

Surface Mount Phase Detector

50Ω High Output 300 to 650 MHz

SYPD-52W+



CASE STYLE: TTT167
PRICE: \$16.95 ea. QTY (1-9)

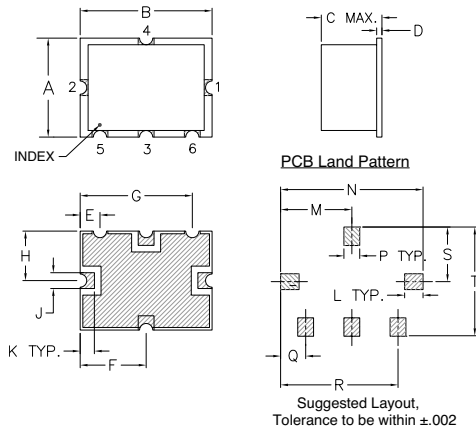
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Input Power	50 mW
Peak IF current	20 mA

Pin Connections

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

Outline Drawing

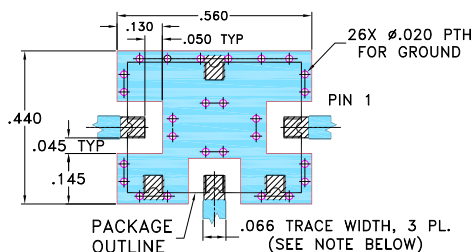


Outline Dimensions (inch mm)

A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050
9.60	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27

L	M	N	P	Q	R	S	T	wt.
.070	.270	.540	.060	.095	.445	.208	.415	grams
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8

Demo Board MCL P/N: TB-12 Suggested PCB Layout (PL-079)



- NOTE:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - GROUND PAD SHALL BE FREE OF SOLDER MASK IF REQUIRED FOR SOLDERING.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER), SEE NOTE 2.
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- frequency range, 300 to 650 MHz
- high DC output, 900 mV typ.

Applications

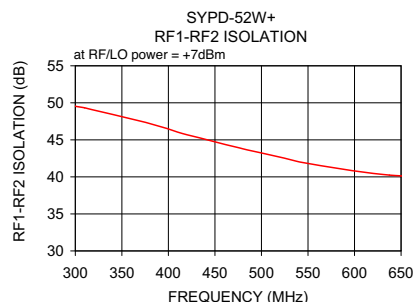
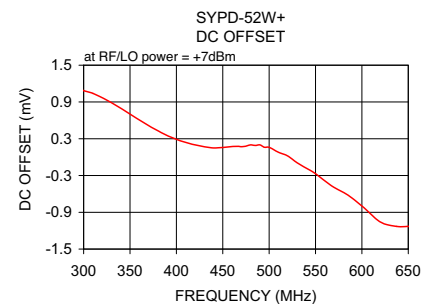
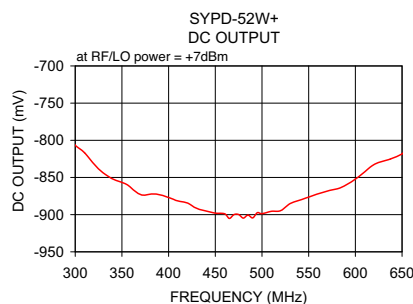
- monitoring circuits
- leveling circuits
- PLL

Phase Detector Electrical Specifications

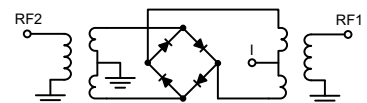
FREQUENCY (MHz)	POWER IN	SCALE FACTOR	IMPEDANCE (ohms)	ISOLATION (dB)	OUTPUT POLARITY	DC OUTPUT (mV)	FIGURE OF MERIT
RF1	RF1						
RF2	RF2						
	(dBm)	mV/deg.	Output Load I	RF1/RF2	RF1/RF2	Max. Offset	Typ. Min. Typ. Max. Typ.
300-400	DC-50	+7	8	500	34	neg.	850 700 0.9 4.0 129
400-500	DC-50	+7	8	500	30	neg.	900 750 0.7 1.2 129
500-650	DC-50	+7	8	500	28	neg.	850 700 1.0 5.0 129

Typical Performance Data

Frequency (MHz)	DC Output mV	DC Offset mV	RF1-RF2 Isolation (dB)
	$\bar{X}$ σ	$\bar{X}$ σ	$\bar{X}$
300.0	-806.7 10.04	1.09 0.52	49.54
325.0	-838.5 9.84	0.93 0.46	48.86
340.0	-852.0 9.52	0.80 0.42	48.41
355.0	-859.3 9.22	0.65 0.37	47.98
385.0	-872.0 8.24	0.39 0.32	47.04
400.0	-877.0 7.60	0.29 0.35	46.44
430.0	-891.6 7.18	0.17 0.45	45.36
450.0	-897.9 6.93	0.16 0.54	44.73
485.0	-900.5 6.57	0.19 0.70	43.64
500.0	-898.7 6.49	0.16 0.77	43.23
550.0	-876.4 6.16	-0.27 1.04	41.80
585.0	-863.3 6.63	-0.62 1.20	41.11
602.5	-850.1 6.95	-0.83 1.26	40.74
620.0	-832.6 7.64	-1.06 1.37	40.47
650.0	-818.3 8.97	-1.13 1.60	40.13



electrical schematic



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