+10 to +37 dBm _imiter

RLM-43-5W+

Broadband 20 to 4000 MHz 50Ω



The Big Deal

- Broadband, 20 MHz to 4 GHz
- Low output power leakage, +12 dBm
- Excellent limiting range,+10 to +37 dBm
- 0.3 dB Δ output / 1 dB Δ input

Product Overview

Mini-Circuits' RLM-43-5W+ is a passive PIN diode RF limiter ideal for protecting sensitive receiver circuitry from high-power signals, while allowing low-powered signals to be received.

Providing limiting range from +10 to +37 dBm and +12 dBm typical output power, the RLM-43-5W+ is ideal for many situations where unwanted signals prevail such as manufacturing sites, train tunnels, radar transceivers and more. The limiter is housed in a durable, surface mount plastic enclosure measuring 0.25 x 0.31 x 0.16", accommodating tight PCB layouts.

Feature **Advantages** Wideband operation, from 20 to 4000 Ideal for a variety of applications where there is a need to protect sensitive receiver circuitry from MHz unwanted signals as well as control ESD and power surges on the network. Excellent limiting range from Prevents undesired signals from passing through the network and damaging sensitive electronic +10 to +37dBm components. Low delta output per 1 dB delta input maintains signal stability in the presence of volatile input 0.3 dB Δ output / 1 dB Δ input signal conditions. Minimal downtime after unwanted signals are removed with very quick restoration of standard Rapid recovery, 33ns operating levels. Preserves the strength of low-power signals in the receive path. Low loss insertion, 0.36 dB Low output power prevents saturation of receiver circuitry and provides extra protection for low-output power loss, +12 dBm sensitive components.

Key Features

Notes
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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.
G. The parts covered by this specification document are subject to Mini-Circuit shandard 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp



+10 to +37 dBm Limiter

Broadband 20 to 4000 MHz **50**Ω

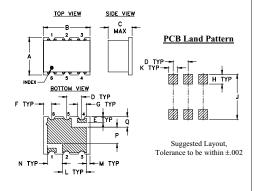
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	5W
Permanent damage may occur if any o	of these limits are exceeded.

Pin Connections

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

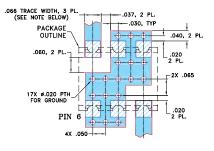
Outline Drawing



Outline Dimensions (inch)

Α	В	С	D	Е	F	G	н
.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	к	L	М	Ν	Р	Q	wt.
							wt. grams

Demo Board MCL P/N: TB-393 Suggested PCB Layout (PL-258)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 02. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE WOOFIED. 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE. DENOTES PCB COPPER LAYOUT WITH SWOBC (SOLDER WASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK E ///

Features

- wideband, 20 to 4000 MHz
- low insertion loss 0.36 dB typ. • fast recovery time, 33nsec typ.
- excellent VSWR 1.2:1 typ.
- low output power, 12 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



RLM-43-5W+

Generic photo used for illustration purposes only CASE STYLE: TT1224

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

Electrical Specifications

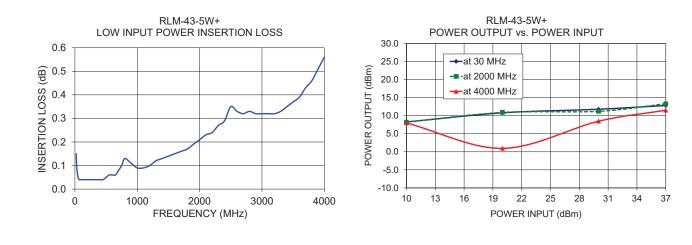
Parameter	Condition	Min.	Тур.	Max.	Units
Frequency Range		20		4000	MHz
Linear Range					
Max Input Power	less than 1 dB compression	_	5	—	dBm
Insertion Loss	less than +5 dBm input power	-	0.36	0.85	dB
VSWR	less than +5 dBm input power	_	1.2	1.58	:1
Limiting Range					
Input Power	>1dB compression filtered signal frequency	+10	_	+37	dBm
Output Power		-	+12	-	dBm
∆ Output/ ∆ 1dB Input	Input Power Range (dBm) 10 to 20	_	0.3	_	
	20 to 30 30 to 37	_	0.1 0.1	_	dB/dB
Recovery Time	2 watt pulse 50 µsec pw 1kHz duty cycle recovery to within 90% of final value @ -5 dBm	_	33	—	nsec
Response Time	-30 to +33 dBm input 50 µsec PW 1 kHz duty cycle	_	21	_	nsec

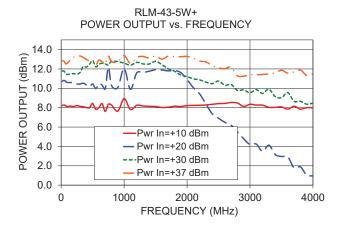
Typical Performance Data									
Freq. I. Loss (dB) (MHz) in Linear Range at-10 dBm	VSWR (:1) in Linear	Power Output (dBm)			Δ Output / Δ 1dB Input				
		Range	+10 dBm Input	+20 dBm Input	+30 dBm Input	+37 dBm Input	+10 to +20 dBm Input	+20 to +30 dBm Input	+30 to +37 dBm Input
20.00	0.15	1.36	8.22	10.72	11.78	12.86	0.25	0.11	0.15
50.00	0.05	1.13	8.27	10.81	11.75	12.76	0.25	0.09	0.14
90.00	0.04	1.06	8.12	10.61	11.44	12.55	0.25	0.08	0.16
200.00	0.04	1.03	8.13	10.57	11.52	13.21	0.24	0.09	0.24
500.00	0.05	1.02	8.44	10.44	12.86	12.94	0.20	0.24	0.01
1000.00	0.09	1.02	8.94	12.06	12.60	13.38	0.31	0.05	0.11
1200.00	0.10	1.04	8.25	11.59	12.68	13.19	0.33	0.11	0.07
1400.00	0.13	1.06	8.14	11.77	12.51	13.13	0.36	0.07	0.09
1600.00	0.15	1.10	8.02	11.89	12.45	13.01	0.39	0.06	0.08
2000.00	0.21	1.24	8.22	10.90	11.21	13.29	0.27	0.03	0.30
2500.00	0.35	1.39	8.42	6.91	10.75	12.12	-0.15	0.38	0.20
3000.00	0.32	1.33	8.35	4.20	9.54	11.41	-0.42	0.53	0.27
3500.00	0.37	1.17	8.08	2.96	9.03	11.87	-0.51	0.61	0.41
3800.00	0.46	1.26	7.85	1.89	8.66	11.89	-0.60	0.68	0.46
4000.00	0.56	1.36	7.99	0.95	8.47	11.51	-0.70	0.75	0.43

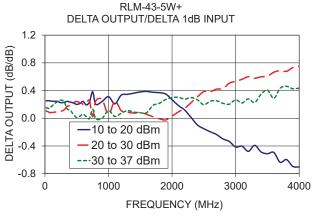
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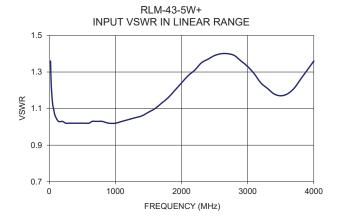
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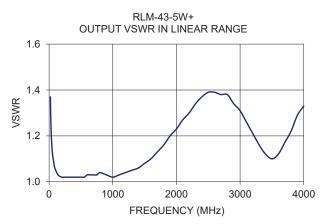












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