

**Cascadable Amplifier  
1000 to 4000 MHz**

**LA45-1/ SMLA45-1**

V3

**Features**

- SYMMETRICAL CLIPPING:  
GOOD EVEN-ORDER SUPPRESSION
- HIGH OUTPUT LEVEL: +17.0 dBm (TYP.)
- MEDIUM GAIN: 14.0 dB (TYP.)
- WIDE BANDWIDTH: 0.8-4.2 GHz (TYP.)

**Description**

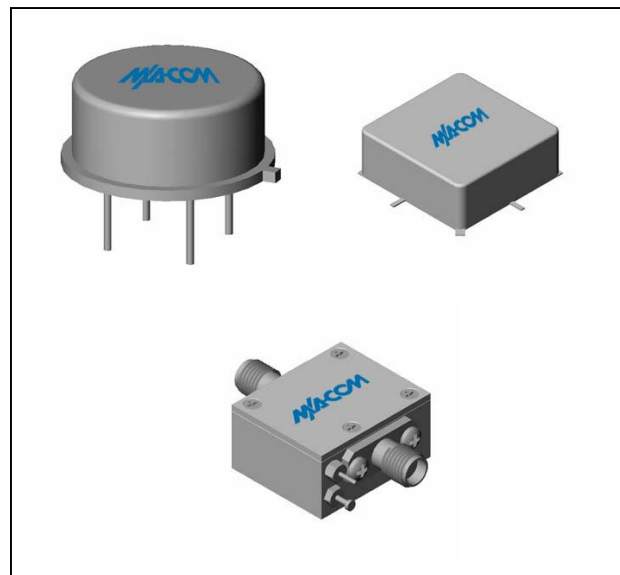
The LA45-1 limiting amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This design uses a Schottky diode limiter circuit at the input, and a two-stage GaAs FET feedback amplifier at the output. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

**Ordering Information**

Part Number	Package
LA45-1	TO-8
SMLA45-1	Surface Mount
CLA45-1 **	SMA Connectorized

\*\* The connectorized version is not RoHS compliant.

**Product Image**



**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	MHz	800-4200	1000-4000	1000-4000
Small Signal Gain (min)	dB	14.0	13.0	12.0
Gain Flatness (max)	dB	±0.5	±0.8	±1.0
Noise Figure (max)	dB	7.5	9.0	9.5
Power Output @ 1 dB comp. (max)	dBm	+17.0	+15.5	+14.5
Output Limiting Level (max) Pin = +17 dBm	dBm	+18.5	+20.5	+21.0
IP3/IP2	dBm	+27.0/+48.0		
Second Order Harmonic IP	dBm	+53.0		
VSWR Input / Output (max)		1.8:1 / 1.6:1	2.1:1 / 2.0:1	2.2:1 / 2.1:1
DC Current @ 15 Volts (max)	mA	110	115	120

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	85°C
DC Voltage	+16 V
Continuous Input Power	+17 dBm
Short Term Input power (1 minute max.)	100 mW
"S" Series Burn-In Temperature (case)	85°C

**Thermal Data:  $V_{CC} = +15 V_{DC}$**

Parameter	Rating
Thermal Resistance $\theta_{jc}$	108.9°C/W
Transistor Power Dissipation $P_d$	0.476 W
Junction Temperature Rise Above Case $T_{jc}$	52°C

\* Over temperature performance limits for part number CLA45-1, guaranteed from 0°C to +50°C only.

