

Cascadable Amplifier 10 - 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

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

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

Product Image



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

| Parameter | Units | Typical | Guaranteed | |
|--|-------|-------------------|--------------|----------------|
| Parameter | | 25°C | 0° to 50°C | -54° to +85°C* |
| 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 θ_{jc} | 45°C/W |
| Transistor Power Dissipation P _d | 0.448 W |
| Junction Temperature Rise Above Case T _{jc} | 20.2°C |

^{*} Over temperature performance limits for part number CLA17, guaranteed from 0°C to +50°C only.

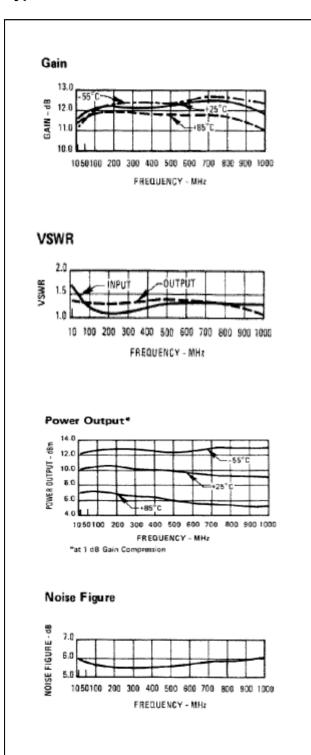
^{**} The connectorized version is not RoHs compliant.

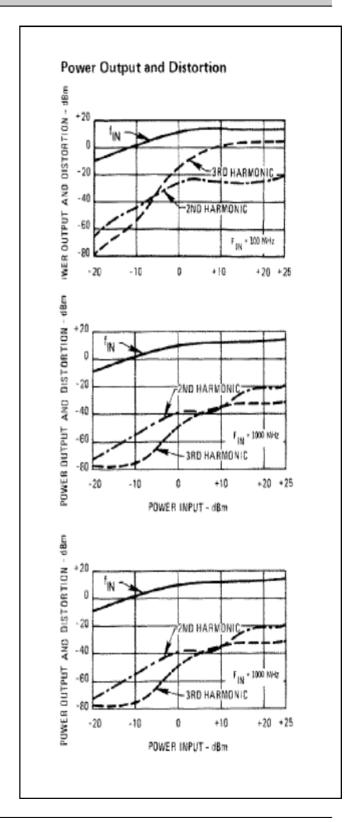


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Typical Performance Curves at +25°C



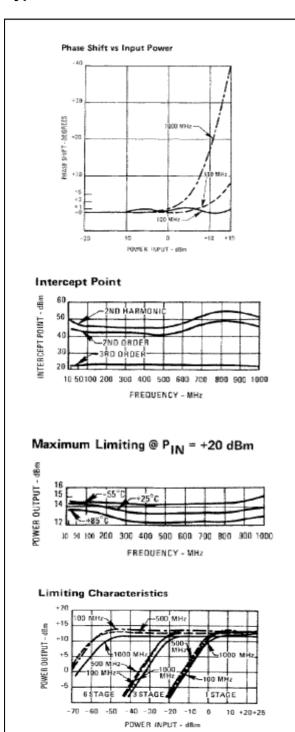




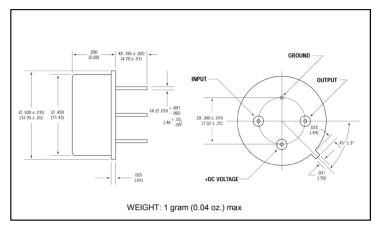
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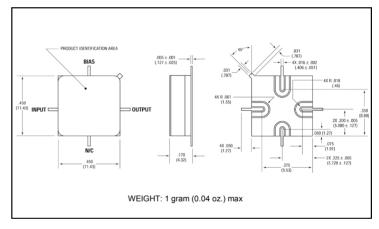
Typical Performance Curves at +25°C



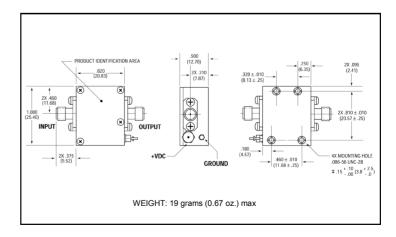
Outline Drawing: TO-8 *



Outline Drawing: Surface Mount



Outline Drawing: SMA Connectorized *



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



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