L42 / SML42

Thin Film Limiter Module
50 to 4000 MHz

Rev. V2

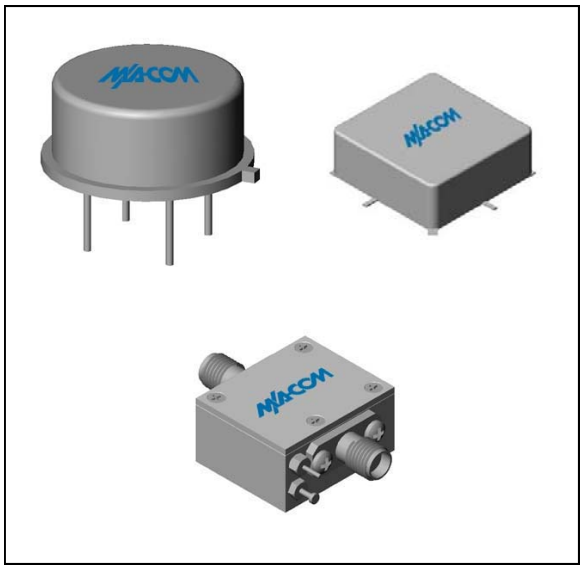
Features

- VERY WIDE BANDWIDTH
- GOOD SUPPRESSION OF EVEN ORDER HARMONICS
- LOW INSERTION LOSS: 3.5 dB (TYP.)

Description

The L42 signal limiter is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This design uses Schottky bridge quad and anti-parallel diodes, which provide consistent limiting levels over a broadband frequency range. Both TO-8 and SMTO-8 packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Product Image



Ordering Information

Part Number	Package
L42	TO-8
SML42	Surface Mount
CL42 **	SMA Connectorized

** The connectorized version is not RoHs compliant.

Electrical Specifications: $Z_0 = 50\Omega$, $V_{CC} = +15\ V_{DC}$

Parameter	Units	Typical	Guaranteed	
		25ºC	0º to 50ºC	-54º to +85ºC*
Frequency (min)	MHz	5-4000	50-4000	50-4000
Insertion Loss @ $P_{IN} \leq$ -20 dBm (max.) 50-3000 MHz 3000-4000 MHz	 dB dB	 3.5 4.0	 4.5 5.0	 5.0 6.0
Input VSWR (max.) $P_{IN} \leq$ -10 dBm, +10 $\leq$ Bias $\leq$ +20 V_{dc}		1.6:1	1.9:1	2.1:1
Output VSWR (max.) $P_{IN} \leq$ -10 dBm, +10 $\leq$ Bias $\leq$ +20 V_{dc}		2.0:1	2.3:1	2.5:1
Output Limiting Level @ P_{IN} = +20 dBm (max.) +15 $\leq$ Bias $\leq$ +20 V_{dc} 50-2000 MHz 2000-4000 MHz	 dBm dBm	 2.5 6.5	 4.0 7.0	 4.5 7.5
Bias Current (max.) @ +20 Vdc @ +15 Vdc @ +10 Vdc	 mA mA mA	 8.5 7.0 4.0	 9.0	 10.0

* Over temperature performance limits for part number CL42, guaranteed from 0°C to +50°C only.

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62ºC to +125ºC
Case Temperature	+125ºC
DC Voltage	+25 V
Continuous Input Power	+20 dBm
Short Term Input power (1 minute max.)	400 mW
Peak Power (3 µsec max.)	1 W
"S" Series Burn-In Temperature (case)	+125ºC

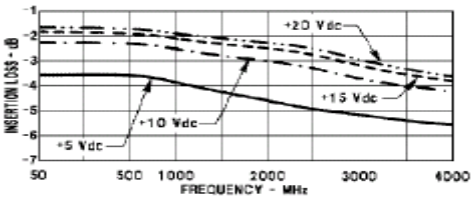
Limiting and Insertion Loss Characteristics at +25°C

Bias Voltage	Output Level at Limiting Threshold (1 dB comp.) Typical		
	1000 MHz	2500 MHz	4000 MHz
+20 Volts	-1.0 dBm	-2.5 dBm	-6.0 dBm
+15 Volts	-2.0 dBm	-4.0 dBm	-6.2 dBm
+10 Volts	-5.5 dBm	-7.0 dBm	-7.8 dBm
+5 Volts	-12.0 dBm	-13.8 dBm	-12.0 dBm

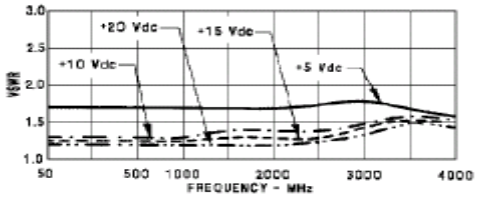
• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

