## LA17 / SMLA17



# Cascadable Amplifier 10 to 1000 MHz

Rev. V2

#### **Features**

- SYMMETRICAL CLIPPING: GOOD EVEN-ORDER SUPPRESSION
- MEDIUM OUTPUT LEVEL: +10 dBm (TYP.)
- HIGH THIRD-ORDER INTERCEPT POINT: +28 dBm (TYP.)
- FAST PULSE RECOVERY TIME: < 50 NSEC

#### **Description**

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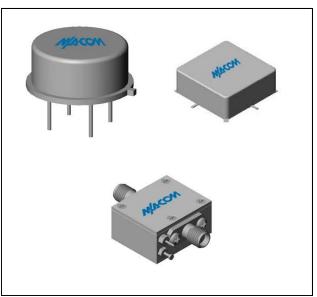
The LA17 limiting amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability.

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.

**Ordering Information** 

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Part Number	Package	
LA17	TO-8	
SMLA17	Surface Mount	
CLA17 **	SMA Connectorized	

**Product Image** 



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

Dovemeter	Units	Typical	Guaranteed	
Parameter		25°C	0° to 50°C	-54º to +85ºC*
Frequency	MHz	5-1100	10-1000	10-1000
Small Signal Gain (min)	dB	11.5	10.5	9.5
Gain Flatness (max)	dB	±0.3	±0.5	±0.7
Noise Figure (max)	dB	5.8	6.7	7.2
Power Output @ 1 dB comp. (min)	dBm	+10.0	+7.0	+5.0
Output Limiting Level (max) Pin = +20 dBm	dBm	+15.0	+16.0	+17.0
VSWR Input / Output (max)		<1.7:1/ <1.7:1	1.9:1/ 1.9:1	2.0:1 / 2.0:1
DC Current @ 15 Volts (max)	mA	55	57	59

## **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 $\theta_{jc}$	45°C/W
Transistor Power Dissipation P <sub>d</sub>	0.448 W
Junction Temperature Rise Above Case T <sub>jc</sub>	20.2°C

<sup>\*</sup> Over temperature performance limits for part number CLA17, guaranteed from 0°C to +50°C only.

<sup>\*\*</sup> The connectorized version is not RoHs compliant.

<sup>•</sup> North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400

<sup>•</sup> India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588

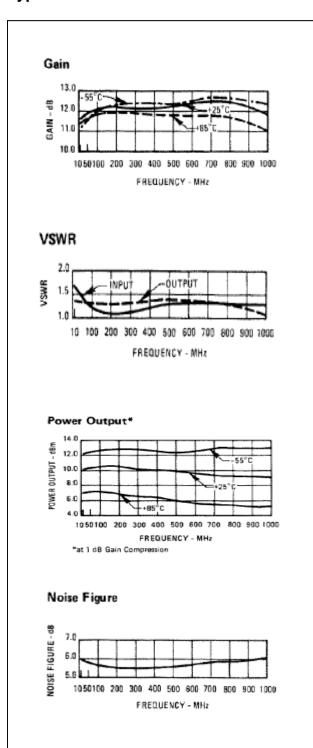
Visit www.macomtech.com for additional data sheets and product information.

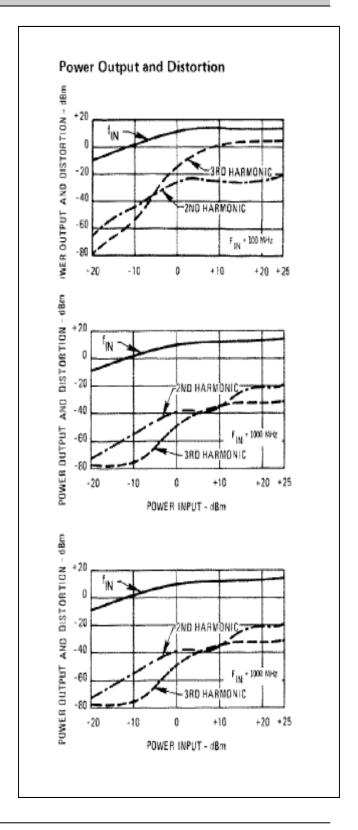


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#### Typical Performance Curves at +25°C





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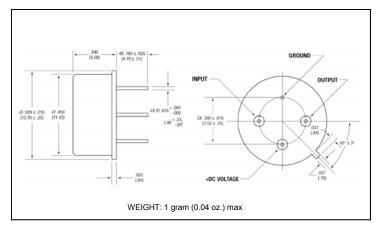
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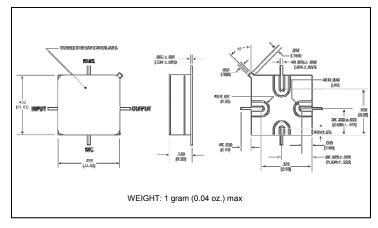
#### Typical Performance Curves at +25°C

# Phase Shift vs Input Power - DEGREES SHT. Mastr POMER INPUT - (IBm Intercept Point ND HARMONI INTERCEPT POINT -គំនបក់ល ចគ់ 10 50100 200 300 400 500 600 700 800 900 1000 FREQUENCY - MHz Maximum Limiting @ PIN = +20 dBm POWER OUTPUT - dBm 30 50 100 200 300 400 500 600 700 FREQUENCY - MHz **Limiting Characteristics** 500, MHz \*OWER OUTPUT -- dBm - 60 -50 - 40 -30 -20 POWER INPUT - d8m

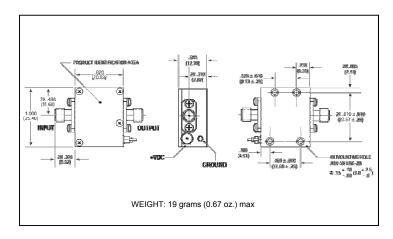
## Outline Drawing: TO-8 \*



#### Outline Drawing: Surface Mount \*



#### Outline Drawing: SMA Connectorized \*



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

Commitment to produce in volume is not guaranteed.