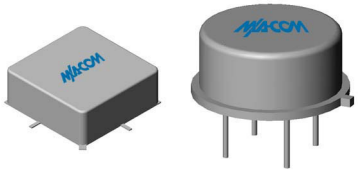
LA7 / SMLA7



50 TO 500 MHz
TO-8 CASCADABLE LIMITING AMPLIFIER

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

Specifications (Rev. Date: 3/02)*

Characteristic	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency	20-550 MHz	50-500 MHz	50-500 MHz
Small Signal Gain (min.)	12.5 dB	12.0 dB	11.0 dB
Gain Flatness (max.)	±0.2 dB	±0.5 dB	±0.7 dB
Noise Figure (max.)			
50-300 MHz	7.0 dB	8.0 dB	8.5 dB
300-500 MHz	7.5 dB	8.5 dB	9.0 dB
Power Output @ 1 dB comp. (min.)			
50-300 MHz	+12.0 dBm	+11.0 dBm	+8.0 dBm
300-500 MHz	+11.5 dBm	+10.0 dBm	+7.0 dBm
Output Limiting Level (max.)			
@ Pin = +20 dBm	+15.5 dBm	+16.0 dBm	+17.0 dBm
IP3	+28 dBm		
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.)	54 mA	56 mA	58 mA

*Measured in a 50-ohm system at +15 Vdc Nominal. IP3 in the linear region range only.

Absolute Maximum Ratings

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

Thermal Data: V_{cc} = 15 Vdc

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

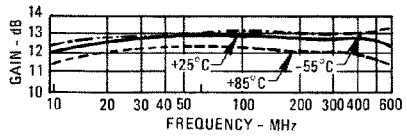
Outline Drawings

Package	TO-8	Surface Mount	SMA Connectorized
Figure	BG	AA	CE
Model	LA7	SMLA7	CLA7

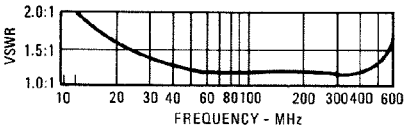
North America: 1-800-366-2266
Visit www.macom.com for complete contact and product information.

Typical Performance at 25°C

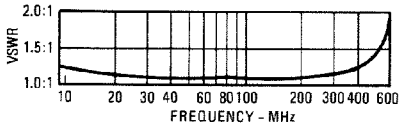
Gain



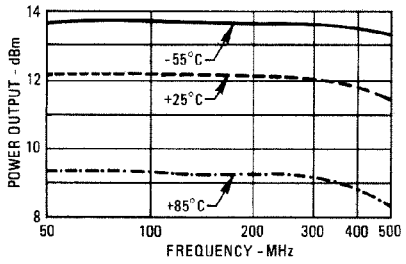
VSWR Output



VSWR Input

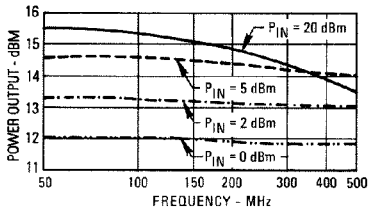


Power Output Over Temperature*

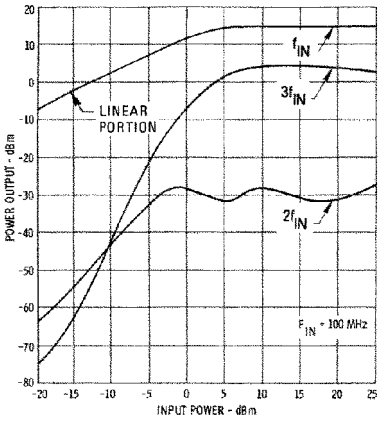


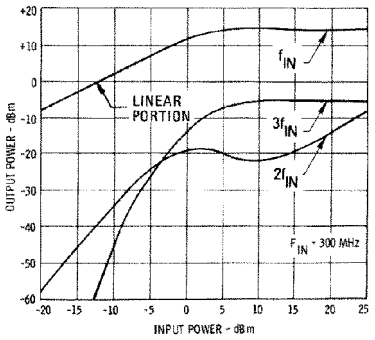
*at 1 dB Gain Compression

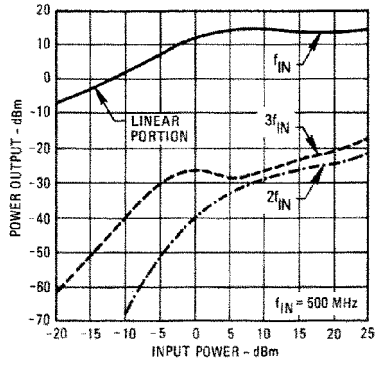
Power Output vs. Frequency



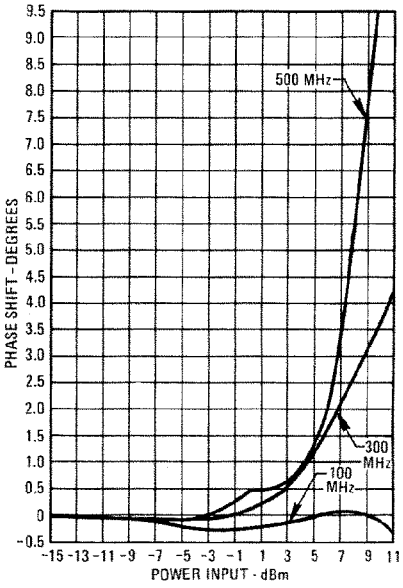
Power Output and Distortion Products



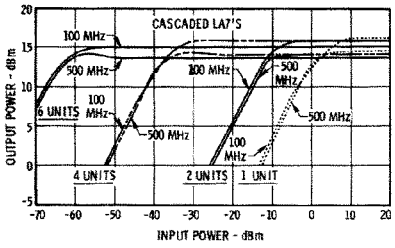




Phase Shift vs. Input Power



Limiting Characteristics



Schematic Diagram