X5 Frequency Multiplier

RMK-5-472+

50Ω Output 3375 to 4750 MHz

CASE STYLE: TT1224

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, 22 dB typ.
- high adjacent harmonic rejection, F4, -55 dBc typ., F6, 60 dBc typ.
- aqueous washable

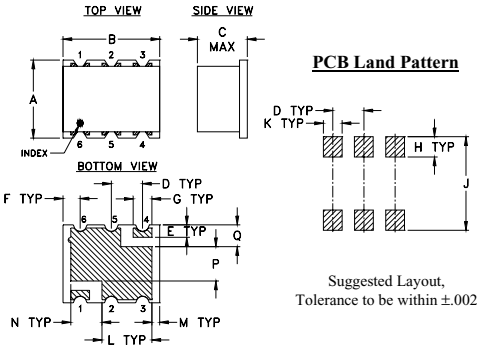
Applications

- synthesizers
- local oscillators
- satellite up and down converters

+RoHS Compliant

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

Outline Drawing

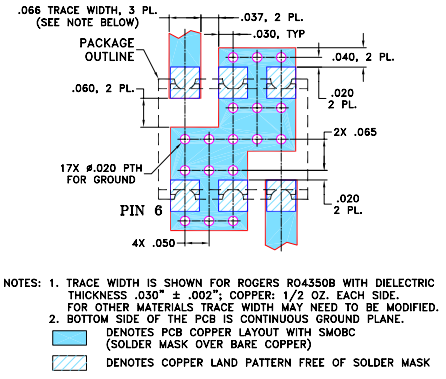


Outline Dimensions (inch / mm)

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

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

Electrical Specifications at 25°C

Parameter		Min.	Typ.	Max.	Unit
Multiplier Factor			5		
Frequency Range, Input (F1)		675		950	MHz
Frequency Range, Output (F5)		3375		4750	MHz
Input Power		10	—	15	dBm
Conversion Loss		—	22	26.5	dB
Harmonic Ouput*	F1	-3	4	—	dBc
	F2	40	60	—	
	F3	-8	0	—	
	F4	40	55	—	
	F6	40	60	—	
	F7	0	5	—	

* Harmonics of input frequency below the power level of F5

Typical Performance Data

Frequency Input (MHz)	Frequency Output (MHz)	Conv. Loss (dB) F5	Harmonic Rejection Below F5 (dBc) at RF Input Power 10 dBm F1	F2	F3	F4	F6	F7
675	3375	22.65	8.67	65.80	2.14	56.28	59.68	8.06
700	3500	22.56	8.18	64.45	1.57	54.80	58.58	10.02
725	3625	22.39	7.67	67.46	1.04	58.07	64.28	11.24
750	3750	22.22	7.28	66.36	0.64	57.14	64.54	12.62
775	3875	22.02	6.90	65.86	0.19	56.94	66.06	13.65
800	4000	22.03	6.43	65.28	-0.66	56.72	67.50	14.70
825	4125	22.16	5.72	64.71	-1.36	56.48	69.52	14.86
850	4250	22.17	5.26	64.07	-2.07	56.09	71.27	14.80
875	4375	22.51	4.42	62.51	-2.96	55.70	75.31	15.00
900	4500	22.84	3.60	61.27	-3.93	55.20	79.85	13.74
925	4625	23.07	2.89	59.77	-4.66	54.44	83.09	9.54
950	4750	23.83	1.69	57.92	-5.80	53.56	82.63	11.69

at RF Input Power 15 dBm

675	3375	23.46	11.30	64.84	5.10	56.19	54.87	4.85
700	3500	23.06	11.09	63.82	4.84	54.76	54.22	5.99
725	3625	22.57	10.90	67.78	4.47	59.20	63.77	7.21
750	3750	22.40	10.44	66.20	4.32	57.68	63.12	8.31
775	3875	22.26	10.02	65.58	3.86	57.36	66.03	8.44
800	4000	22.54	9.30	64.75	2.98	56.85	66.67	9.12
825	4125	22.14	9.06	64.85	2.46	56.91	69.93	8.92
850	4250	22.37	8.40	64.49	1.63	56.57	73.03	8.18
875	4375	22.35	7.85	63.64	0.84	56.65	72.66	8.62
900	4500	22.53	7.22	62.87	-0.18	56.48	71.92	7.25
925	4625	22.93	6.37	61.61	-1.03	55.74	71.85	7.71
950	4750	23.66	5.19	60.02	-1.89	54.90	69.13	7.64

