

# X2 Frequency Multiplier

50Ω Output 5400 to 9600 MHz

KBA-40+  
KBA-40



## Maximum Ratings

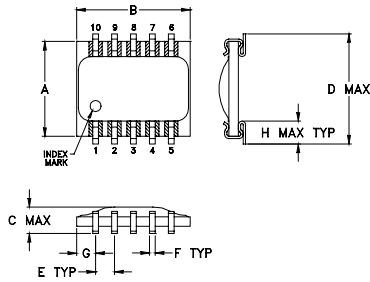
Operating Temperature	-40°C to 85 °C
Storage Temperature	-55°C to 100°C
RF Input Power	200mW

## Pin Connections

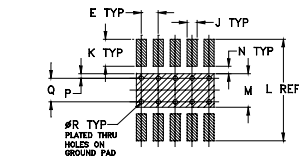
INPUT	10
OUTPUT	6
SAMPLE*	1
GROUND	2,3,4,5,7,8,9

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

## Outline Drawing



## PCB Land Pattern

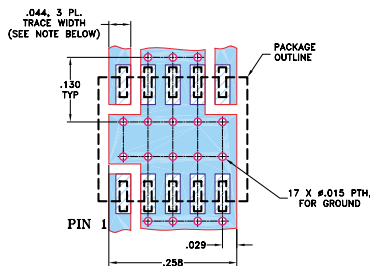


Suggested Layout,  
Tolerance to be within ±.002  
ADJACENT GROUND PINS SHALL BE CONNECTED  
TO EACH OTHER AND TO GROUND PAD

## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	
.250	.300	.095	.290	.050	.015	.050	.060	
6.35	7.62	2.41	7.37	1.27	0.38	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.  
■ DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
■ 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

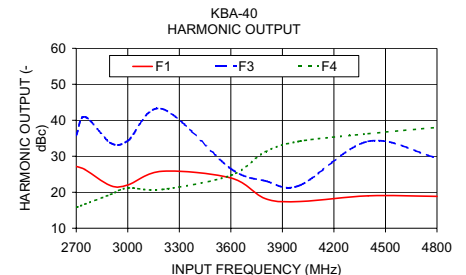
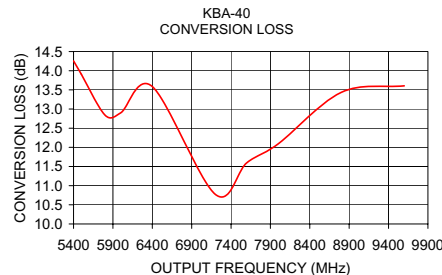
## Electrical Specifications

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

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

## Typical Performance Data

Output Frequency (MHz)	Conversion Loss (dB)	Input Frequency (MHz)	Harmonic Output (-dBc)		
			F1	F3	F4
5400.00	14.26	2700.00	27.19	35.82	15.80
5500.00	13.90	2750.00	26.33	40.98	16.70
5800.00	12.84	2900.00	21.84	33.70	19.39
6000.00	12.90	3000.00	22.03	34.30	21.18
6400.00	13.59	3200.00	25.82	43.18	20.79
7200.00	10.77	3600.00	23.96	26.54	24.70
7600.00	11.60	3800.00	18.24	23.18	31.24
8000.00	12.09	4000.00	17.42	21.89	34.19
8800.00	13.44	4400.00	19.00	34.16	36.27
9600.00	13.61	4800.00	18.85	29.53	38.03



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RF/IF MICROWAVE COMPONENTS

REV. D  
M115169  
KBA-40  
AD/CP/AM  
080401