+12 to +32dBm

Limiter

VLM-83-2W-S+

50Ω Broadband 30 to 8200 MHz

Generic photo used for illustration purposes only

CASE STYLE: FF704

The Big Deal

- Ultra wide frequency range, 30 MHz to 8.2 GHz
- High CW input power, +32 dBm
- Fast recovery time, 10 nsec typ.

Product Overview

The VLM-83-2W-S+ protects against ESD and input RF power surges, up to 1.6 W, across a very wide frequency range. These units are rugged unibody enclosure (1.43" x 0.410") specifically designed to function in tough environments such as manufacturing sites, train tunnels, ECM & ECCM, or anywhere sensitive components, such as low noise amplifiers, need protection.

Key Features

Feature	Advantages
Limiting abilities from +12 to +32 dBm	Protects against very strong undesired signals to help prevent burn out of amplifiers and other highly sensitive components
Ultra wideband, 30 MHz to 8.2 GHz	Protects against many different types of unwanted signals.
Response time 2 nsec	Reacts almost instantaneously to limit unwanted high level signals
Recovery time 8 nsec	Minimal downtime after unwanted signals are removed, with very quick restoration of standard operating levels
Low insertion loss and VSWR	Provides minimal degradation to system performance, especially low noise amplifiers where input loss is critical

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Connectors	Model
SMA	VLM-83-2W-S+

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	2W

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

Coaxial Connections*

PORT - 1	SMA FEMALE
PORT - 2	SMA MALE

*Suggested Connections. For reverse connections, consult Mini-Circuits.

Features

- Wideband, 30 to 8200 MHz
- Low insertion loss 1 dB typ.
- Fast recovery time, 10nsec typ.
- Low output power, 11.5 dBm typ.

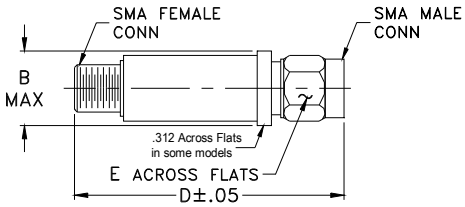
Applications

- Military, hi-rel applications
- Stabilizing generator outputs
- Reducing amplitude variations
- Protects low noise amplifiers and other devices from ESD or input power damage

+RoHS Compliant

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

Outline Drawing



Outline Dimensions (inch / mm)

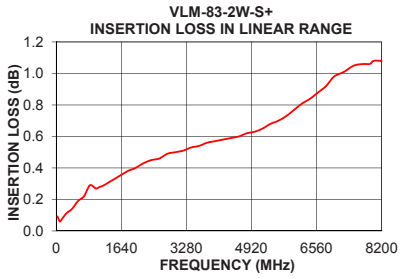
B	D	E	wt
.410	1.43	.312	grams
10.41	36.32	7.92	10.0

