+5 to +33 dBm

Limiter

RLM-751-2WL+

50Ω Broadband 3 to 750 MHz

CASE STYLE: TT1224

The Big Deal

- Wideband, 3 to 750 MHz
- Low Insertion Loss, 0.20dB typical
- Fast Recovery Time, 4nSec
- Excellent VSWR 1.13:1 typical
- Low leakage power, 8dBm typical

Product Overview

RLM-751-2W+ constitutes a very reliable limiting component. It exhibits typical output leakage powers of 7.2dBm at 30 and 32dBm input powers throughout the 3 to 750 frequency range. It also presents an excellent delta output power versus the delta input power of 0.3dB/dB typical, within its input power limiting range of 12 to 32dBm. It's low insertion loss combined with the excellent return loss, recovery and response time features, makes this component suitable for many applications.

Key Features

Feature	Advantages
Diode Limiting	The special combination of diode technologies allows for fast response and recovery times at the same time as low leakage output powers are obtained
Broad band	Its operational frequency range is suitable for many military and civil applications.
Input & Output matched	Allows for an easy and power efficient integration of the component when it is placed in a cascaded fashion within a complex system.
Low Insertion Loss of 0.20 dB typical at the low drive regime.	Minimizes the impact on the overall system's insertion loss for low drive signals.

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Generic photo used for illustration purposes only

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+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	3W

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

Pin Connections

INPUT	1
OUTPUT	4
GROUND	2,3,5,6

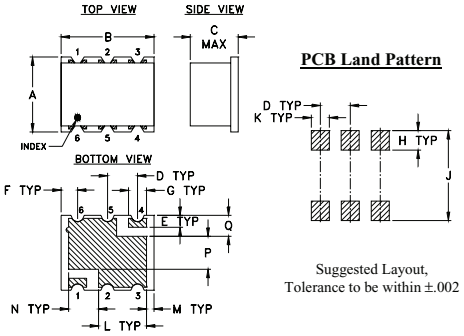
Features

- wideband, 3 to 750 MHz
- low insertion loss 0.20 dB typ.
- fast recovery time, 4nsec typ.
- excellent VSWR 1.13:1 typ.
- low output power, 8.0 dBm typ.

Applications

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

Outline Drawing



Outline Dimensions (inch / mm)

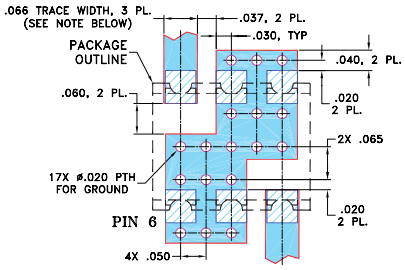
A	B	C	D	E	F	G	H
.25	.31	.16	.100	.040	.055	.060	.065
6.35	7.87	4.06	2.54	1.02	1.40	1.52	1.65

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

Electrical Specifications

Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		3		750	MHz
Linear Range					
Max Input Power	less than 0.1 dB compression	—	—	-10	dBm
Insertion Loss	less than -10 dBm input power	—	0.20	0.9	dB
VSWR	less than -10 dBm input power	—	1.13	1.6	:1
Limiting Range					
Input Power	>1dB compression filtered signal frequency	+5	—	+33	dBm
Output Power		—	+8.0	—	dBm
Δ Output/ Δ 1dB Input	Input Power Range (dBm)				
	5 to 12	—	0.3	—	dB/dB
	12 to 20	—	0.3	—	
	20 to 25	—	0.3	—	
	25 to 30	—	0.13	—	
	30 to 33	—	0.05	—	
Recovery Time	1 watt pulse 50 µsec PW 1kHz duty cycle recovery to within 90% of final value.	—	4	—	nsec
Response Time	-30 to +30 dBm input 50 µsec PW 1 kHz duty cycle	—	7.2	—	nsec

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

Freq. (MHz)	I. Loss (dB) in Linear Range	VSWR (:1) in Linear Range	Power Output (dBm)						Δ Output / Δ 1dB Input				
	at -10 dBm	at -10 dBm	+5 dBm Input	+12 dBm Input	+20 dBm Input	+25 dBm Input	+30 dBm Input	+33 dBm Input	+5 to +12 dBm Input	+12 to +20 dBm Input	+20 to +25 dBm Input	+25 to +30 dBm Input	+30 to +33 dBm Input
4.00	0.10	1.22	-0.25	1.90	4.00	5.77	7.51	9.38	0.31	0.26	0.35	0.35	0.62
100.00	0.08	1.05	0.52	1.92	4.22	6.08	7.41	8.99	0.20	0.29	0.37	0.27	0.53
150.00	0.10	1.06	0.53	2.09	4.34	6.12	7.27	8.19	0.22	0.28	0.36	0.23	0.31
200.00	0.13	1.08	0.5	2.45	4.78	7.04	7.19	8.58	0.28	0.29	0.45	0.03	0.46
250.00	0.15	1.10	0.48	1.96	4.04	6.08	7.69	7.84	0.21	0.26	0.41	0.32	0.05
300.00	0.18	1.13	0.52	2.29	4.65	6.43	7.04	7.30	0.25	0.30	0.36	0.12	0.09
400.00	0.22	1.18	0.46	2.10	4.41	5.70	6.32	6.49	0.23	0.29	0.26	0.12	0.06
500.00	0.26	1.23	0.45	1.93	4.41	5.17	5.94	6.65	0.21	0.31	0.15	0.15	0.24
600.00	0.31	1.28	0.37	1.76	4.41	4.68	7.57	8.65	0.20	0.33	0.05	0.58	0.36
700.00	0.36	1.33	0.37	1.71	4.17	4.36	5.10	5.57	0.19	0.31	0.04	0.15	0.16
760.00	0.39	1.37	0.36	1.72	3.83	3.98	8.40	8.86	0.19	0.26	0.03	0.88	0.15

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