

+5 to +30 dBm

# Limiter

50Ω Broadband 100 to 2500 MHz

## RLM-23-1WL+



CASE STYLE: CK1246-1

**+RoHS Compliant**

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

### Maximum Ratings

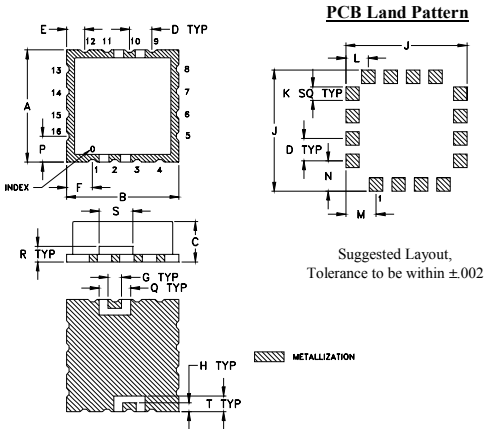
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	1.5W

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

### Pin Connections

INPUT	2
OUTPUT	10
GROUND	all others

### Outline Drawing



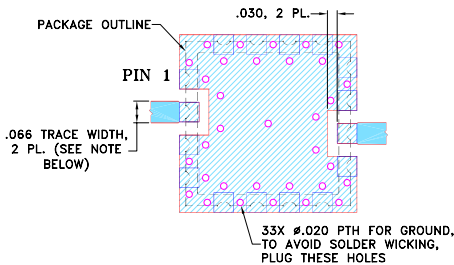
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72	1.52

L	M	N	P	Q	R	S	T	wt.
.100	.135	.135	.115	.140	.070	.150	.070	grams
2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0

### Demo Board MCL P/N: TB-613+ Suggested PCB Layout (PL-343)



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

#### 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](http://www.minicircuits.com/MCLStore/terms.jsp)

### Features

- low insertion loss, 0.7 dB typ.
- very low output power 0 dBm typ. at 30 dBm input
- low cost
- aqueous washable

### Applications

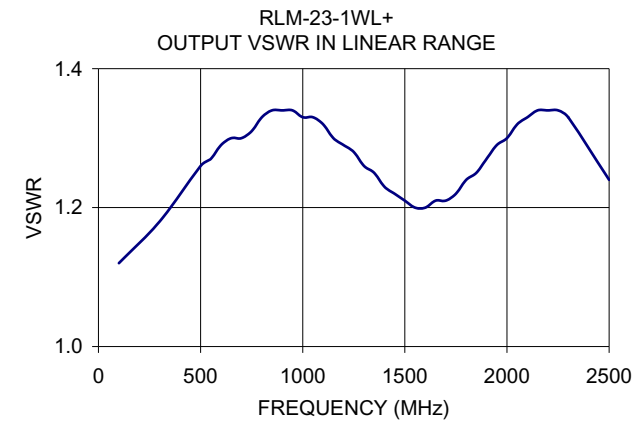
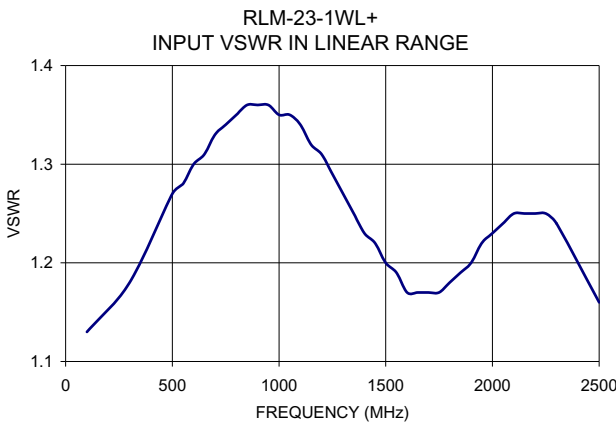
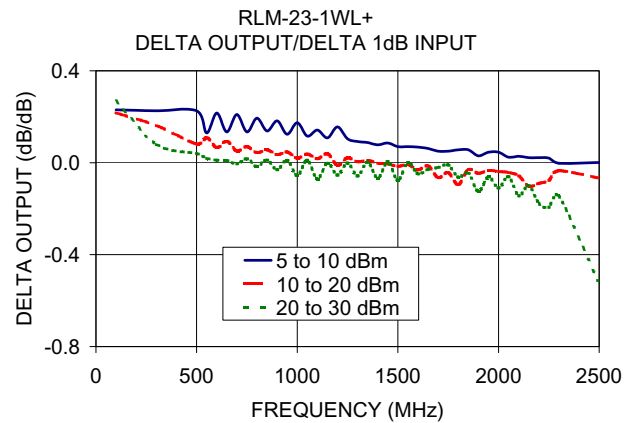
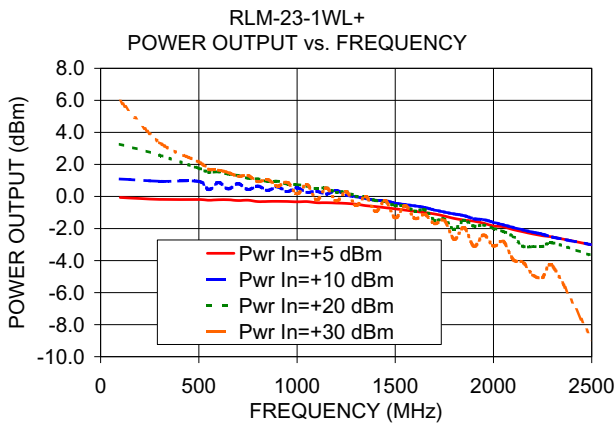
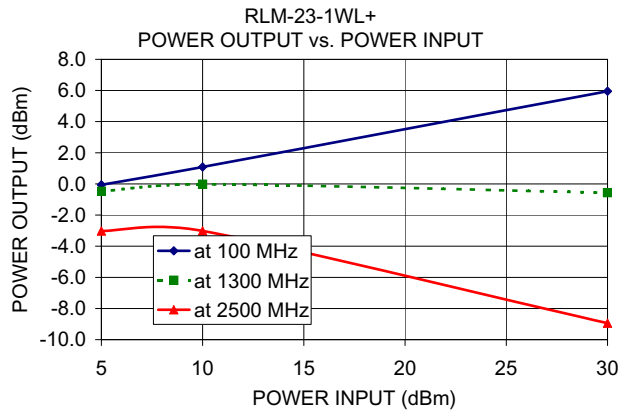
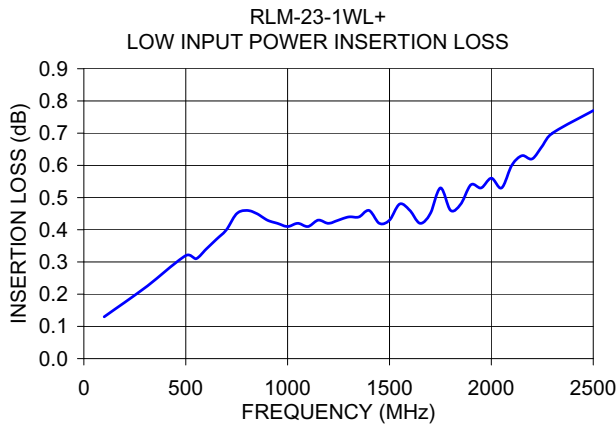
- military, hi-rel applications
- stabilizing generator outputs
- reducing amplitude variations
- protects low noise amplifiers and other devices from ESD or input power damage

