STYLE: A01

**+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 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

### Features

- wideband, 1 to 100 MHz
- hermetic case
- low DC offset, 0.2 mV typ.
- high DC output, 1000 mV typ.

### Applications

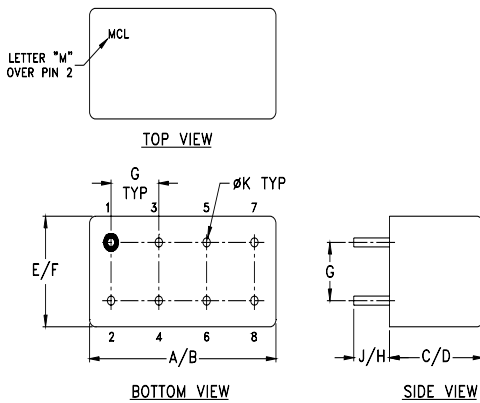
- monitoring circuits
- leveling circuits
- PLL

### Phase Detector Electrical Specifications

FREQUENCY (MHz)	POWER IN RF1 RF2 (dBm)	SCALE FACTOR mV/deg.	IMPEDANCE (ohms) Output Load I	ISOLATION (dB) RF1/RF2 Min.	OUTPUT POLARITY RF1/RF2 In-Phase	DC OUTPUT (mV)		FIGURE OF MERIT Typ.	
						Max. Typ.	Offset Typ. Max.		
1-100	DC-50	7	8	500	40	neg.	1000 700	0.2 1	143

DC output decreases to 550mV over 1-10 MHz as temperature decreases to -55°C

### Outline Drawing

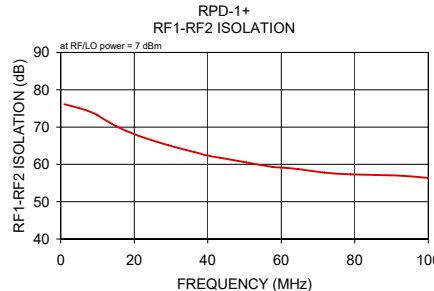
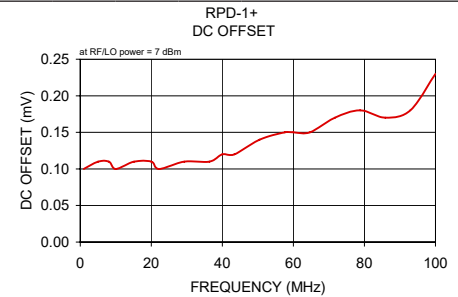
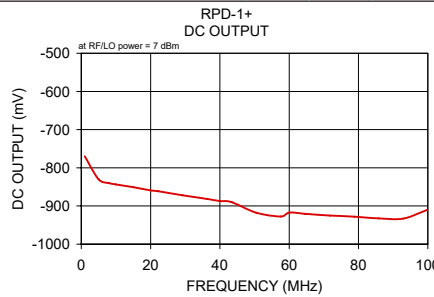


### Outline Dimensions (inch/mm)

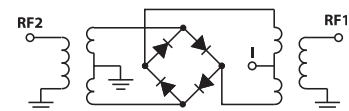
A	B	C	D	E	F
.770	.800	.385	.400	.370	.400
19.56	20.32	9.78	10.16	9.40	10.16
G	H	J	K	wt	
.200	.20	.14	.031	grams	
5.08	5.08	3.56	0.79	5.2	

### Typical Performance Data

Frequency (MHz)	DC Output mV		DC Offset mV		RF1-RF2 Isolation (dB)
	$\bar{X}$	$\sigma$	$\bar{X}$	$\sigma$	
1.00	-769.98	14.85	0.10	0.16	76.12
5.00	-830.34	8.90	0.11	0.18	75.09
8.07	-840.24	14.44	0.11	0.18	74.07
10.00	-843.71	14.61	0.10	0.18	73.19
15.14	-851.12	17.01	0.11	0.19	70.19
20.00	-859.20	18.91	0.11	0.19	68.10
22.21	-861.26	20.52	0.10	0.20	67.28
29.29	-872.02	22.55	0.11	0.21	65.14
36.36	-881.57	24.77	0.11	0.22	63.29
40.00	-886.86	25.39	0.12	0.23	62.38
43.43	-889.93	26.41	0.12	0.23	61.76
50.50	-917.82	25.99	0.14	0.25	60.51
57.57	-927.50	28.69	0.15	0.27	59.35
60.00	-917.14	33.08	0.15	0.26	59.18
64.64	-920.62	38.60	0.15	0.27	58.73
71.71	-925.22	45.18	0.17	0.31	57.82
78.79	-928.03	51.83	0.18	0.31	57.35
85.86	-932.34	57.31	0.17	0.31	57.15
92.93	-932.98	60.65	0.18	0.38	56.93
100.00	-909.17	74.27	0.23	0.43	56.36



### 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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