

+9 to +32 dBm

# Limiter

# RLM-521-2WL+

50Ω Broadband 0.5 to 520 MHz

## Maximum Ratings

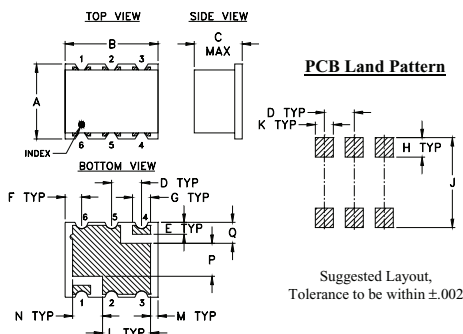
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	2W

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

## Pin Connections

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

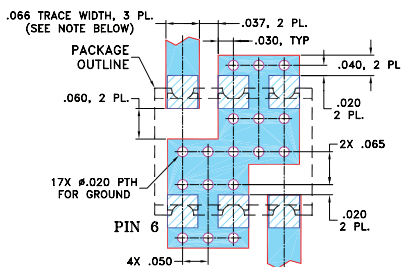
## Outline Drawing



## 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

## 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

### 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

- wideband, 0.5 to 520 MHz
- low insertion loss 0.2 dB typ.
- fast recovery time, 3.7 nsec typ.
- excellent VSWR 1.2:1 typ.
- low output power, 7 dBm typ.
- 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



CASE STYLE: TT1224  
PRICE: \$16.95 ea. QTY (10-49)

### +RoHS Compliant

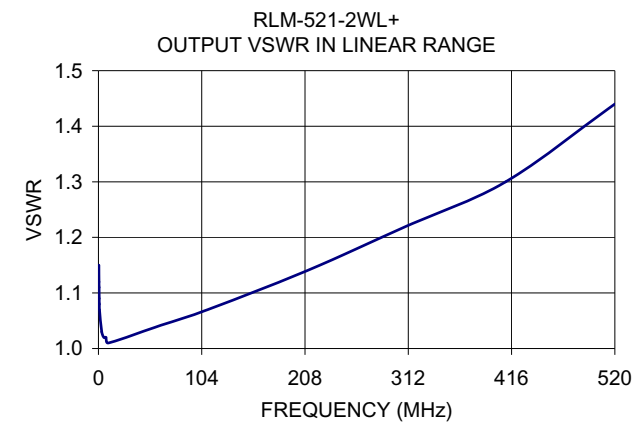
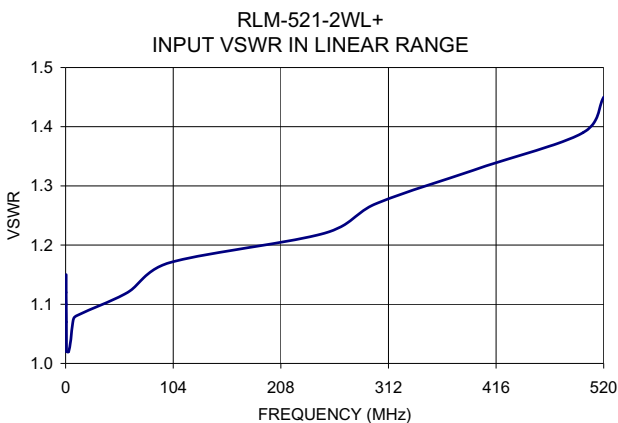
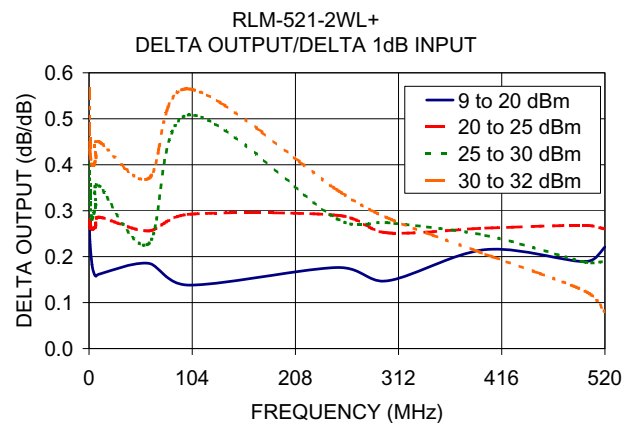
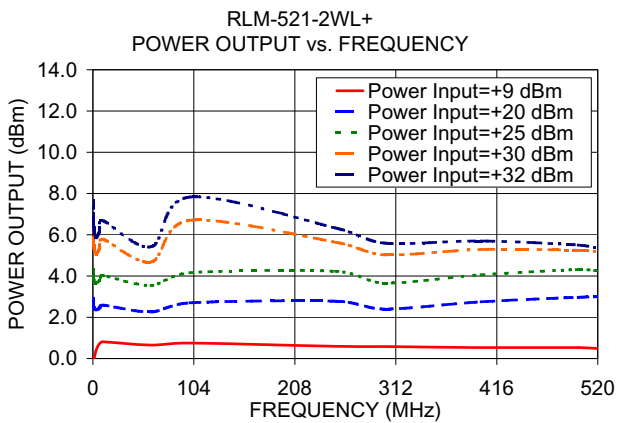
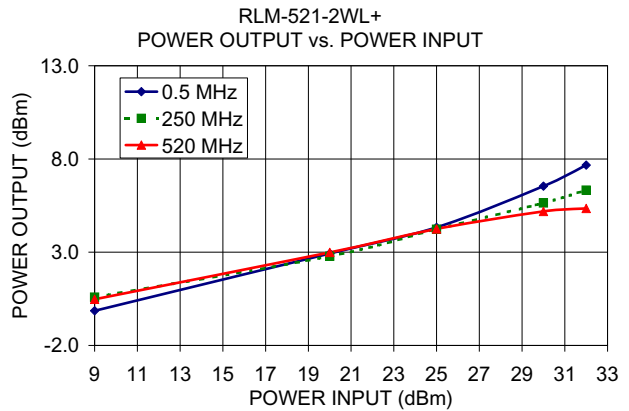
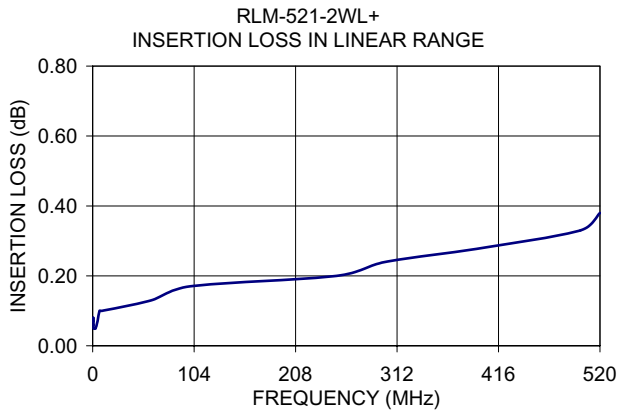
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

