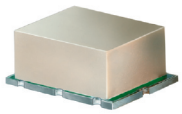
X2 Frequency Multiplier

SYK-2-33+

50Ω Output 100 to 3000 MHz



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

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

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

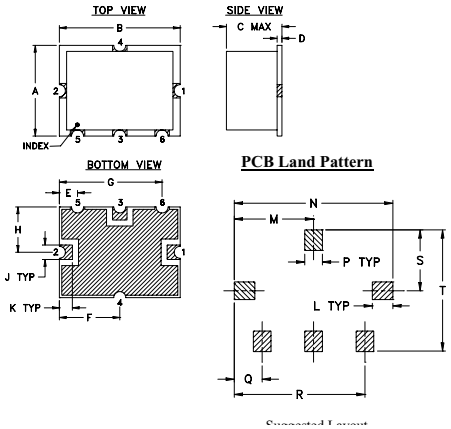
Features

- 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

Outline Drawing

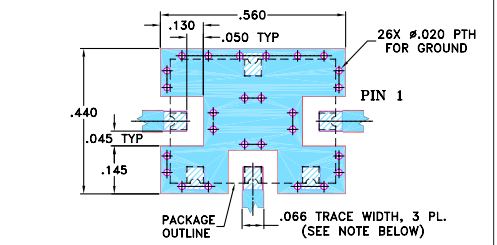


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050
9.65	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: 1. 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.
2. GROUND PAD SHALL BE FREE OF SOLDER MASK IF REQUIRED FOR SOLDERING.
3. 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

Electrical Specifications at 25°C

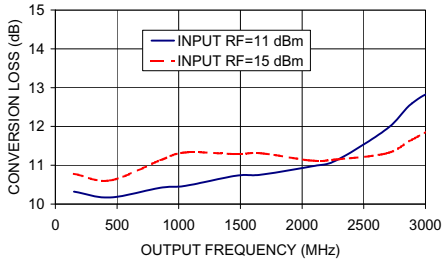
MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)					
	F1	F2					F1		F3		F4	
	Input	Output	Min.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.
2	**50-1500**	**100-3000**	**11**	**15**	**11.5**	**15**	**30**	**17**	**33**	**18**	**20**	**10**

* Harmonics of input frequency below the power level of F2

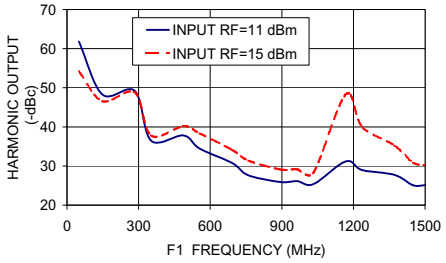
Typical Performance Data at 25°C

Input Frequency (MHz)	INPUT RF= 11dBm Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			INPUT RF= 15dBm 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

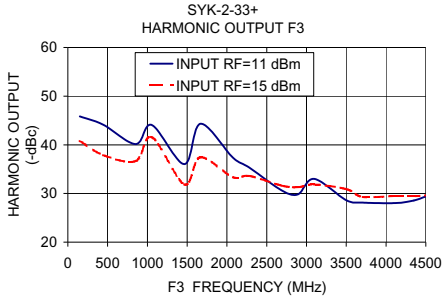
SYK-2-33+
CONVERSION LOSS



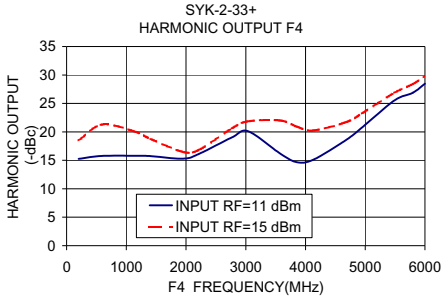
SYK-2-33+
HARMONIC OUTPUT F1



SYK-2-33+
HARMONIC OUTPUT F3



SYK-2-33+
HARMONIC OUTPUT F4



For detailed performance specs & shopping online see web site

REV. OR
M117534
SYK-2-33+
ED-13376/1
WL/CP
081229