

X5 Frequency Multiplier

RMK-5-352+

50Ω Output 2750 to 3500 MHz

The Big Deal

- Low conversion loss, 22 dB
- Excellent harmonic suppression, -40 dBc @ F4 and F6.



CASE STYLE: TT1224

Product Overview

Mini-Circuits' RMK-5-352+ is a surface mount frequency multiplier with a multiplication factor of 5, converting input frequencies from 550 to 700 MHz into output frequencies from 2750 to 3500 MHz. This model is rated for +17 dBm input power and provides low conversion loss and excellent harmonic suppression. The multiplier comes housed in a shielded surface-mount package (0.25 x 0.31 x 0.16") with wraparound terminations for excellent solderability.

Key Features

Feature	Advantages
Low conversion loss, 22 dB typ.	Low conversion loss results in higher output signal power, reducing the need for amplification at later stages.
Excellent harmonic suppression: • F4, 40 dBc • F6, 40 dBc	Reduces spurious signals and the need for additional filtering. Reduces spectral regrowth in multiple-channel systems.
Low cost	Provides an easy, cost-effective solution for generating high-frequency signals from a lower frequency signal source.
Small size, 0.25 x 0.31 x 0.16"	Saves space in dense circuit board layouts

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.
C. The parts covered by this specification document 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



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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, -40 dBc typ.
- aqueous washable

Applications

- synthesizers
- local oscillators
- satellite up and down converters

+RoHS Compliant

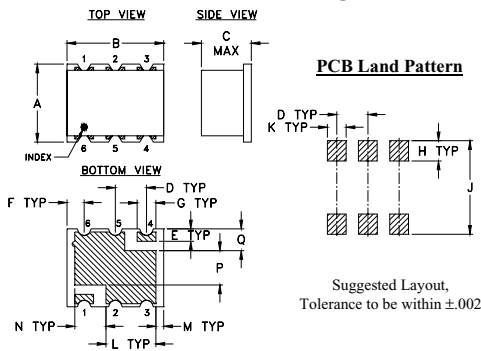
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at 25°C

Parameter	Min.	Typ.	Max.	Unit	
Multiplier Factor		5			
Frequency Range, Input (F1)	550	—	700	MHz	
Frequency Range, Output (F5)	2750	—	3500	MHz	
Input Power	—	17	—	dBm	
Conversion Loss	—	22	24.5	dB	
Harmonic Output*	F1	—	-6.5	-1	dBc
	F2	—	-56	-40	
	F3	—	0	+9.5	
	F4	—	-40	-30	
	F6	—	-40	-30	
	F7	—	-10.5	-4	

* Harmonics of input frequency relative to the power level of F5

Outline Drawing

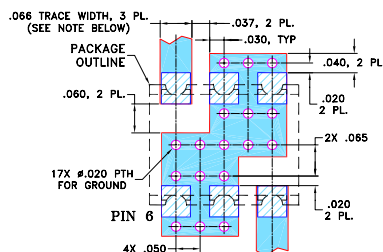


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch)