Typical Performance Curves at +25°C

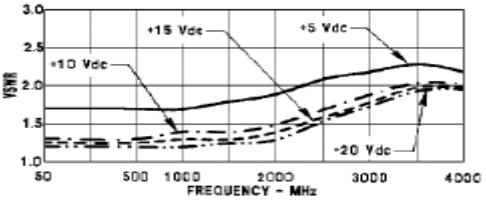
Insertion Loss



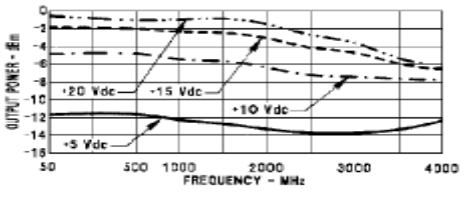
Input VSWR vs. Frequency



Output VSWR vs. Frequency

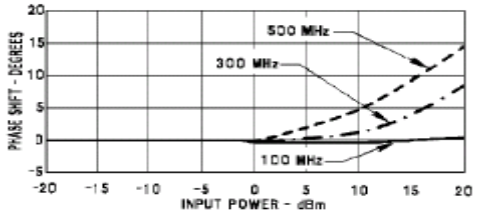


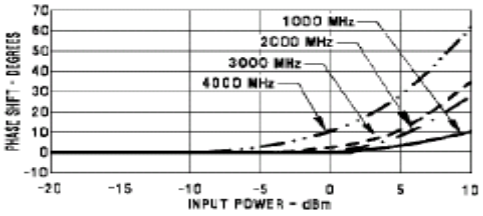
Output Power*



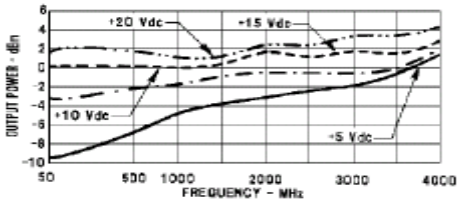
*at 1 dB Gain Compression

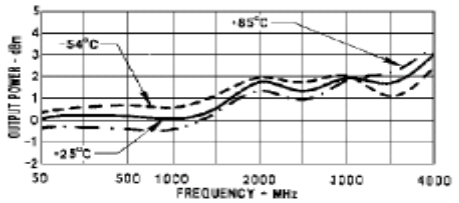
Phase Shift vs. Input Power





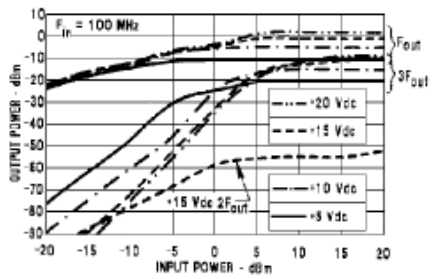
Maximum Limiting Level



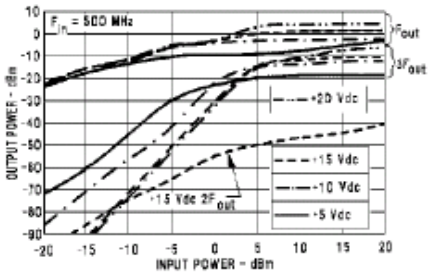


Typical Performance Curves at +25°C

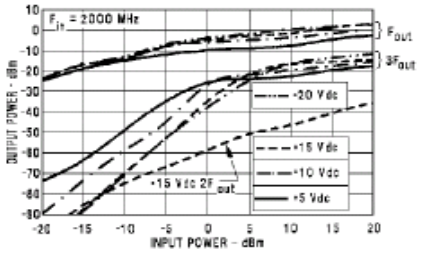
Limiting Characteristics



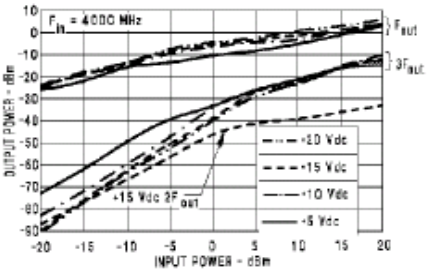
Limiting Characteristics



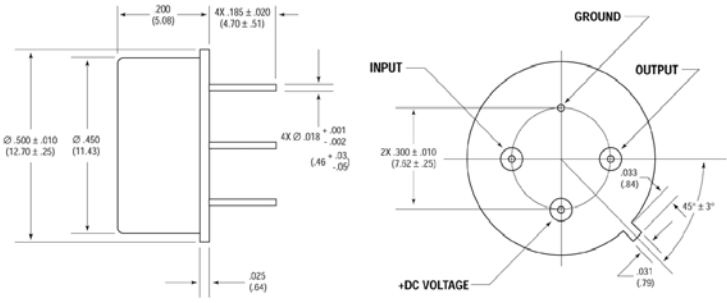
Limiting Characteristics



Limiting Characteristics

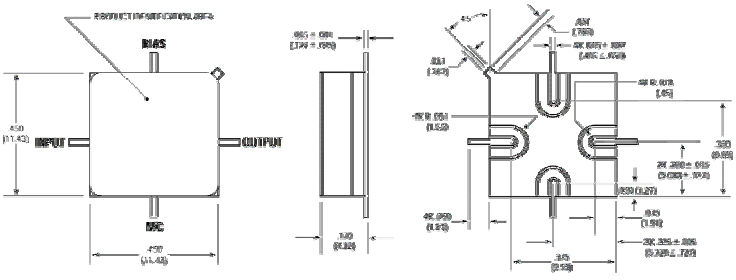


Outline Drawing: TO-8 *



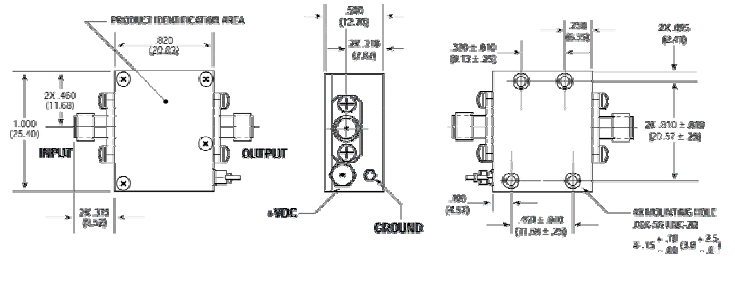
WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: Surface Mount *



WEIGHT: 1 gram (0.04 oz.) max

Outline Drawing: SMA Connectorized *



WEIGHT: 19 grams (0.67 oz.) max

* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.