

Cascadable Amplifier 1000 - 4000 MHz

Rev. V2

Features

- SYMMETRICAL CLIPPING:
GOOD EVEN-ORDER SUPPRESSION
- MEDIUM OUTPUT LEVEL: +14.0 dBm (TYP.)
- MEDIUM GAIN: 11.5 dB (TYP.)
- WIDE BANDWIDTH: 0.8-4.2 GHz (TYP.)

Description

The LA45 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

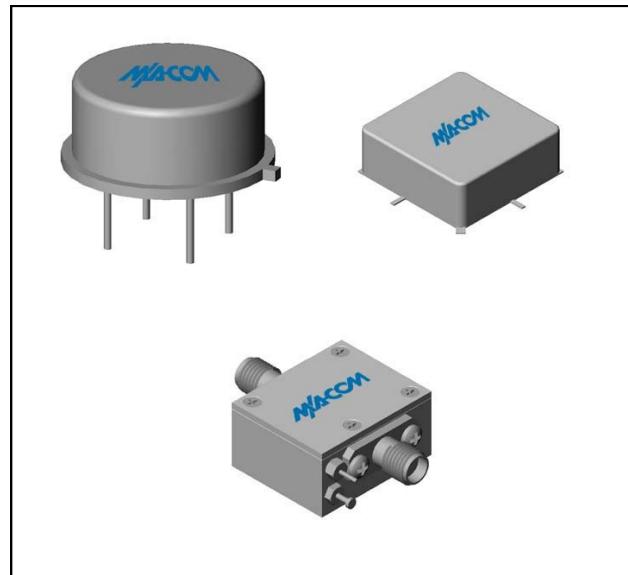
Part Number	Package
LA45	TO-8
SMLA45	Surface Mount
MALI-008742-0CLA45	SMA Connectorized **

** 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	MHz	800-4200	1000-4000	1000-4000
Small Signal Gain (min)	dB	11.5	10.0	9.0
Gain Flatness (max)	dB	±0.6	±0.8	±1.0
Noise Figure (max)	dB	8.0	9.5	10.0
Power Output @ 1 dB comp. (max)	dBm	+14.0	+12.5	+11.5
Output Limiting Level (max) Pin = +17 dBm	dBm	+15.5	+17.0	+17.5
IP3/IP2	dBm	+24.0/+46.0		
Second Order Harmonic IP	dBm	+50.0		
VSWR Input / Output (max)		1.7:1 / 1.6:1	2.1:1 / 2.0:1	2.2:1 / 2.1:1
DC Current @ 15 Volts (max)	mA	110	115	120