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

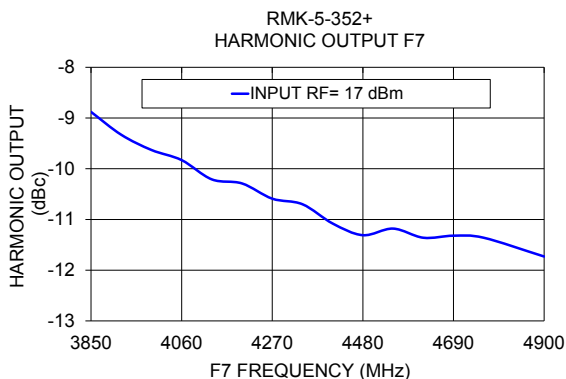
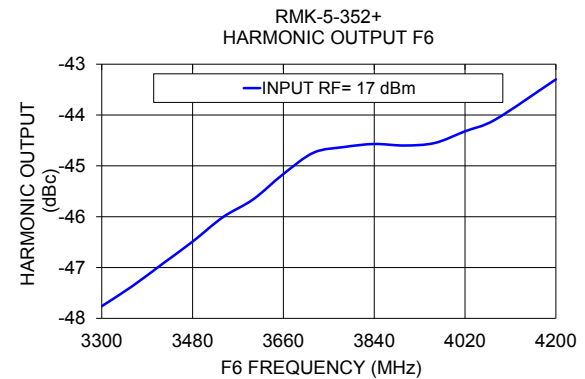
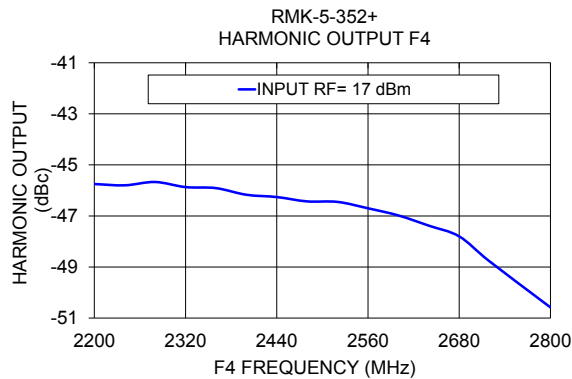
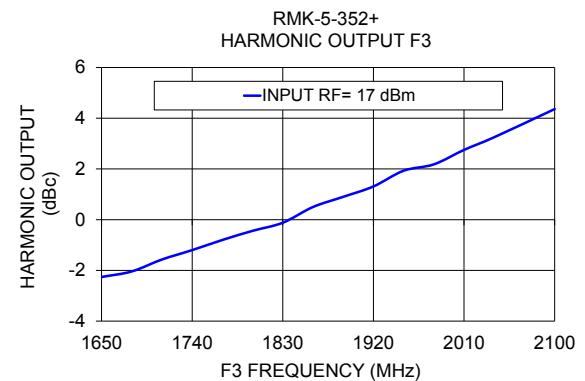
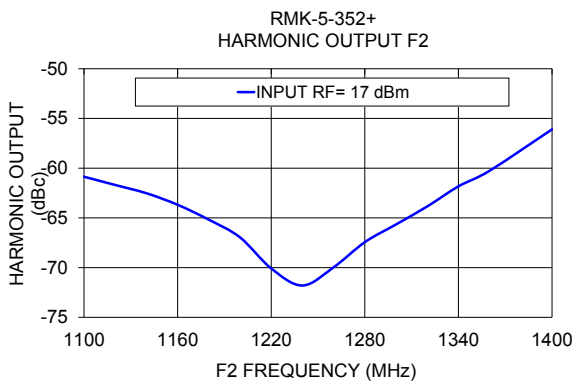
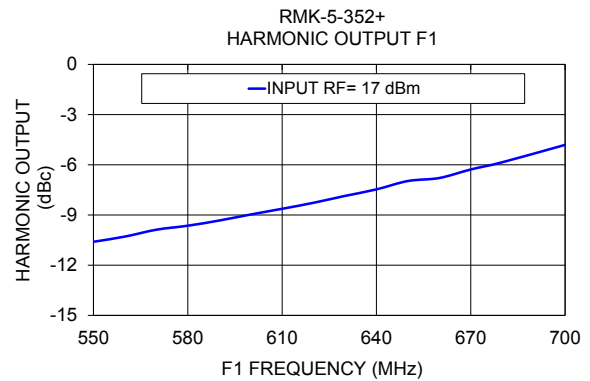
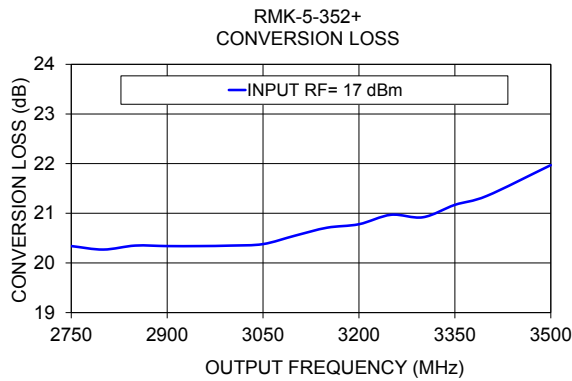
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