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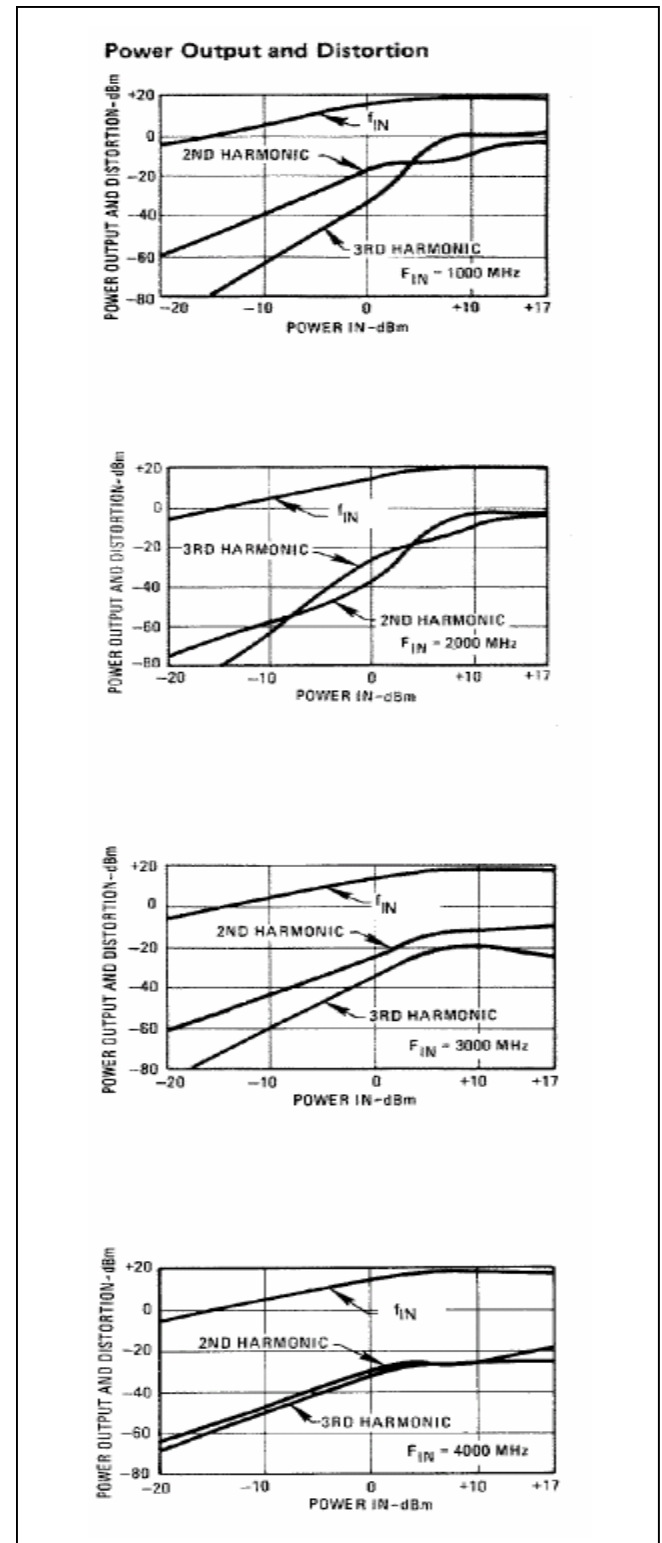
