

# LC1501 50 TO 1500 MHz TO-8 CASCADABLE SIGNAL LIMITER

**Typical Values**

<b>Voltage Variable Limiting Level</b> .....	<b>-13 to 0 dBm</b>	<b>LC1501</b>
<b>Low Insertion Loss</b> .....	<b>&lt;2.0 dB dB</b>	
<b>Balanced Circuit:</b>		
<b>High Even Order Suppression</b> .....	<b>&gt;50 dB at +10 dBm Input</b>	
<b>Fast Recovery Time</b> .....	<b>LC1501: &lt; 30 ns</b>	
<b>High Performance Thin Film</b>		
<b>Standard Size TO-8 Package</b>		

## SPECIFICATIONS\*

Parameter	Typical	Guaranteed		
		0 to 50° C	-55 to +85° C	
<b>Frequency (Min.)</b>	<b>50-1600 MHz</b>	<b>50-1500 MHz</b>	<b>50-1500 MHz</b>	
<b>Frequency Variation</b>	<0.1 dB/100 MHz	0.2 dB/100 MHz	0.3 dB/100 MHz	
<b>Insertion Loss</b>	To 1000 MHz To 1500 MHz	1.9 dB 2.7 dB	2.5 dB 3.5 dB	3.0 dB 4.0 dB
<b>Input SWR (Max.)</b> (P <sub>IN</sub> <+20 dBm)	To 1000 MHz To 1500 MHz	1.4:1 1.6:1	1.8:1 2.0:1	2.0:1 2.0:1
<b>Output SWR (Max.)</b> (P <sub>IN</sub> <-10 dBm)	To 1000 MHz To 1500 MHz	1.4:1 1.6:1	1.8:1 2.0:1	2.0:1 2.0:1
<b>Flatness vs. Freq. (Max)</b> (P <sub>IN</sub> <+20 dBm)	To 500 MHz To 1000 MHz To 1500 MHz	<±0.1 dB <±0.2 dB <±0.5 dB	<±0.3 dB <±0.5 dB <±0.1 dB	<±0.6 dB <±1.0 dB <±1.5 dB
<b>Bias Current (Max.)</b>	+20 Vdc +15 Vdc +10 Vdc +5 Vdc	9.5 mA 7.0 mA 4.7 mA 2.2 mA	11.5 mA 9.0 mA 6.0 mA 3.5 mA	12.5 mA 10.0 mA 8.0 mA 5.0 mA

**LIMITING AND INSERTION LOSS CHARACTERISTICS (25° C)**

Bias Voltage	Output level at Limiting Threshold (1 dB Compression)		Maximum Output Limiting Level (+20 dBm Input)		Insertion Loss (500 MHz)		Insertion Loss (1000 MHz)	
	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.
+20 volts	-2.0 dBm	0.0 dBm	+2.0 dBm	+3.0 dBm	1.7 dB	2.0 dB	1.8 dB	2.2 dB
+15 volts	-2.5 dBm	-1.0 dBm	+1.0 dBm	+2.0 dBm	1.9 dB	2.2 dB	2.0 dB	2.4 dB
+10 volts	-4.0 dBm	-3.0 dBm	-1.0 dBm	0.0 dBm	2.3 dB	2.8 dB	2.5 dB	3.0 dB
+5 volts	-9.0 dBm	—	-7.0 dBm	—	3.1 dB	—	3.3 dB	—

\* Measured in a 50-ohm system at +15 Vdc bias unless otherwise specified.

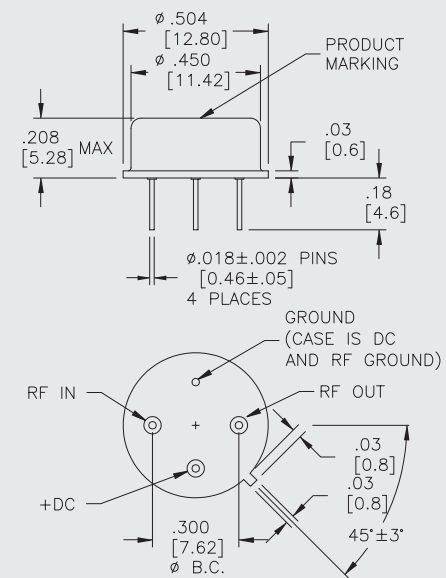
## ABSOLUTE MAXIMUM RATINGS

<b>Ambient Operating Temperature</b> .....	<b>-55° to 110° C</b>
<b>Storage Temperature</b> .....	<b>-62° to 125° C</b>
<b>Maximum Case Temperature</b> .....	<b>125° C</b>
<b>Maximum DC Voltage</b> .....	<b>+25 Volts</b>
<b>Maximum Continuous RF Input Power</b> .....	<b>200 Milliwatts</b>
<b>Maximum Peak Power (3 μsec Max.)</b> .....	<b>1 Watt</b>
<b>Burn-in Temperature</b> .....	<b>125°C</b>
<b>Thermal Resistance<sup>1</sup> (θ<sub>jc</sub>)</b> .....	<b>2.1° C/Watt</b>
<b>Junction Temperature Rise Above Case (T<sub>jc</sub>)</b> .....	<b>0.2° C</b>

<sup>1</sup> Thermal resistance is based on total power dissipation.j

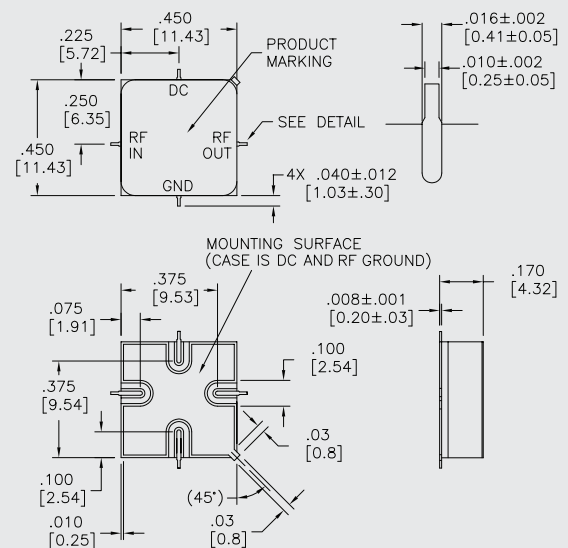
## LC1501

### TO-8 Package for Limiter



## LS1501

### SMT0-8 Package for Limiters



DIMENSIONS ARE IN INCHES [MILLIMETERS]