# LA45-1 / SMLA45-1

# Cascadable Amplifier 1000 to 4000 MHz

#### 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**

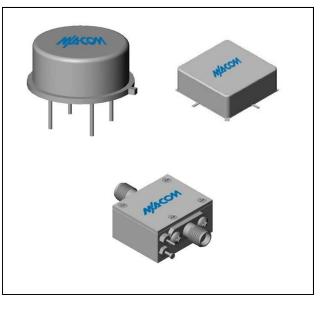
Part Number	Package	
LA45-1	TO-8	
SMLA45-1	Surface Mount	
CLA45-1 **	SMA Connectorized	

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

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

Parameter	Units	Typical	Guaranteed		
Falameter	Units	25⁰C	0º to 50ºC	-54º to +85ºC*	
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	T
IP3/IP2	dBm	+27.0/+48.0			
Second Order Harmonic IP	dBm	+53.0			1
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	

### **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<sub>CC</sub> = +15 V<sub>DC</sub>

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

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

1

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology

- **PRELIMINARY**: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.
- North America Tel: 800.366.2266
  Europe Tel: +353.21.244.6400
  India Tel: +91.80.4155721
   China Tel: +86.21.2407.1588
  Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

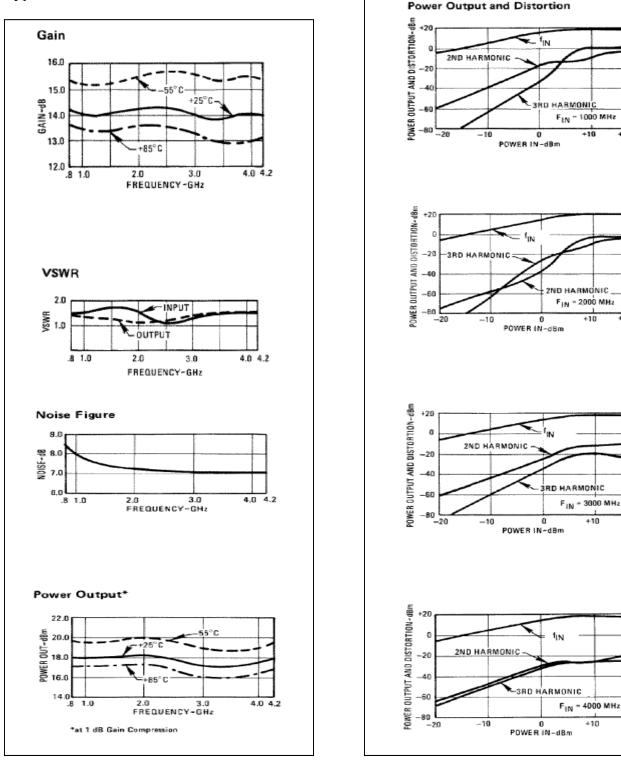


# LA45-1 / SMLA45-1



# Cascadable Amplifier 1000 to 4000 MHz

### Typical Performance Curves at +25°C



2

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology North America Tel: 800.366.2266
 Europe Tel: +353.21.244.6400
 India Tel: +91.80.4155721
 China Tel: +86.21.2407.1588

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed. Downloaded from Elcodis.com electronic components distributor Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Rev. V3

+17

+17

+17

+17

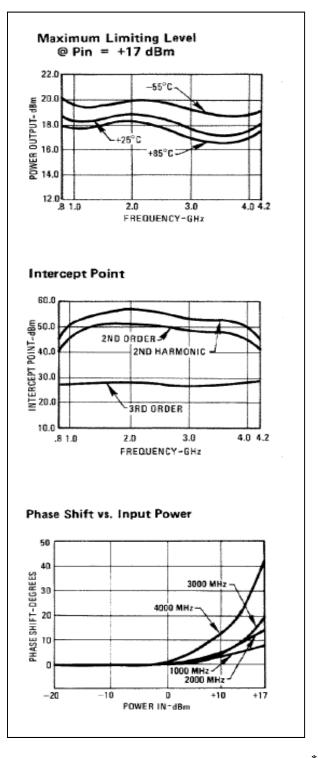
# LA45-1 / SMLA45-1



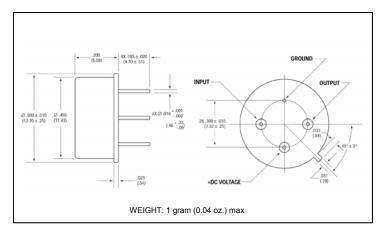
Rev. V3

# Cascadable Amplifier 1000 to 4000 MHz

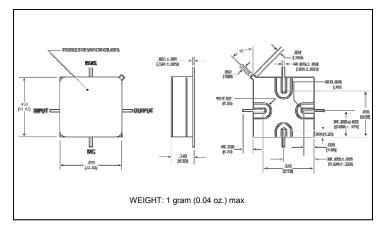
### Typical Performance Curves at +25°C



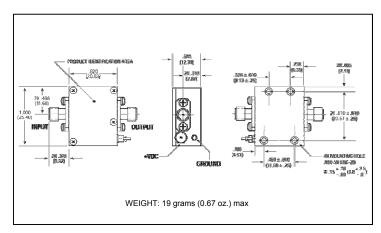
## Outline Drawing: TO-8<sup>\*</sup>



### Outline Drawing: Surface Mount



## Outline Drawing: SMA Connectorized \*



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

3

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

- North America Tel: 800.366.2266
  Europe Tel: +353.21.244.6400
  India Tel: +91.80.4155721
  Visit www.macomtech.com for additional data sheets and product information.
- PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.
- Downloaded from Elcodis.com electronic components distributor

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.