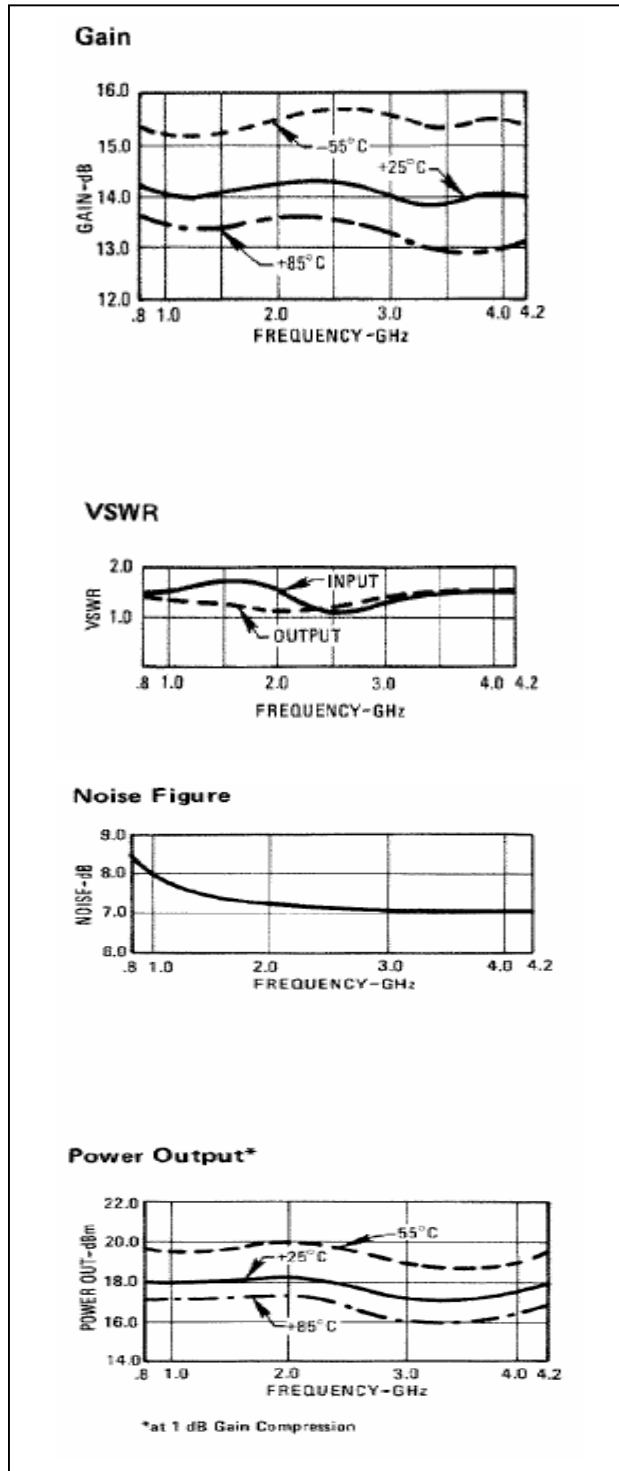
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

