

Limiting Amplifier 50 - 500 MHz

Rev. V2

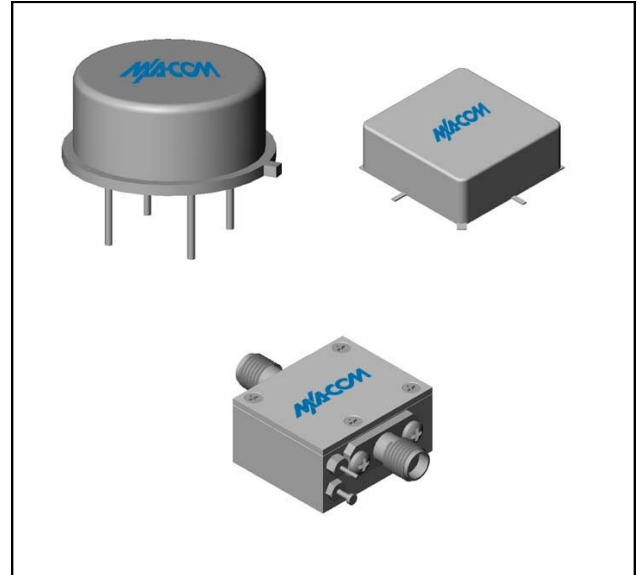
Features

- SYMMETRICAL CLIPPING
GOOD EVEN-ORDER SUPPRESSION
- HIGH OUTPUT LEVEL: +11.5 dBm (TYP.)
- HIGH THIRD-ORDER IP: +28 dBm (TYP.)
- FAST PULSE RECOVERY TIME: < 50 NSEC (TYP.)

Description

The LA7 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 single stage bipolar transistor feedback amplifier at the output. An RF choke is used for DC power supply decoupling. Both TO-8 and Surface Mount packages are hermetically sealed, and MIL-STD-883 environmental screening is available.

Product Image



Ordering Information

Part Number	Package
LA7	TO-8
SMLA7	Surface Mount
CLA7 **	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	20-550	50-500	50-500
Small Signal Gain (min)	dB	12.5	12.0	11.0
Gain Flatness (max)	dB	±0.2	±0.5	±0.7
Noise Figure (max) 50-300 MHz	dB	7.0	8.0	8.5
Noise Figure (max) 300-500 MHz	dB	7.5	8.5	9.0
Power Output @ 1 dB comp. (min) 50-300 MHz	dBm	+12.0	+11.0	+8.0
Power Output @ 1 dB comp. (min) 300-500 MHz	dBm	+11.5	+10.0	+7.0
IP3	dBm	+28		
VSWR Input / Output (max)		1.3:1 / 1.3:1	1.7:1 / 1.7:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	54	56	58

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-62°C to +125°C
Case Temperature	+125°C
DC Voltage	+17 V
Continuous Input Power	+23 dBm
Short Term Input power (1 minute max.)	400 mW
Peak Power (3 µsec max.)	1 W
"S" Series Burn-In Temperature (case)	+125°C