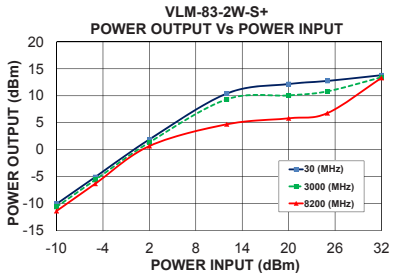
Electrical Specifications at 25°C

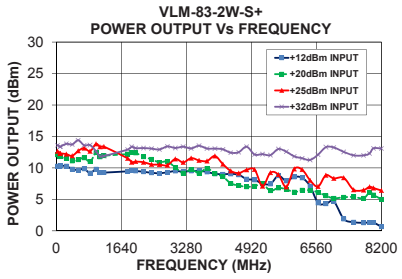
Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		30		8200	MHz
Max input power in Linear Range	< 0.1 dB compression	—	—	2.0	dBm
Insertion Loss in Linear Range	<+2 dBm Input power	—	1.0	2.3	dB
VSWR	<+2 dBm Input power	—	1.5	—	:1
Input Power Limiting Range	>1dB compression filtered signal frequency	+12	—	+32	dBm
Output Power Limiting Range	>1dB compression filtered signal frequency	—	+11.5	—	dBm
Recovery Time	1 watt pulse 50 µsec PW, 1kHz duty cycle, recovery to within 90% of final value.	—	10	—	nsec
Response Time	+30 dBm input, 50 µsec, PW 1 kHz duty cycle	—	2	—	nsec
Limiting Δ Output/1dB Δ Input	Input Power Range (dBm) 12 to 20 20 to 25 25 to 32	 — — —	 0.4 0.2 0.8	 — — —	dB/dB

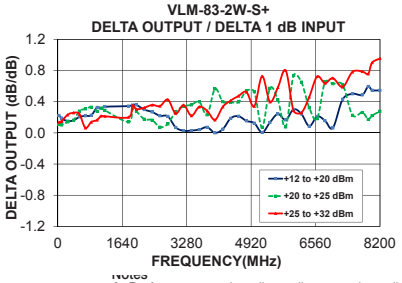
Typical Performance Data

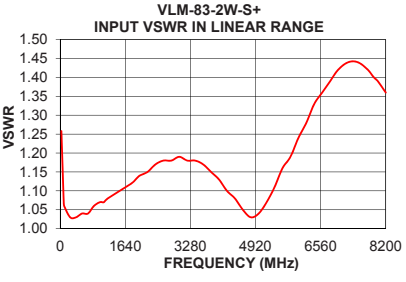
Freq. (MHz)	I. Loss in Linear Range (dB)	VSWR in Linear Range (:1)	Power Output (dBm) +12dBm Input	Power Output (dBm) +20dBm Input	Power Output (dBm) +25 dBm Input	Power Output (dBm) +32dBm Input	Δ Output 1dB Δ Input +12 to +20dBm Input	Δ Output 1dB Δ Input +20 to +25 dBm Input	Δ Output 1dB Δ Input +25 to +32 dBm Input
30	0.09	1.26	10.29	12.08	12.64	13.60	0.22	0.11	0.14
100	0.06	1.06	10.33	11.79	12.31	13.36	0.18	0.10	0.15
550	0.19	1.04	9.67	11.31	12.71	14.40	0.21	0.28	0.24
700	0.22	1.04	9.86	11.61	13.15	13.60	0.22	0.31	0.06
1200	0.29	1.08	9.26	11.94	13.38	11.89	0.34	0.29	0.21
1800	0.38	1.12	9.46	12.21	11.51	12.92	0.34	0.14	0.20
2000	0.40	1.14	9.52	12.39	11.01	13.14	0.36	0.28	0.30
3000	0.50	1.19	9.51	10.07	11.43	13.17	0.07	0.27	0.25
4000	0.57	1.13	9.07	9.08	11.90	13.07	0.00	0.56	0.17
4400	0.59	1.08	9.05	7.55	9.52	12.42	0.19	0.39	0.41
5000	0.63	1.04	8.10	7.10	9.74	12.13	0.13	0.53	0.34
5600	0.70	1.16	8.76	6.82	8.94	13.01	0.24	0.42	0.58
6000	0.77	1.24	8.57	6.16	9.84	11.84	0.30	0.74	0.29
7000	0.98	1.42	4.67	5.18	8.33	13.25	0.06	0.63	0.70
8200	1.08	1.36	0.65	5.02	6.41	13.09	0.55	0.28	0.95

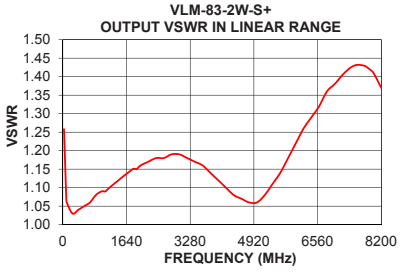












NOTES

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