

**Thin Film Limiter Module  
50 to 4000 MHz**

**L42 / SML42**

V2

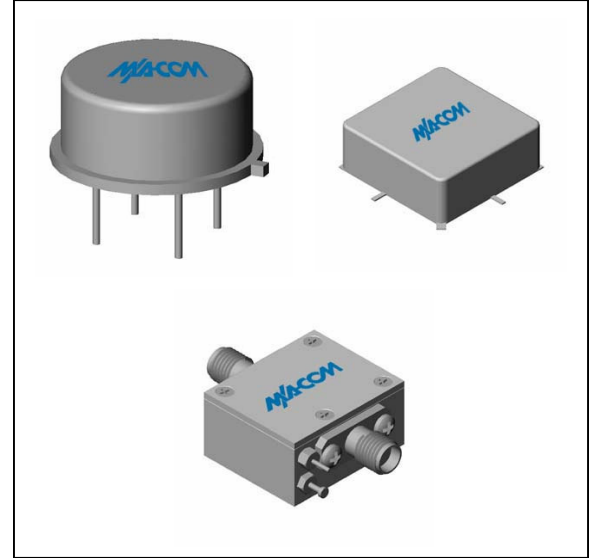
**Features**

- 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 SMT0-8 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 |                |     |
|---|---------------------|---------------|------------|----------------|-----|
|   |                     | 25°C          | 0° to 50°C | -54° to +85°C* |     |
| Frequency (min)   | MHz                 | 5-4000        | 50-4000    | 50-4000        |     |
| Insertion Loss @ $P_{IN} \leq -20$ dBm (max.)   | dB                  | 50-3000 MHz   | 3.5        | 4.5            | 5.0 |
|   |                     | 3000-4000 MHz | 4.0        | 5.0            | 6.0 |
| Input VSWR (max.)<br>$P_{IN} \leq -10$ dBm, $+10 \leq \text{Bias} \leq +20 V_{dc}$          |                     | 1.6:1         | 1.9:1      | 2.1:1          |     |
| Output VSWR (max.)<br>$P_{IN} \leq -10$ dBm, $+10 \leq \text{Bias} \leq +20 V_{dc}$         |                     | 2.0:1         | 2.3:1      | 2.5:1          |     |
| Output Limiting Level @ $P_{IN} = +20$ dBm (max.)<br>$+15 \leq \text{Bias} \leq +20 V_{dc}$ | 50-2000 MHz         | 2.5           | 4.0        | 4.5            |     |
|   | 2000-4000 MHz       | 6.5           | 7.0        | 7.5            |     |
|   | Bias Current (max.) |               |            |                |     |
| @ +20 Vdc   | mA                  | 8.5           | 9.0        | 10.0           |     |
| @ +15 Vdc   | mA                  | 7.0           |            |                |     |
| @ +10 Vdc   | mA                  | 4.0           |            |                |     |

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

**Absolute Maximum Ratings**

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

**Limiting and Insertion Loss Characteristics at +25°C**

| Bias Voltage | Output Level at Limiting Threshold (1 dB comp.) |           |           |
|--------------|---|-----------|-----------|
|              | 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 |

