

X5 Frequency Multiplier

RMK-5-2751+

50Ω Output 2250 to 2750 MHz

The Big Deal

- High rejection of adjacent harmonics, >57 dBc
- 50 Ω in/out, no tuning necessary
- Very low cost, \$19.95 (qty. 10-49)



CASE STYLE: TT1224

Product Overview

The RMK-5-2751+ is a cost-effective X5 frequency multiplier that utilizes specially selected silicon Schottky diodes and compatible filter circuitry to achieve a low conversion loss, yet have a high rejection of unwanted harmonics near its F5 output. It makes the RMK-5-2751+ ideal for a wide range of applications. The tiny plastic case, 0.25" x 0.31" x 0.16" high, is aqueous washable and RoHS compliant.

Feature	Advantages
<22 dB conversion loss	Efficient choice for multiplying a 500 MHz source to 2.5 GHz output while maintaining useful signal power. Only 17 dBm input required for -5 dBm output, especially useful for low-loss systems such as instrumentation and ISM
>57 dB rejection of F4 and F6	Proprietary internal circuitry achieves high suppression and minimizes filter requirements for undesired signals, as in wireless Rx/Tx applications including amateur radio, SAB/SAP, RFID, wireless LANs, aviation, PMR, cellular, and satellite communications.
Internally balanced to 50Ω in/out, no DC power required	Saves PCB space and simplifies application design, with no external matching or biasing circuits required
Small surface mount package	Easily integrated in systems with minimal PCB area available

Notes

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CASE STYLE: TT1224
PRICE: \$19.95 ea. QTY (10-49)

+RoHS Compliant

The +Suffix identifies 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, 22 dB typ.
- high rejection of adjacent harmonics, 58 dBc typ.
- aqueous washable

Applications

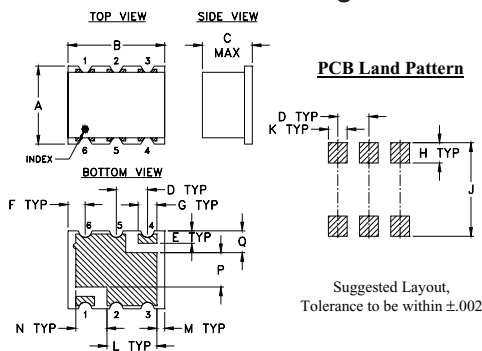
- synthesizers
- local oscillators
- satellite up and down converters

Electrical Specifications at 25°C

Parameter	Min.	Typ.	Max.	Unit
Multiplier Factor		5		
Frequency Range, Input (F1)	450	—	550	MHz
Frequency Range, Output (F5)	2250	—	2750	MHz
Input Power	—	17	—	dBm
Conversion Loss	—	22	24.5	dB
Harmonic Output*, -dBc	F1	3.0	4.8	—
	F2	38	67.8	—
	F3	-7	-3.0	—
	F4	40	54	—
	F6	40	57	—
	F7	4	7	—

