

# X2 Frequency Multiplier

## KBA-40+ KBA-40

50Ω Output 5400 to 9600 MHz



### Maximum Ratings

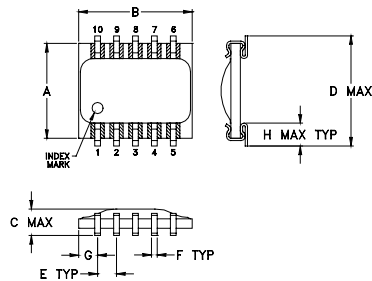
Operating Temperature	-40°C to 85 °C
Storage Temperature	-55°C to 100°C
RF Input Power	200mW
Permanent damage may occur if any of these limits are exceeded.	

### Pin Connections

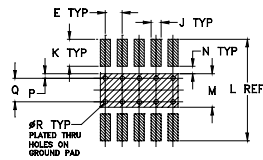
INPUT	10
OUTPUT	6
SAMPLE*	1
GROUND	2,3,4,5,7,8,9

\* Sample port output power, -10 dBc typ.  
Terminate in 50 ohms if not used.

### Outline Drawing



### PCB Land Pattern



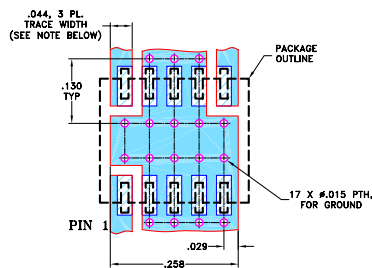
Suggested Layout.

Tolerance to be within ±.002  
ADJACENT GROUND PINS SHALL BE CONNECTED TO EACH OTHER AND TO GROUND PAD

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	
.250	.300	.095	.290	.050	.115	.050	.060	
6.35	7.62	2.41	7.37	1.27	2.93	1.27	1.52	
J	K	L	M	N	P	Q	R	wt
.030	.080	.300	.100	.020	.015	.070	.014	grams
0.76	2.03	7.62	2.54	0.51	0.38	1.78	0.36	0.3

### Demo Board MCL P/N: TB-74 Suggested PCB Layout (PL-067)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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.  
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Features

- wideband, 5400 to 9600 MHz
- low insertion loss, 12.3 dB typ.
- low profile, 0.070" max.
- aqueous washable
- protected by U.S patent 5,534,830

### Applications

- synthesizers
- local oscillators

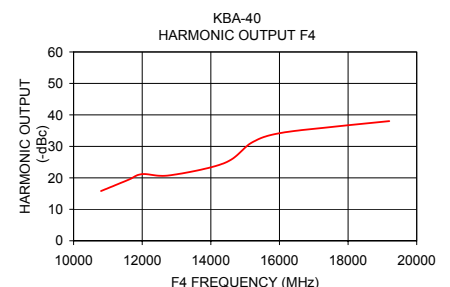
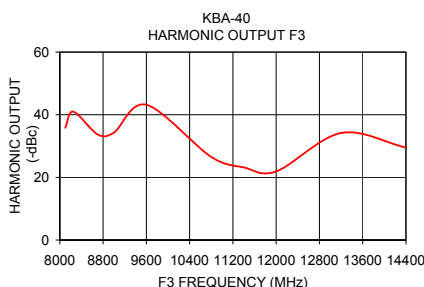
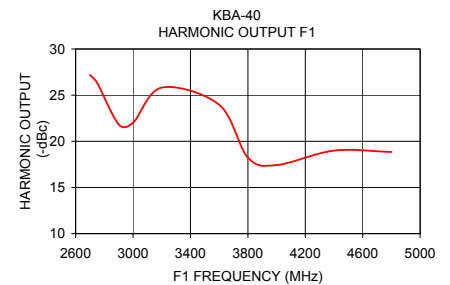
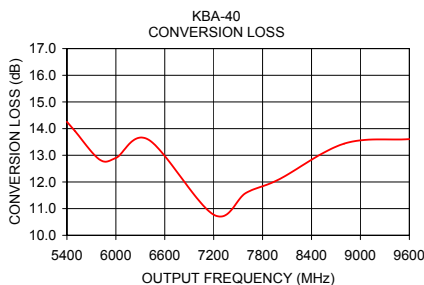
### Electrical Specifications

MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)					
	F1 Input	F2 Output	Min.	Max.	Typ.	Max.	F1 Typ.	F1 Min.	F3 Typ.	F3 Min.	F4 Typ.	F4 Min.
2	2700-4800	5400-9600	10	16	12.3	17.6	18	10	26	15	24	14
	2700-4800	5400-9600	5	10	13	19	15	8	26	16	26	12

\* Harmonics of input frequency below the power level of F2

### Typical Performance Data 25°C

Input Frequency (MHz)	Conversion Loss (dB) F2	F1	Harmonic Output (-dBc) F3	F4
2700.00	14.26	27.19	35.82	15.80
2750.00	13.90	26.33	40.98	16.70
2900.00	12.84	21.84	33.70	19.39
3000.00	12.90	22.03	34.30	21.18
3200.00	13.59	25.82	43.18	20.79
3600.00	10.77	23.96	26.54	24.70
3800.00	11.60	18.24	23.18	31.24
4000.00	12.09	17.42	21.89	34.19
4400.00	13.44	19.00	34.16	36.27
4800.00	13.61	18.85	29.53	38.03



**Mini-Circuits**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED  
IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

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