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-Circuit's applicable established test performance criteria and measurement instructions.
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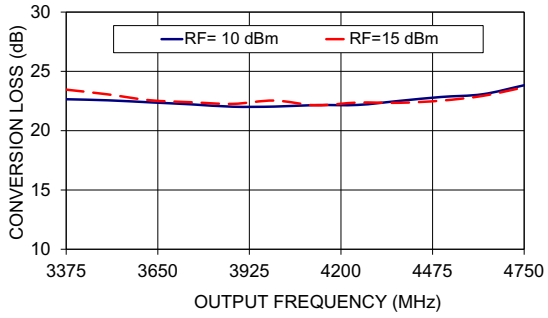
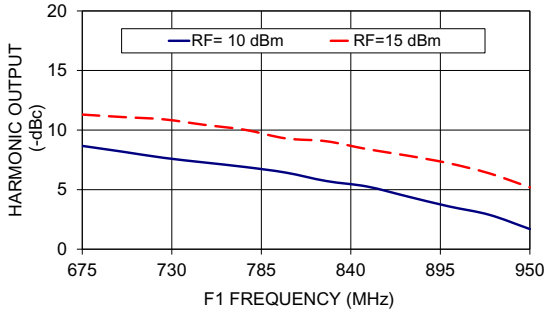
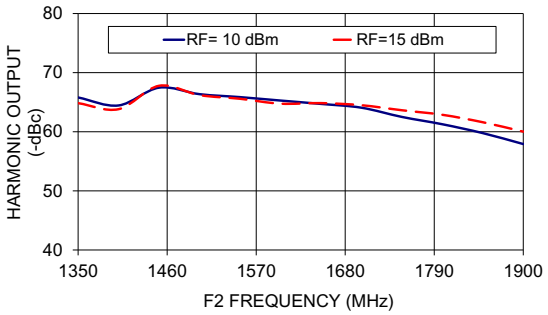
RMK-5-472+
CONVERSION LOSS



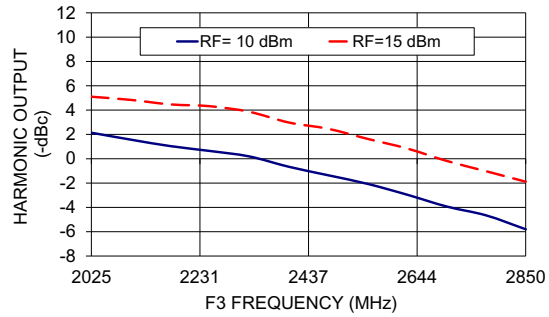
RMK-5-472+
HARMONIC OUTPUT F1



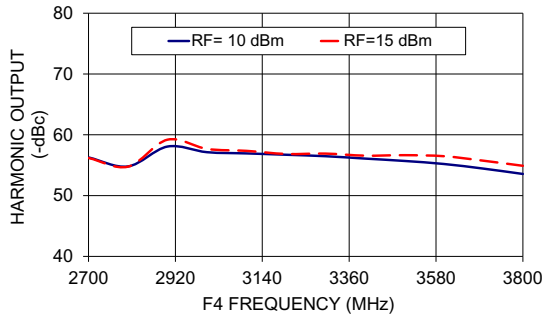
RMK-5-472+
HARMONIC OUTPUT F2



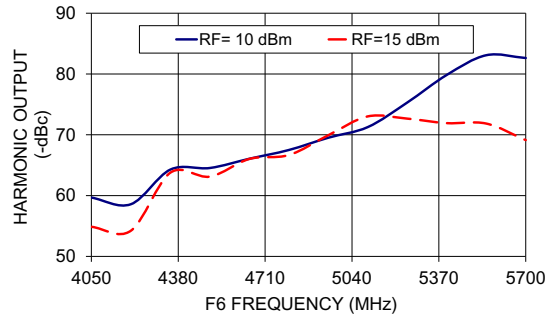
RMK-5-472+
HARMONIC OUTPUT F3



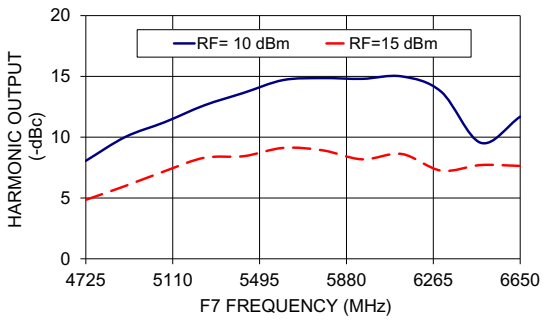
RMK-5-472+
HARMONIC OUTPUT F4



RMK-5-472+
HARMONIC OUTPUT F6



RMK-5-472+
HARMONIC OUTPUT F7



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