



SURFACE MOUNT

X5 Frequency Multiplier

RMK-5-972+

Mini-Circuits

50Ω 8100 to 9750 MHz

KEY FEATURES

- Wideband Output From: 8100 to 9750 MHz
- High Harmonic Suppression:
 - F4: 55 dBc Typ.
 - F6: 52 dBc Typ.
- Input Power: +7 to +11 dBm

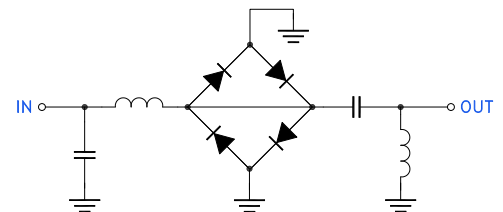


Generic photo used for illustration purposes only

APPLICATIONS

- Synthesizers
- Local Oscillators
- Satellite Up and Down Converters

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' RMK-5-972+ frequency multiplier provides a multiplication factor of 5, converting input frequencies from 1620 to 1950 MHz to output frequencies from 8100 to 9750 MHz, supporting applications such as synthesizers, local oscillators, satellite up and down converters and more. The unit provides an input power range from +7 to +11 dBm, 28.5 dB conversion loss, and good harmonic suppression. The multiplier comes housed in a miniature, surface-mount package (0.25 x 0.31 x 0.16") ideal for dense circuit board layouts.

ELECTRICAL SPECIFICATIONS¹ AT +25°C

Parameter	Input Frequency (MHz)	Min.	Typ.	Max.	Unit
Multiplication Factor			5		
Frequency Range, Input (F1)		1620	-	1950	MHz
Frequency Range, Output (F5)		8100	-	9750	MHz
Input Power		+7	-	+11	dBm
Conversion Loss	1620 - 1950	-	28.5	34	dB
Harmonic Output ²	F1	1620 - 1950	-12	-0.2	-dBc
	F2	1620 - 1950	38	60	
	F3	1620 - 1950	-15	-5.5	
	F4	1620 - 1950	38	55	
	F6	1620 - 1950	30	52	
	F7	1620 - 1950	-5	8	

1. Measured on Mini-Circuits Characterization Test Board TB-RMK-5-972+.

2. Harmonics of input frequency below the power level of F5.

ABSOLUTE MAXIMUM RATINGS³

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input RF Power	+13 dBm

3. Permanent damage may occur if any of these limits are exceeded.

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REV. OR
ECO-021500
RMK-5-972+
MCL NY
240417

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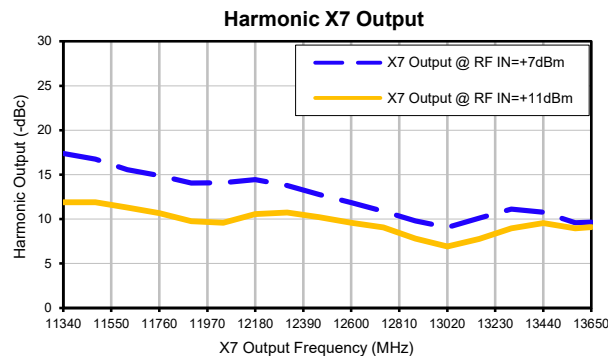
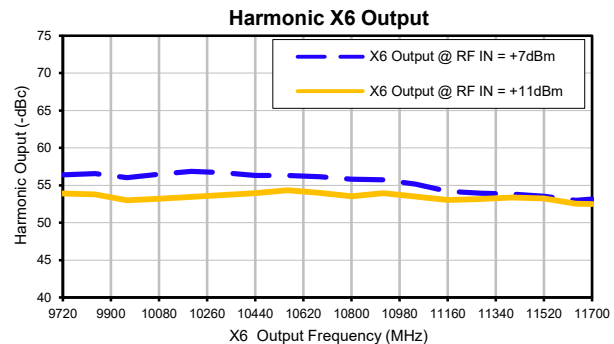
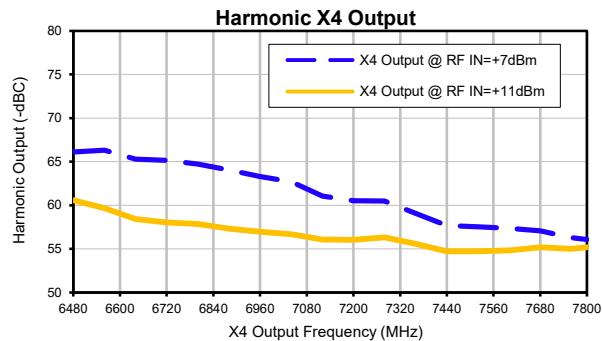
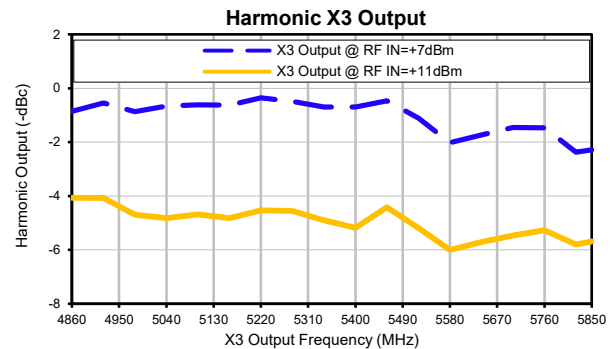
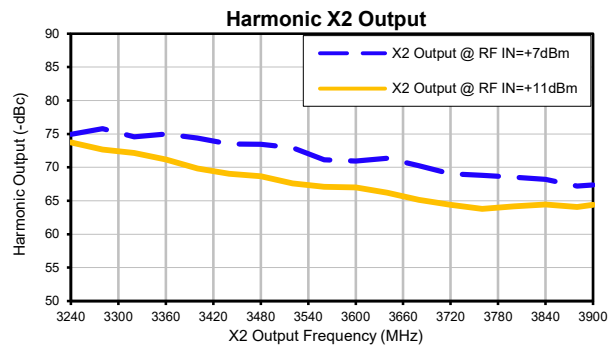
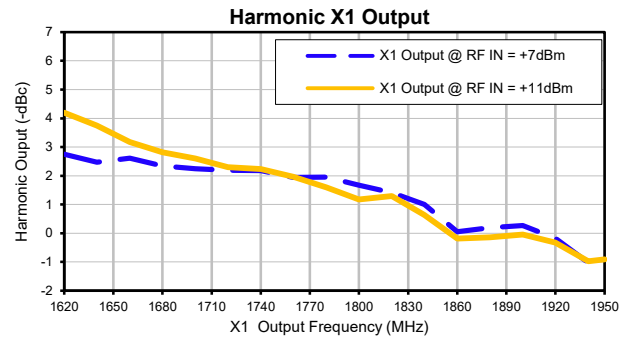
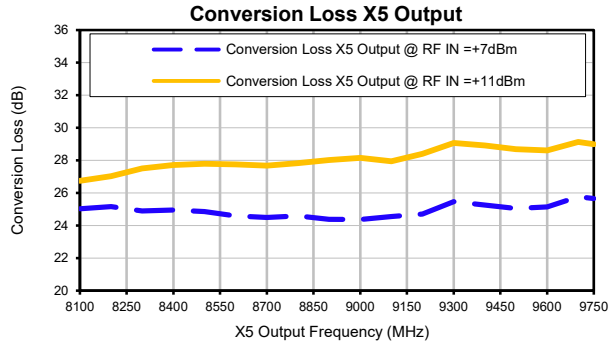
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TYPICAL PERFORMANCE GRAPHS