* Harmonics of input frequency below the power level of F5

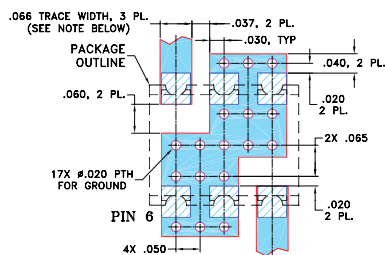
Outline Drawing



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

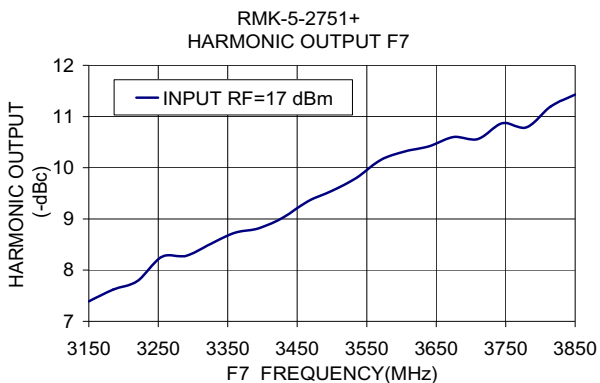
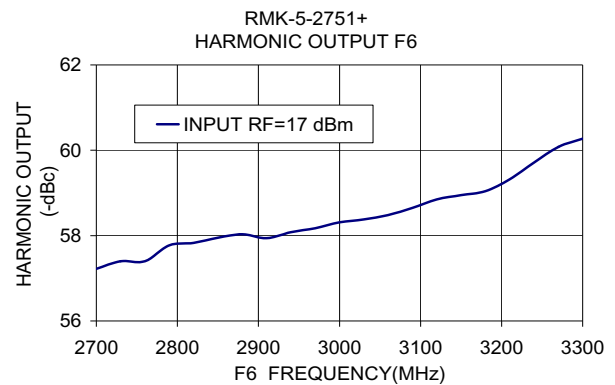
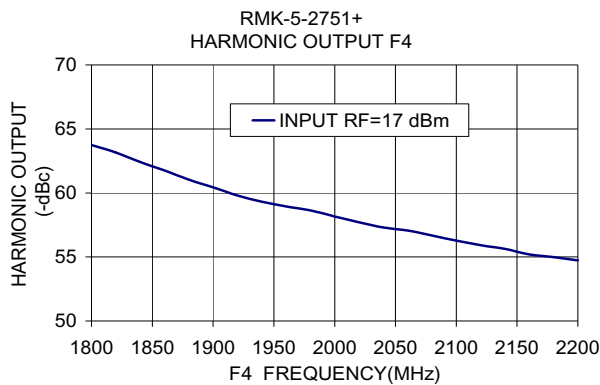
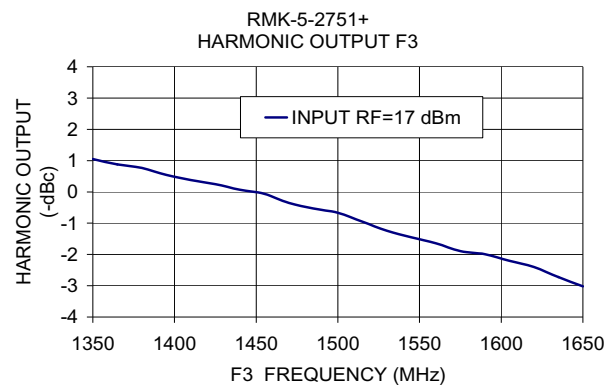
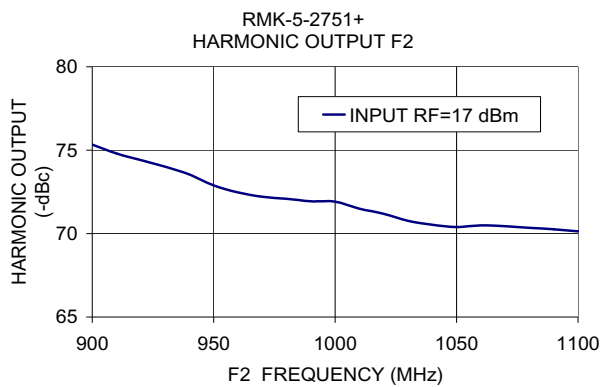
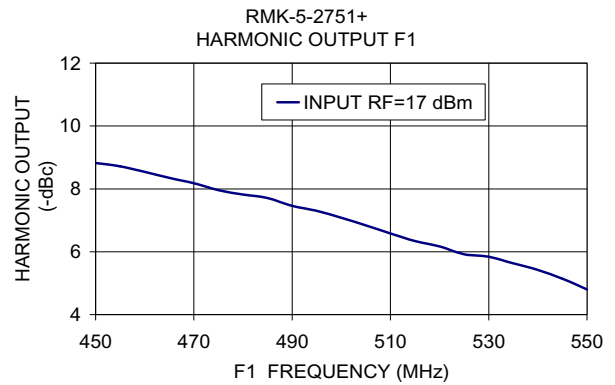
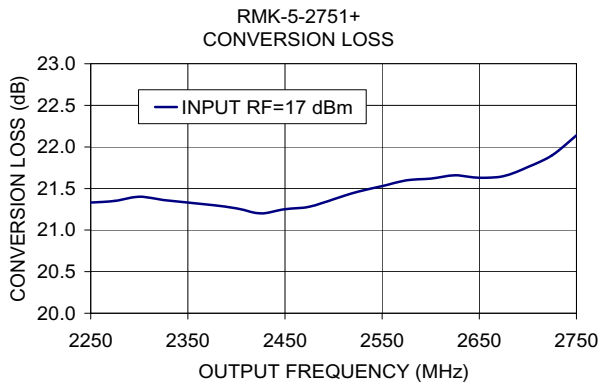
Typical Performance Data

Frequency	Input (MHz)	Output (MHz)	Conv. Loss (dB) F5	Harmonic Rejection Below F5, (dB) at RF Input Power 17 dBm						
				F1	F2	F3	F4	F6	F7	
450.00	2250.00	21.33	8.82	75.33	1.05	63.74	57.22	7.39		
455.00	2275.00	21.35	8.72	74.80	0.88	63.16	57.40	7.62		
460.00	2300.00	21.40	8.54	74.41	0.77	62.42	57.40	7.79		
465.00	2325.00	21.36	8.35	74.01	0.54	61.76	57.77	8.26		
470.00	2350.00	21.33	8.18	73.54	0.38	61.04	57.83	8.28		
475.00	2375.00	21.30	7.96	72.89	0.25	60.45	57.95	8.51		
480.00	2400.00	21.26	7.82	72.47	0.07	59.80	58.03	8.73		
485.00	2425.00	21.20	7.71	72.21	-0.06	59.31	57.94	8.82		
490.00	2450.00	21.25	7.46	72.09	-0.35	58.94	58.08	9.03		
495.00	2475.00	21.28	7.30	71.94	-0.53	58.64	58.17	9.34		
500.00	2500.00	21.37	7.08	71.91	-0.67	58.16	58.31	9.55		
505.00	2525.00	21.46	6.84	71.50	-0.95	57.71	58.38	9.80		
510.00	2550.00	21.53	6.58	71.19	-1.24	57.31	58.48	10.15		
515.00	2575.00	21.60	6.34	70.76	-1.45	57.06	58.65	10.32		
520.00	2600.00	21.62	6.17	70.53	-1.64	56.67	58.85	10.42		
525.00	2625.00	21.66	5.92	70.40	-1.89	56.27	58.95	10.60		
530.00	2650.00	21.63	5.84	70.50	-1.99	55.92	59.04	10.56		
535.00	2675.00	21.65	5.63	70.45	-2.20	55.63	59.32	10.87		
540.00	2700.00	21.76	5.42	70.35	-2.40	55.20	59.71	10.79		
545.00	2725.00	21.90	5.14	70.26	-2.72	54.99	60.08	11.20		
550.00	2750.00	22.14	4.80	70.14	-3.02	54.73	60.27	11.43		

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