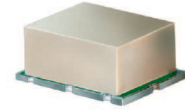


X2 Frequency Multiplier

50Ω Output 100 to 3000 MHz

SYK-2-33+



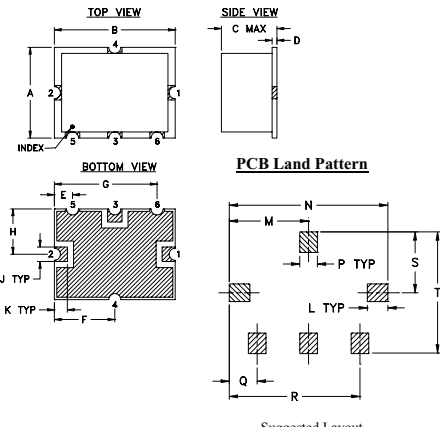
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	100 mW

Pin Connections

INPUT	2
OUTPUT	1
GROUND	4,5,6
NOT USED	3

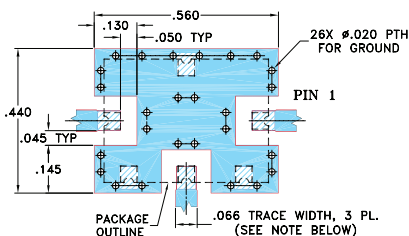
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
																		grams
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050									
9.65	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27									0.8
.070	.270	.540	.060	.095	.445	.208	.415											
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54											

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.
- THE USE OF SOLDER MASK OVER THE GROUND AREA UNDER THE UNIT AS SHOWN IS RECOMMENDED TO PREVENT POTENTIAL SHORTING. IF USER CHOOSES TO EXPOSE METAL UNDER THE ENTIRE UNIT GROUND PAD FOR IMPROVED GROUNDING, IT IS RECOMMENDED A SOLDER MASK DAM BE APPLIED AROUND EACH GROUND PAD TO ENSURE FILLET AND CONNECTION AT GROUND PADS.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE

Notes

- A. 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.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
 C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wideband, 100 to 3000 MHz
- low conversion loss, 11.5 dB typ.
- high fundamental & harmonic suppression, F1, 30 dBc typ.; F3, 33 dBc typ.; F4, 20 dBc typ.

Applications

- synthesizers
- local oscillators

CASE STYLE: TTT167
PRICE: \$ 29.95 ea. QTY (1-9)

+RoHS Compliant

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

Electrical Specifications at 25°C

MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)					
	F1 Input	F2 Output	Min.	Max.	Typ.	Max.	F1 Typ.	F3 Typ.	F4 Typ.	F1 Min.	F3 Min.	F4 Min.
2	50-1500	100-3000	11	15	11.5	15	30	17	33	18	20	10

* Harmonics of input frequency below the power level of F2

Typical Performance Data at 25°C

Input Frequency (MHz)	INPUT RF= 11dBm				INPUT RF= 15dBm			
	Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)		
	F2	F1	F3	F4	F2	F1	F3	F4
50.00	10.32	61.79	45.86	15.26	10.78	54.14	40.80	18.51
148.00	10.17	48.30	44.13	15.78	10.61	46.57	37.88	21.30
284.00	10.42	49.21	40.15	15.81	11.13	48.81	36.67	20.08
352.00	10.47	36.50	44.08	15.73	11.33	37.80	41.55	18.74
488.00	10.73	37.83	36.02	15.30	11.29	40.13	31.84	16.46
556.00	10.76	34.45	44.33	16.17	11.31	38.34	37.42	16.88
692.00	10.97	30.75	37.34	19.04	11.12	34.11	33.34	20.62
760.00	11.13	27.63	35.35	20.10	11.15	31.38	33.62	21.85
896.00	11.94	25.89	30.65	16.13	11.31	29.11	31.63	22.00
964.00	12.60	26.14	29.82	14.67	11.66	29.16	31.29	20.91
1032.00	12.89	25.37	33.01	15.09	11.93	28.18	31.85	20.24
1168.00	12.77	31.16	28.60	18.53	11.90	48.30	30.89	21.67
1236.00	12.72	28.98	28.14	20.76	11.77	39.97	29.30	23.23
1372.00	12.52	27.74	28.02	25.51	11.52	35.26	29.49	26.87
1450.00	12.54	25.08	28.55	26.88	11.60	30.86	29.46	28.42
1500.00	12.51	25.11	29.38	28.47	11.82	30.22	29.60	29.82