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

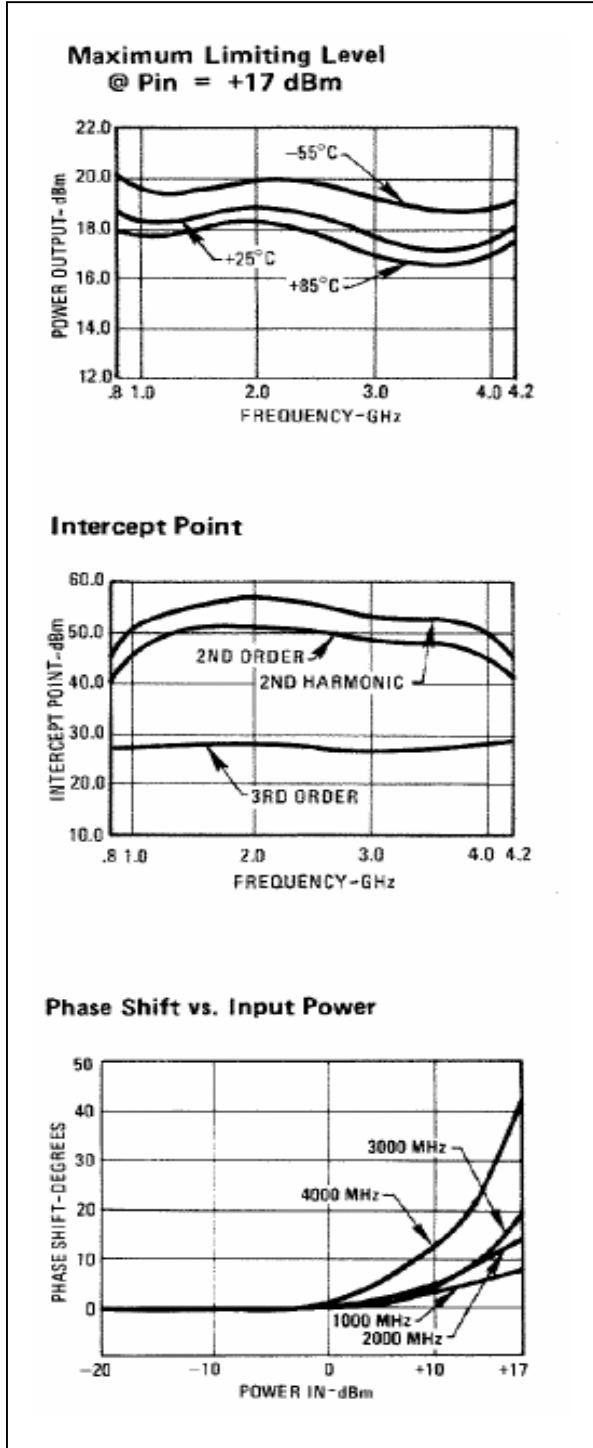


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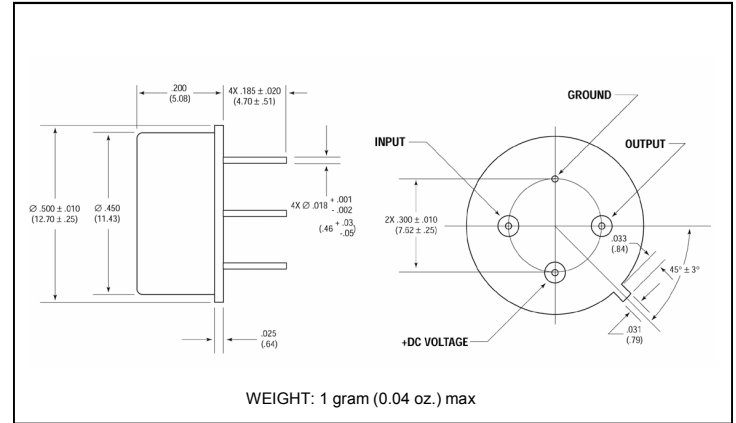
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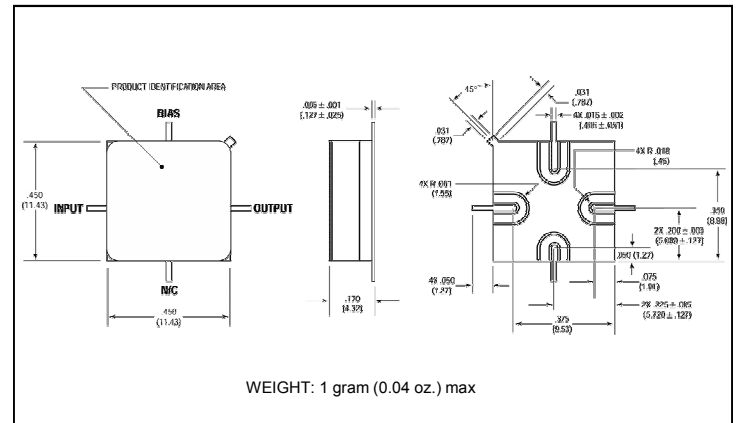
**Typical Performance Curves at +25°C**



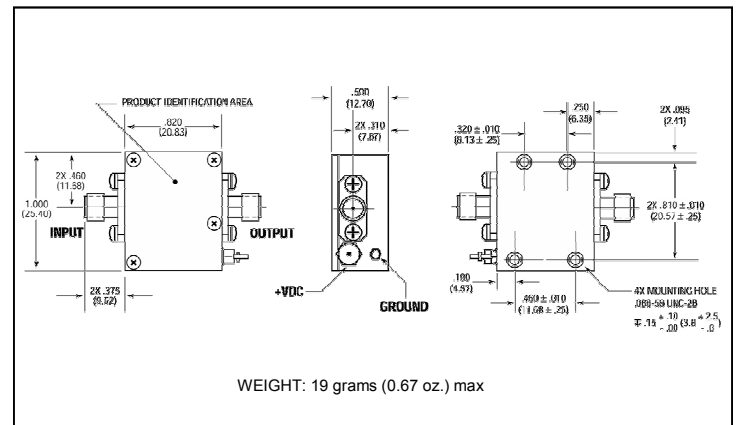
**Outline Drawing: TO-8 \***



**Outline Drawing: Surface Mount \***



**Outline Drawing: SMA Connectorized \***



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