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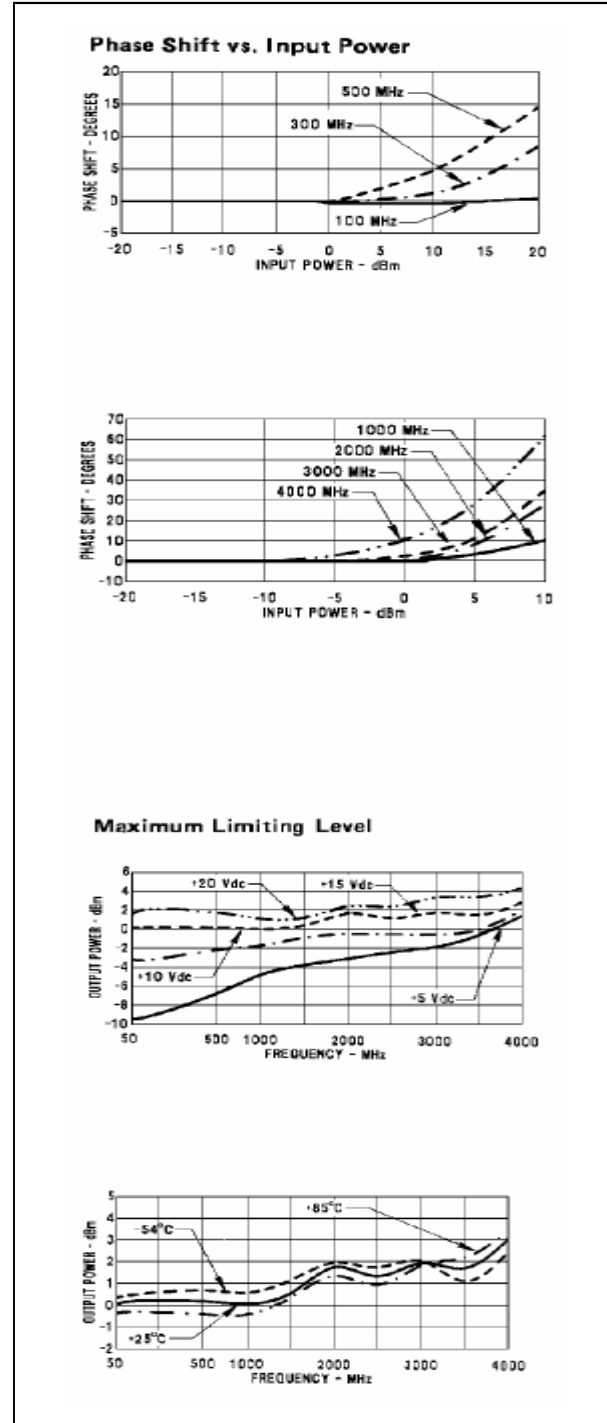
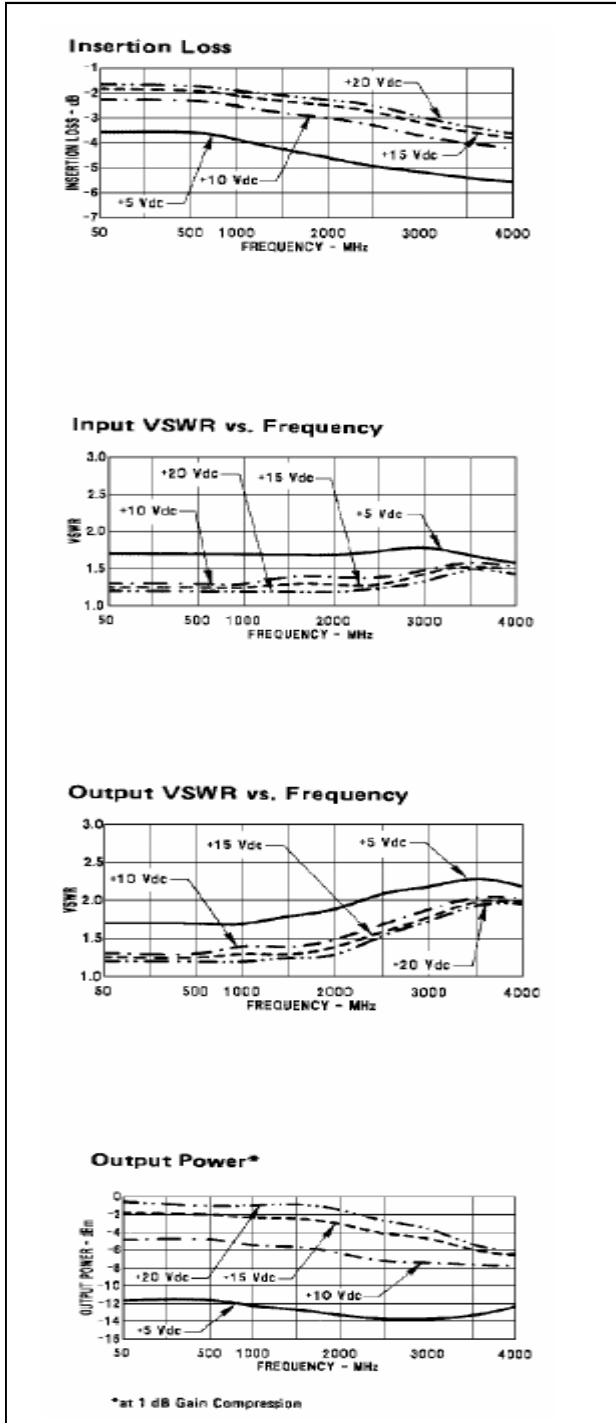
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**Typical Performance Curves at +25°C**