Product Image



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: $V_{CC} = +15 V_{DC}$

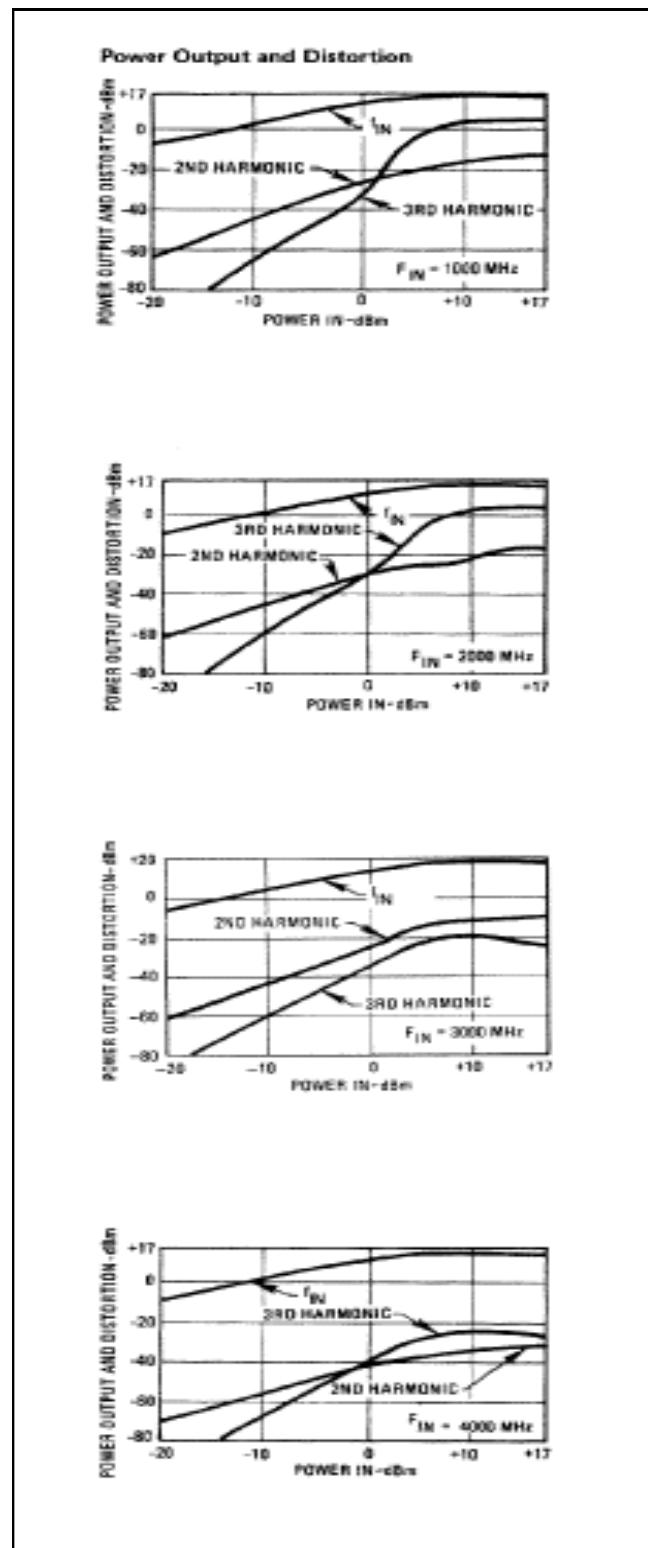
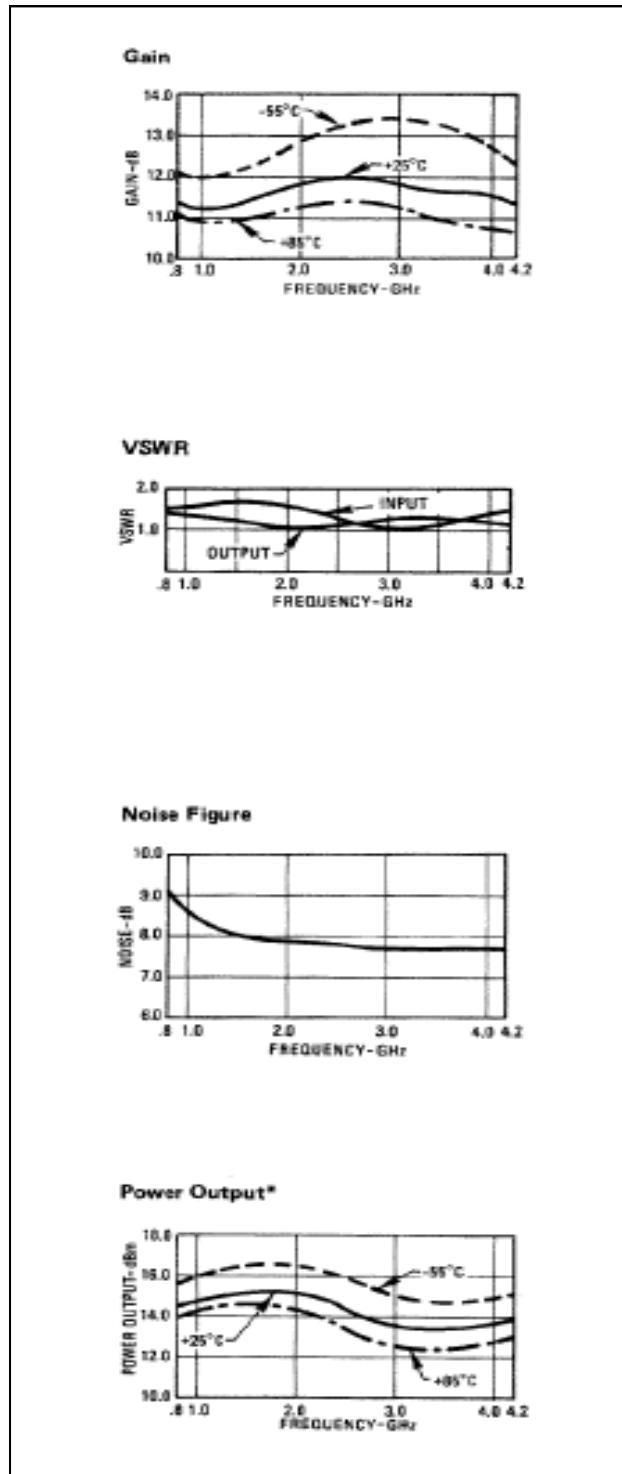
Parameter	Rating
Thermal Resistance θ_{jc}	108.9°C/W
Transistor Power Dissipation P_d	0.476 W
Junction Temperature Rise Above Case T_{jc}	52°C