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

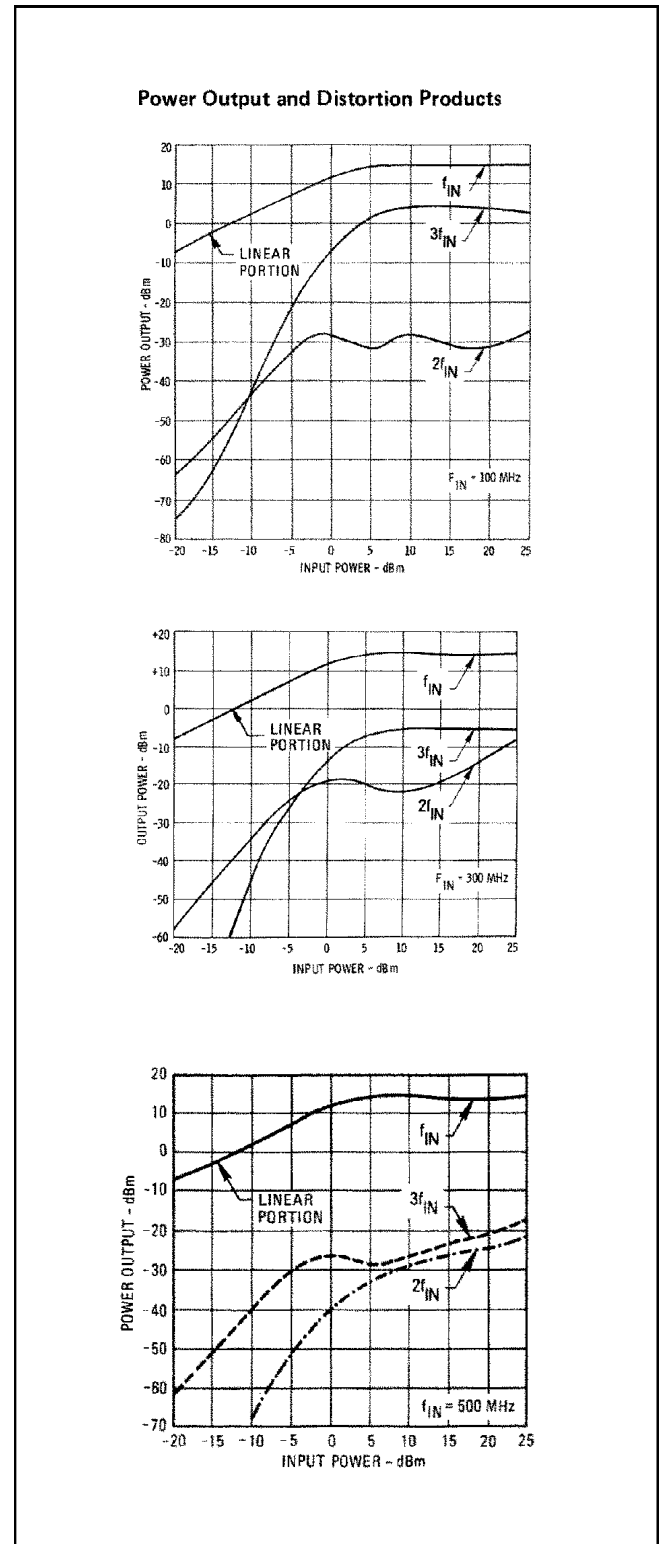
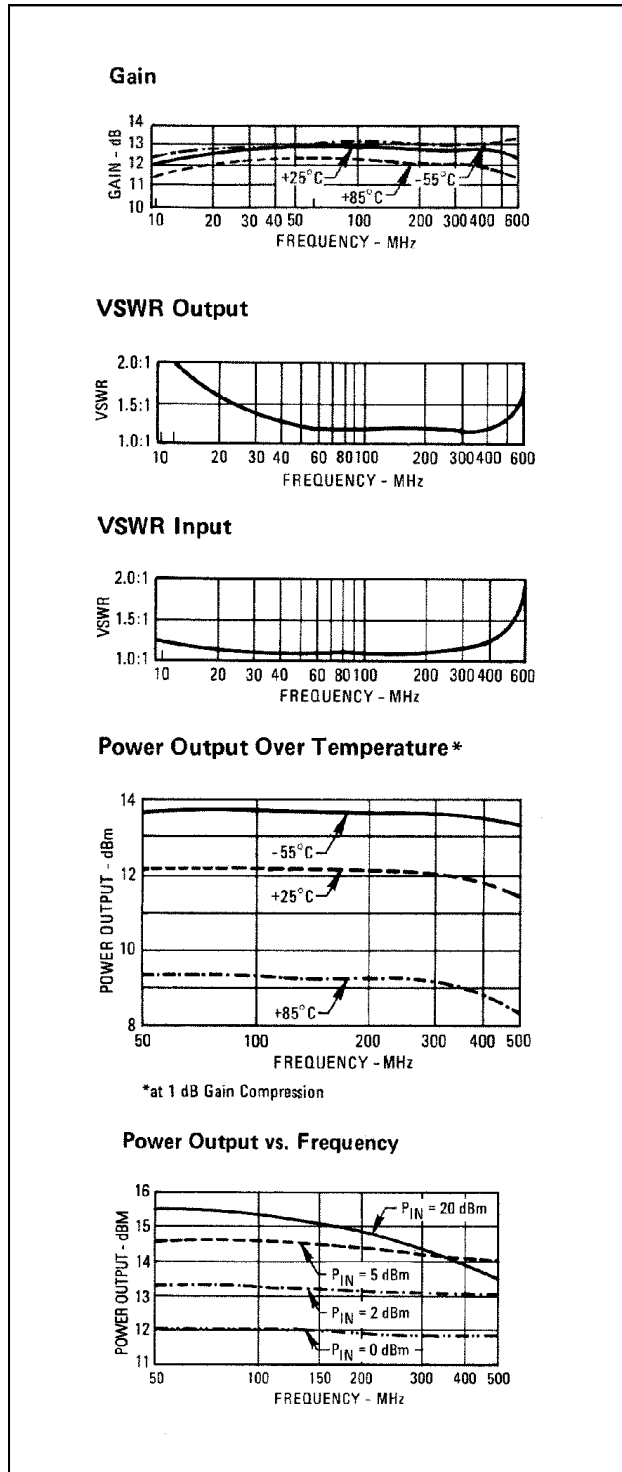
Parameter	Rating
Thermal Resistance θ_{jc}	45°C/W
Transistor Power Dissipation P_d	0.560 W
Junction Temperature Rise Above Case T_{jc}	+25.2°C

1 * Over temperature performance limits for part number CLA7, guaranteed from 0°C to +50°C only.