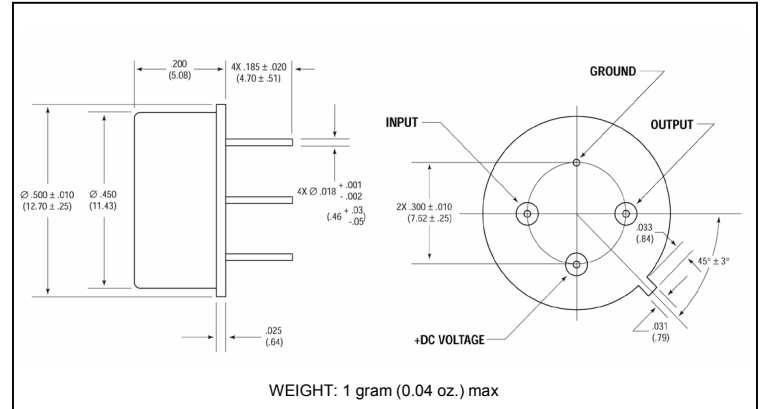
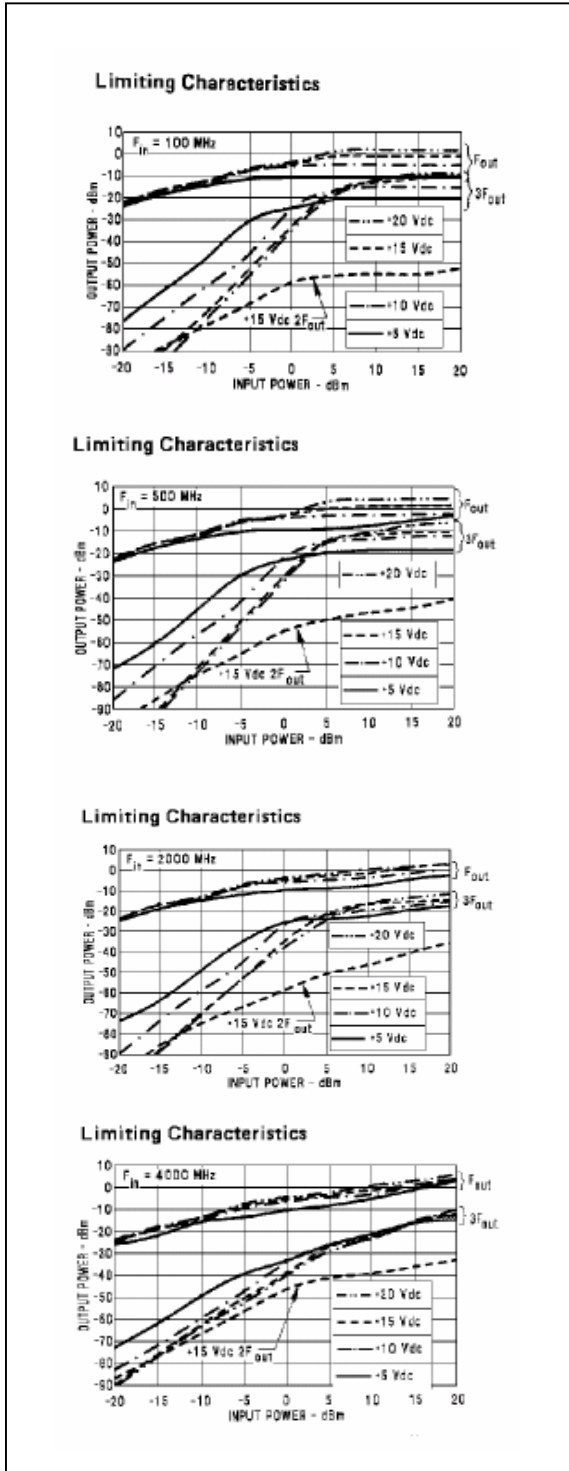
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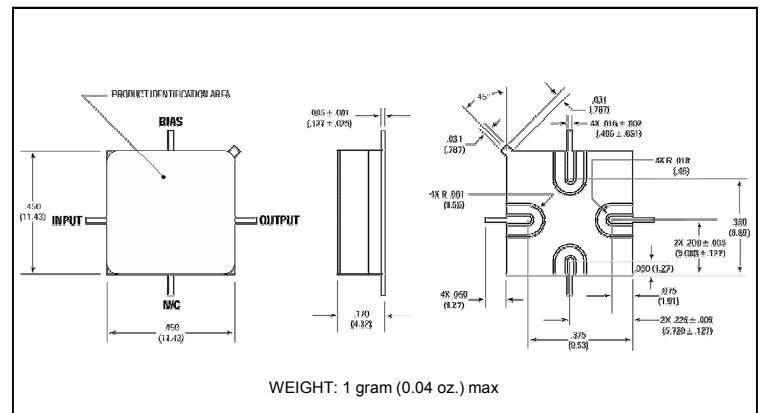
V2

**Typical Performance Curves at +25°C**

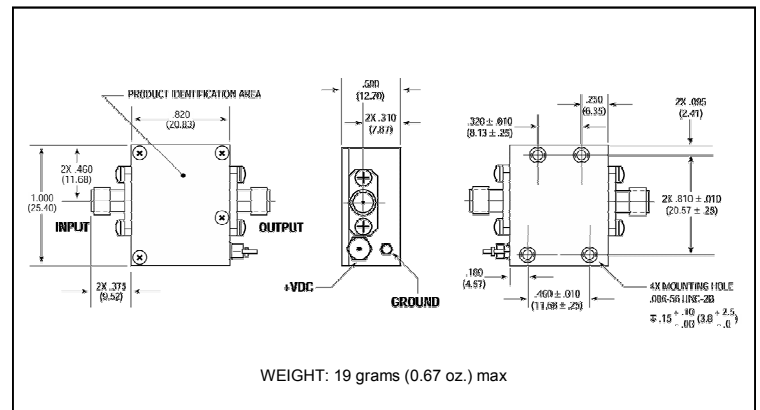
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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