## Electrical Specifications

Parameter	Condition	Min.	Typ.	Max.	Units
Frequency Range		0.5	—	520	MHz
<b>Linear Range</b>					
Max Input Power	less than 0.1 dB compression	—	—	-10	dBm
Insertion Loss	less than -10 dBm input power	—	0.2	0.7	dB
VSWR	less than -10 dBm input power	—	1.2	1.78	:1
<b>Limiting Range</b>					
Input Power	>1dB compression filtered signal frequency	+9	—	+32	dBm
Output Power		—	+7	—	dBm
Δ Output/ Δ 1dB Input	Input Power Range (dBm)				
	9 to 20	—	0.2	—	
	20 to 25	—	0.3	—	dB/dB
	25 to 30	—	0.3	—	
	30 to 32	—	0.3	—	
Recovery Time	1 watt pulse 50 μsec pw 1kHz duty cycle recovery to within 90% of final value.	—	3.7	—	nsec
Response Time	-30 to +30 dBm input 50 μsec PW 1 kHz duty cycle	—	5.8	—	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			
			+9 dBm Input	+20 dBm Input	+25 dBm Input	+30 dBm Input	+32 dBm Input	+9 to +20 dBm Input	+20 to +25 dBm Input	+25 to +30 dBm Input	+30 to +33 dBm Input
0.50	0.08	1.15	-0.14	2.93	4.33	6.54	7.67	0.28	0.28	0.44	0.57
0.60	0.07	1.12	-0.11	2.73	4.12	6.05	7.02	0.26	0.28	0.39	0.49
0.70	0.08	1.10	-0.08	2.61	3.97	5.76	6.67	0.24	0.27	0.36	0.46
0.80	0.07	1.07	-0.07	2.53	3.88	5.58	6.47	0.24	0.27	0.34	0.45
0.90	0.06	1.02	-0.06	2.50	3.81	5.46	6.34	0.23	0.26	0.33	0.44
1.00	0.05	1.02	-0.05	2.45	3.80	5.37	6.22	0.23	0.27	0.31	0.43
3.00	0.05	1.02	0.35	2.36	3.66	5.07	5.87	0.18	0.26	0.28	0.40
5.00	0.07	1.04	0.59	2.39	3.70	5.18	5.98	0.16	0.26	0.30	0.40
7.00	0.10	1.07	0.73	2.46	3.79	5.35	6.18	0.16	0.27	0.31	0.42
10.00	0.10	1.08	0.81	2.59	4.02	5.79	6.69	0.16	0.29	0.35	0.45
60.00	0.13	1.12	0.65	2.26	3.54	4.68	5.42	0.19	0.26	0.23	0.37
100.00	0.17	1.17	0.75	2.70	4.16	6.70	7.83	0.14	0.29	0.51	0.57
250.00	0.20	1.22	0.59	2.78	4.23	5.64	6.33	0.18	0.29	0.28	0.35
300.00	0.24	1.27	0.58	2.40	3.66	5.03	5.80	0.15	0.25	0.27	0.29
400.00	0.28	1.33	0.53	2.75	4.06	5.29	5.70	0.22	0.26	0.25	0.21
500.00	0.33	1.39	0.53	2.97	4.31	5.25	5.50	0.19	0.27	0.19	0.13
520.00	0.38	1.45	0.48	2.99	4.25	5.19	5.35	0.22	0.26	0.19	0.08



**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)

