

# Coaxial Limiter

## ZFLM-43-5W+

50Ω Broadband 20 to 4000 MHz

### The Big Deal

- Wideband, 20 to 4000 MHz
- Wide limiting range, +10 to +37 dBm
- Low output power leakage, +12 dBm
- Fast recovery time, 33ns typ.



CASE STYLE: H16

### Product Overview

Mini-Circuits' ZFLM-43-5W+ is a coaxial RF limiter ideal for protecting sensitive receiver circuitry from high-power signals, while allowing low-scattered signals to be received. Providing input limiting range from +10 to +37 dBm and +12 dBm output power, this model is suitable for many situations where unwanted signals prevail such as manufacturing sites, train tunnels, radar transceivers and more. The unit comes housed in a rugged, aluminum alloy case (1.25" x 1.25 x 0.75") with SMA connectors.

### Key Features

Feature	Advantages
Wideband, from 20 to 4000 MHz	Ideal for a variety of applications requiring protection of sensitive receiver circuitry from unwanted signals, ESD and power surges on the network.
Wide limiting range from +10 to +37 dBm	Prevents a wide range of high input signal levels from passing through the network and damaging sensitive electronic components.
Low $\Delta$ output / 1 dB $\Delta$ input <ul style="list-style-type: none"><li>• 0.3 dB, +10 to +20 dBm input range</li><li>• 0.1 dB, +20 to +37 dBm input range</li></ul>	Low delta output per 1 dB delta input maintains signal stability in the presence of volatile input signal conditions.
Rapid recovery, 33ns	Minimal downtime after unwanted signals are removed with very quick restoration of standard operating levels.
Low insertion loss, 0.36 dB	Preserves the strength of low-power signals in the receive path.
Low-output power, +12 dBm	Low output power prevents saturation of receiver circuitry and provides extra protection for sensitive components.

#### 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)



# Limiter

50Ω Broadband 20 to 4000 MHz

## Maximum Ratings

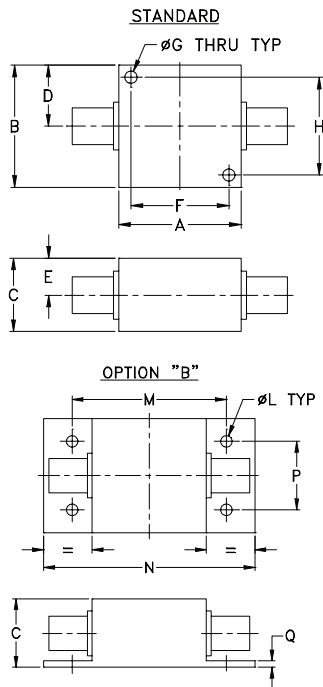
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	5W

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

## Coaxial Connections

INPUT	SMA female
OUTPUT	SMA male

## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.000	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40

J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.750	.06	grams
--	--	3.18	42.88	55.37	19.05	1.52	70.0

## 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

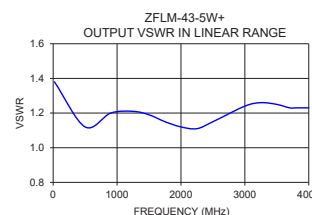
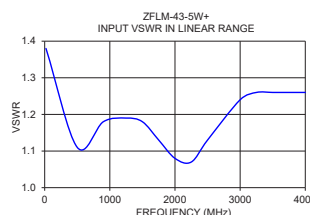
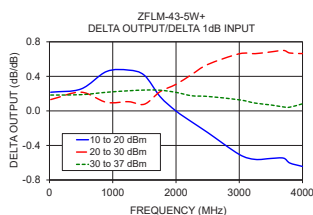
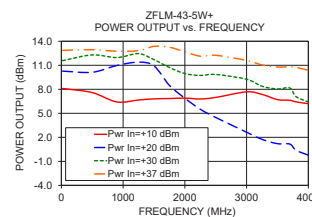
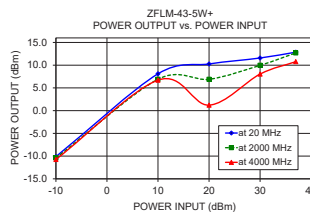
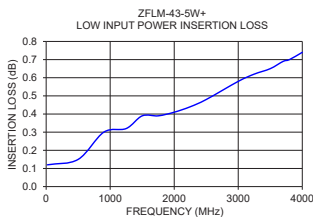
- military, hi-rel applications
- stabilizing generator outputs
- reducing amplitude variations
- protects low noise amplifiers and other devices from ESD or input power damage

## Electrical Specifications

Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		20	—	4000	MHz
<b>Linear Range</b>					
Max Input Power	<0.1 dB compression	—	5	—	dBm
Insertion Loss	<-10 dBm	—	0.5	1.2	dB
VSWR	<-10 dBm	—	1.3	1.80	:1
<b>Limiting Range</b>					
Input Power	>1dB compression filtered signal frequency	+10	—	+37	dBm
Output Power		—	+13	—	dBm
Δ Output/1dB Δ Input	Input Power Range (dBm)				
	10 to 20	—	0.3	—	
	20 to 30	—	0.1	—	dB/dB
	30 to 37	—	0.1	—	
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. (MHz)	I. Loss in Linear Range (dB)	VSWR in Linear Range (:1)	Power Output (dBm)				Δ Output / 1dB Δ Input		
			+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	0.12	1.38	8.11	10.27	11.58	12.87	0.22	0.13	0.18
500	0.15	1.11	7.59	10.13	12.30	12.94	0.25	0.22	0.09
900	0.30	1.18	6.42	10.98	11.97	12.76	0.46	0.10	0.11
1250	0.32	1.19	6.67	11.39	12.46	12.83	0.47	0.11	0.05
1500	0.39	1.18	6.80	10.93	11.70	13.36	0.41	0.08	0.24
1750	0.39	1.13	6.85	8.49	10.72	13.25	0.16	0.22	0.36
2000	0.41	1.08	6.90	6.89	9.97	12.69	0.00	0.31	0.39
2250	0.44	1.07	6.79	5.51	9.73	12.13	-0.13	0.42	0.34
2500	0.48	1.13	6.98	4.48	9.85	12.25	-0.25	0.54	0.34
3000	0.58	1.24	7.68	2.64	9.26	11.60	-0.50	0.66	0.34
3250	0.62	1.26	7.36	1.75	8.38	11.05	-0.56	0.66	0.38
3500	0.65	1.26	6.72	1.21	8.04	10.78	-0.55	0.68	0.39
3700	0.69	1.26	6.63	1.16	8.16	10.81	-0.55	0.70	0.38
3800	0.70	1.26	6.43	0.39	7.09	10.75	-0.60	0.67	0.52
4000	0.74	1.26	6.21	-0.23	6.41	10.37	-0.64	0.66	0.57



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# ZFLM-43-5W+



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CASE STYLE: H16

Connectors	Model
SMA	ZFLM-43-5W+

+RoHS Compliant

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