Limiting Amplifier 50 - 500 MHz

Rev. V2

Typical Performance Curves at +25°C

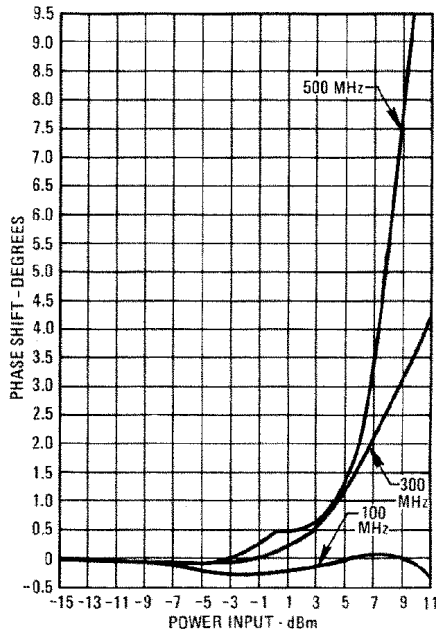


Limiting Amplifier 50 - 500 MHz

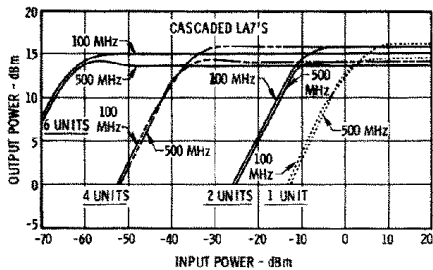
Rev. V2

Typical Performance Curves at +25°C

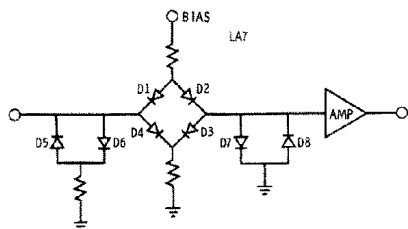
Phase Shift vs. Input Power



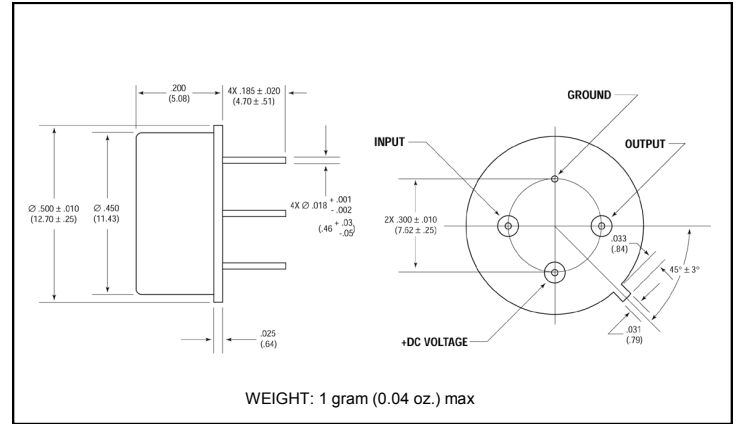
Limiting Characteristics



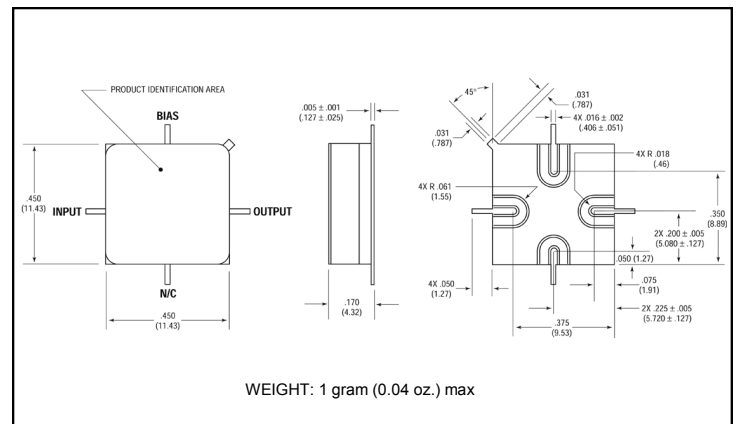
Schematic Diagram



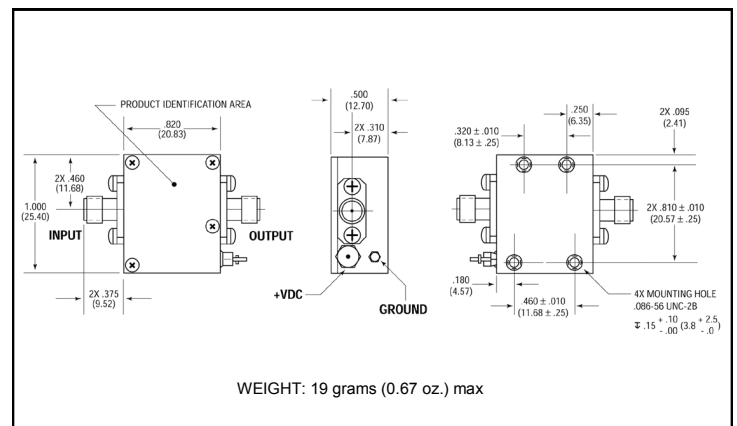
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount *



Outline Drawing: SMA Connectorized *



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 estoppel 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.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View SMLA7](#) on WIN SOURCE
- ⊖ [M/A-Com Technology Solutions](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management