### Electrical Specifications

Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		100	—	2500	MHz
<b>Linear Range</b>					
Max Input Power	less than 0.1 dB compression	—	—	-10	dBm
Insertion Loss	less than -10 dBm input power	—	0.7	1.3	dB
VSWR	less than -10 dBm input power	—	1.35	1.6	:1
<b>Limiting Range</b>					
Input Power	>1dB compression filtered signal frequency	+5	—	+30	dBm
Output Power		—	0	—	dBm
Δ Output/ Δ 1dB Input	Input Power Range (dBm)				
	5 to 10	—	0.1	—	
	10 to 20	—	0.05	—	
	20 to 30	—	0.1	—	dB/dB
Recovery Time	1 watt pulse 50 μsec pw 1kHz duty cycle recovery to within 90% of final value.	—	8	—	nsec
Response Time	-30 to +30 dBm input 50 μsec PW 1 kHz duty cycle	—	2	—	nsec

### Typical Performance Data

Freq. (MHz)	I. Loss (dB) in Linear Range at -10 dBm	VSWR (:1) in Linear Range at -10 dBm	Power Output (dBm)				Δ Output / Δ 1dB Input		
			+5 dBm Input	+10 dBm Input	+20 dBm Input	+30dBm Input	+5 to +10 dBm Input	+10 to +20 dBm Input	+20 to +30 dBm Input
100.00	0.13	1.13	-0.06	1.09	3.26	5.95	0.23	0.22	0.27
300.00	0.22	1.18	-0.18	0.95	2.57	3.37	0.23	0.16	0.08
500.00	0.32	1.27	-0.19	0.94	1.76	2.16	0.23	0.08	0.04
700.00	0.40	1.33	-0.25	0.80	1.31	1.26	0.21	0.05	-0.01
900.00	0.43	1.36	-0.30	0.61	0.96	0.65	0.18	0.04	-0.03
1000.00	0.41	1.35	-0.33	0.54	0.74	0.17	0.17	0.02	-0.06
1200.00	0.42	1.31	-0.41	0.37	0.26	-0.28	0.16	-0.01	-0.05
1300.00	0.44	1.27	-0.48	-0.02	0.02	-0.56	0.09	0.00	-0.06
1500.00	0.43	1.20	-0.77	-0.42	-0.58	-1.34	0.07	-0.02	-0.08
1700.00	0.45	1.17	-1.09	-0.84	-1.49	-1.70	0.05	-0.07	-0.02
1900.00	0.54	1.20	-1.54	-1.39	-1.85	-3.11	0.03	-0.05	-0.13
2000.00	0.56	1.23	-1.84	-1.61	-1.99	-3.09	0.05	-0.04	-0.11
2200.00	0.62	1.25	-2.34	-2.23	-3.13	-4.89	0.02	-0.09	-0.18
2300.00	0.70	1.24	-2.53	-2.54	-2.89	-4.34	0.00	-0.04	-0.15
2500.00	0.77	1.16	-3.02	-3.02	-3.69	-8.94	0.00	-0.07	-0.53



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