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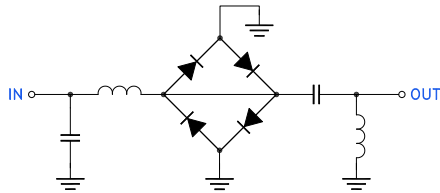
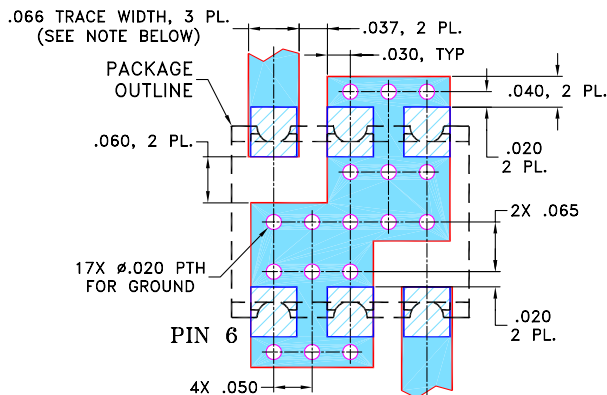


Figure 1. RMK-5-972+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF-IN	1	Connects to RF Input Port
RF-OUT	4	Connects to RF Output Port
GROUND	2, 3, 5, 6	Connects to Ground on PCB, (See drawing PL-258)

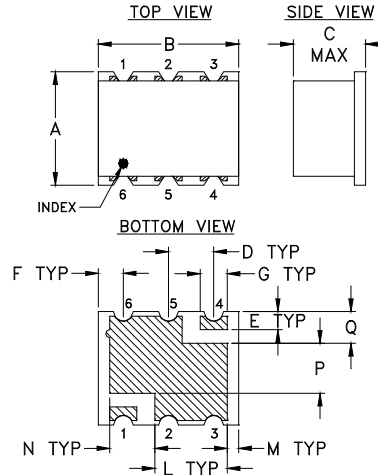
SUGGESTED PCB LAYOUT (PL-258)



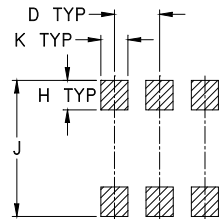
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout PL-258

CASE STYLE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within .002

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

*PRODUCT MARKING: RMK-5-972+

*Marking may contain other features or characters for internal lot control



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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASH BOARD.

[CLICK HERE](#)

Performance Data & Graphs	Data Graphs
Case Style	TT1224 Lead Finish: Gold over Nickel Plate
RoHS Status	Compliant
Tape and Reel	TR-F2
Suggested Layout for PCB Design	PL-258
Evaluation Board	TB-RMK-5-972+
	Gerber File
Environmental Rating	ENV02T1



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