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

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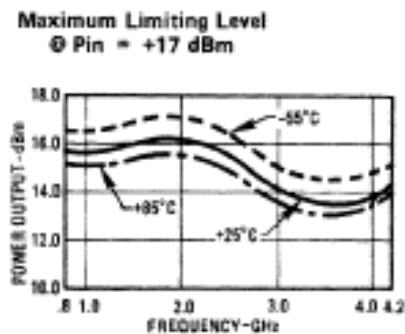
Typical Performance Curves at +25°C



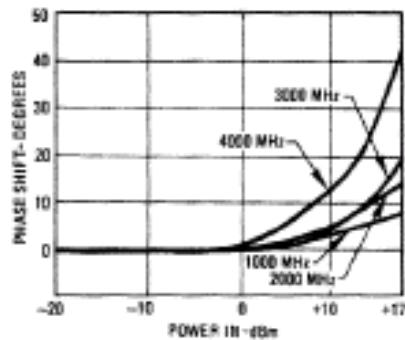
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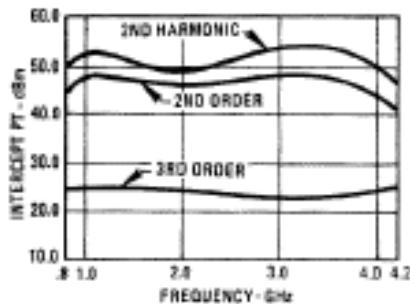
Typical Performance Curves at +25°C



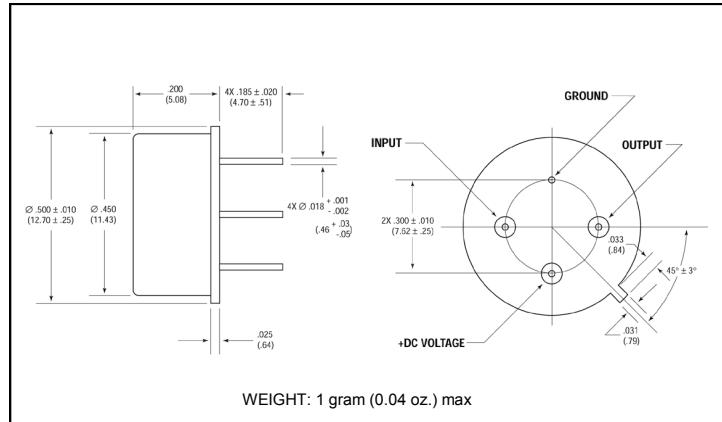
Phase Shift vs. Input Power



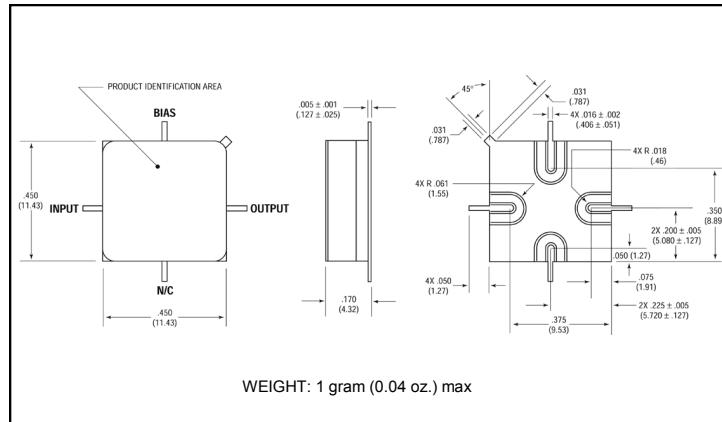
Intercept Point



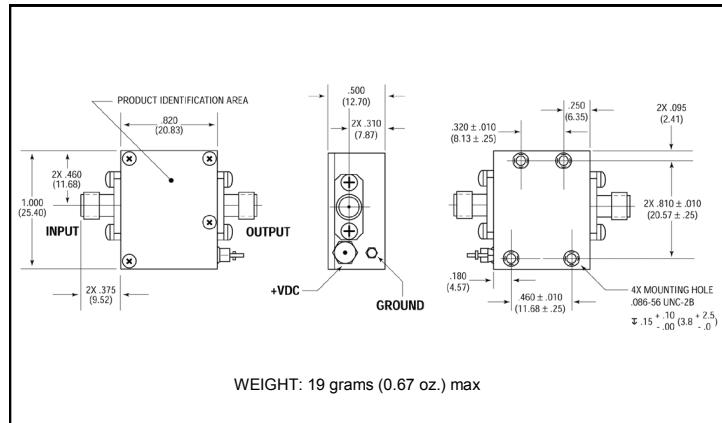
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

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