LA45 / SMLA45



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.

Product Image



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

Davamatas	Units	Typical	Guaranteed	
Parameter		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

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

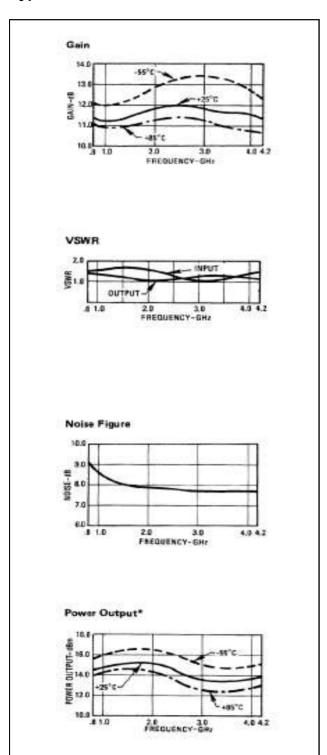
^{*} Over temperature performance limits for part number CLA45, guaranteed from 0°C to +50°C only.

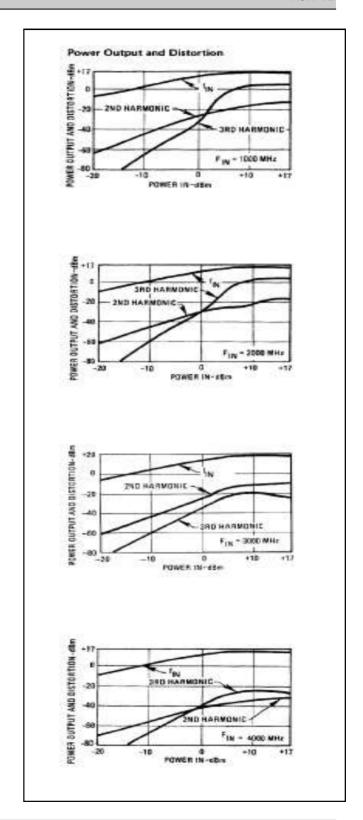


Cascadable Amplifier 1000 - 4000 MHz

Rev. V2

Typical Performance Curves at +25°C



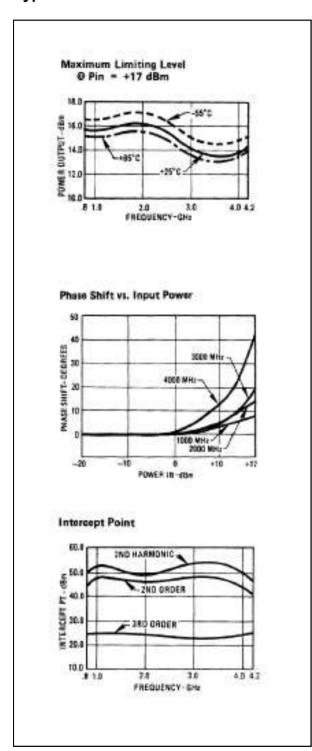




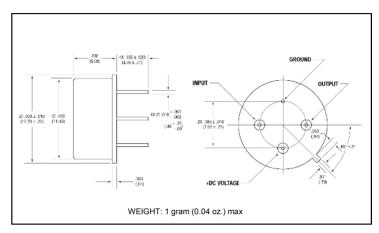
Cascadable Amplifier 1000 - 4000 MHz

Rev. V2

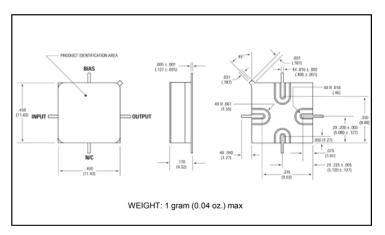
Typical Performance Curves at +25°C



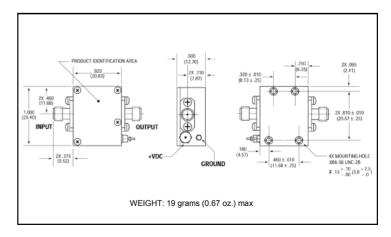
Outline Drawing: TO-8



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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

LA45 / SMLA45



Cascadable Amplifier 1000 - 4000 MHz

Rev. V2

M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.