

# X3 Frequency Multiplier

50Ω Output 450 to 900 MHz

## RMK-3-92+



CASE STYLE: TT1224  
PRICE: \$8.95 ea. QTY (10-49)

**+ 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	20 dBm
Permanent damage may occur if any of these limits are exceeded.	

### Pin Connections

INPUT	1
OUTPUT	4
GROUND	2,3,5,6

### Features

- low conversion loss, 14 dB typ.
- high rejection of adjacent harmonics, 66 dBc typ.
- aqueous washable

### Applications

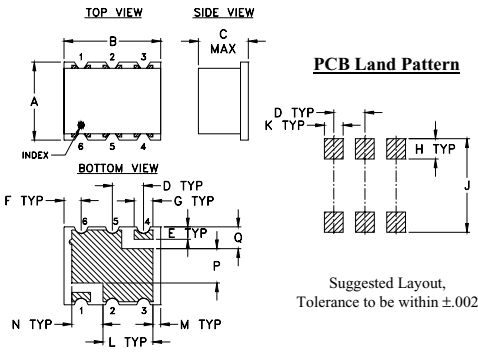
- synthesizers
- local oscillators
- satellite up and down converters

### Electrical Specifications at 25°C

Parameter	Min.	Typ.	Max.	Unit
Multiplier Factor		3		
Frequency Range, Input (F1)	150	—	300	MHz
Frequency Range, Output (F3)	450	—	900	MHz
Input Power	12	—	17	dBm
Conversion Loss	—	14	19	dB
Harmonic Output*, -dBc	F1	-13	-1	dB
	F2	40	66	
	F4	40	67	

\* Harmonics of input frequency below the power level of F3

### Outline Drawing



Suggested Layout, Tolerance to be within ±.002

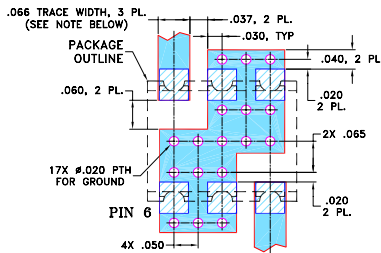
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
.25	.31	.16	.100	.040	.055	.060	.065
6.35	7.87	4.06	2.54	1.02	1.40	1.52	1.65
J	K	L	M	N	P	Q	wt.
.300	.060	.160	.025	.100	.110	.070	grams
7.62	1.52	4.06	0.64	2.54	2.79	1.78	0.16

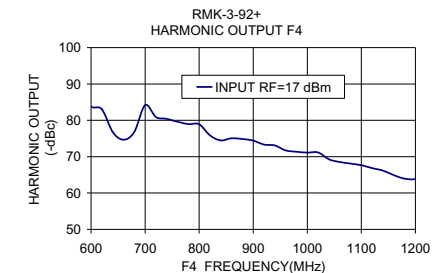
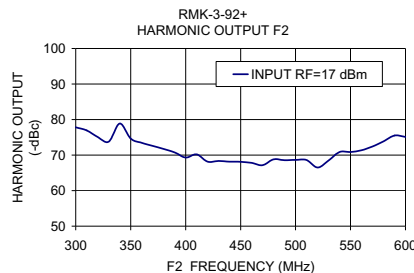
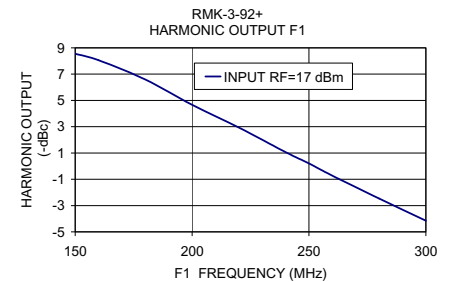
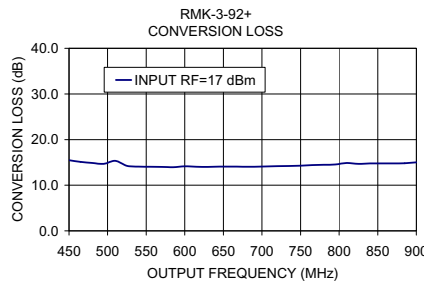
### Typical Performance Data

Frequency		Conv. Loss (dB) F3	Harmonic Rejection Below F3, (-dBc) at RF Input Power 17 dBm		
Input (MHz)	Output (MHz)		F1	F2	F4
150.00	450.00	15.47	8.55	77.81	83.80
160.00	480.00	14.88	8.06	75.12	76.81
180.00	540.00	14.09	6.59	73.46	80.89
200.00	600.00	14.14	4.67	69.31	78.91
220.00	660.00	14.08	2.94	68.16	74.84
240.00	720.00	14.17	1.07	68.79	71.74
250.00	750.00	14.29	0.21	68.64	71.11
260.00	780.00	14.47	-0.72	66.50	69.28
280.00	840.00	14.78	-2.47	71.34	66.85
300.00	900.00	15.01	-4.15	75.10	63.85

### Demo Board MCL P/N: TB-393 Suggested PCB Layout (PL-258)



- NOTES: 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. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK



For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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](http://www.minicircuits.com/MCLStore/terms.jsp).