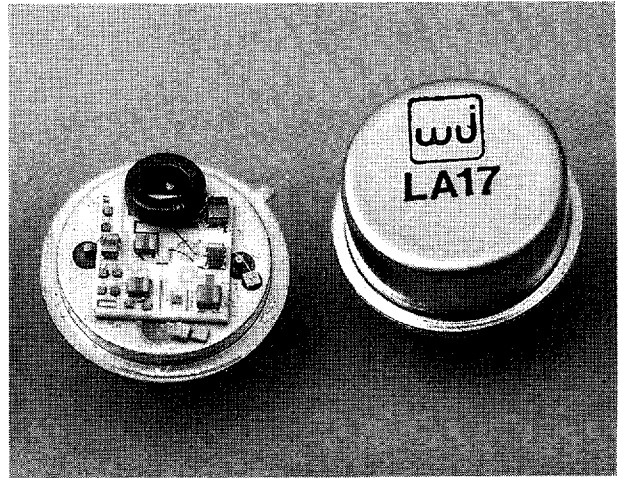


WJ-LA17 / SMLA17

10 to 1000 MHz TO-8 CASCADABLE LIMITING AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ 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



Specifications *

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

*Measured in a 50-ohm system at +15 Vdc Nominal.

Notes:

1. WJ-CLA17 is a standard WJ-LA17 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

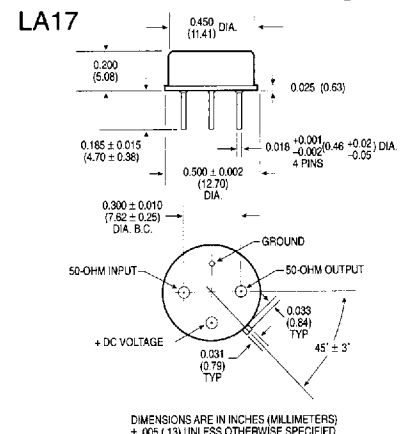
Third Order Two Tone Intercept Point.....+28 dBm (Typ.) Linear Region Only

Absolute Maximum Ratings

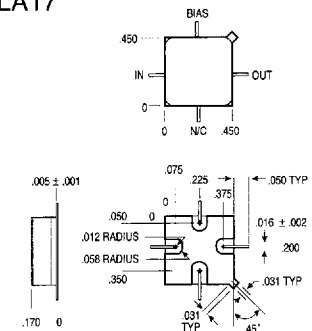
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Voltage.....	+17 Volts
Maximum Continuous RF Input Power	+23 dBm
Maximum Short Term RF Input Power (1 Minute Max.).....	400 Milliwatts
Maximum Peak Power	1 Watt (3 µsec Max.)
“S” Series Burn-In Temperature (Case)	125°C

Weight approximately 2.0 grams (0.07 oz.)

Outline Drawings



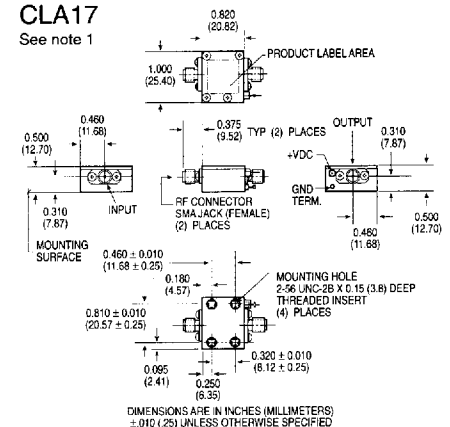
SMLA17



DIMENSIONS ARE IN INCHES (MILLIMETERS)
± 0.10 (25) UNLESS OTHERWISE SPECIFIED

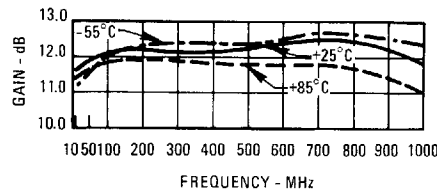
CLA17

See note 1

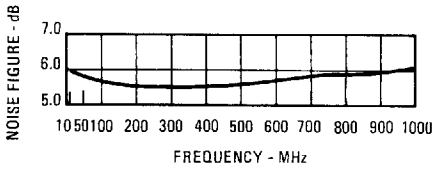


Typical Performance at 25°C

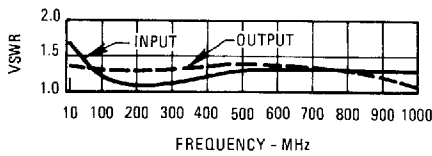
Gain



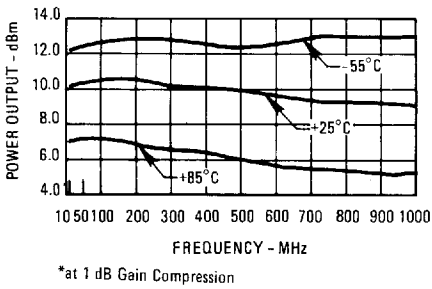
Noise Figure



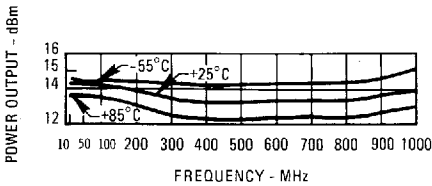
VSWR



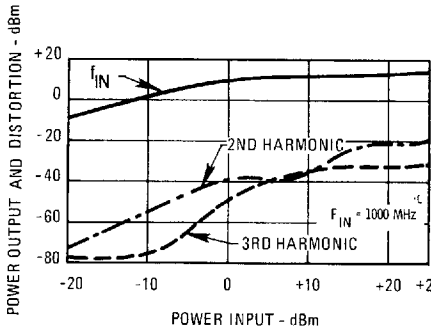
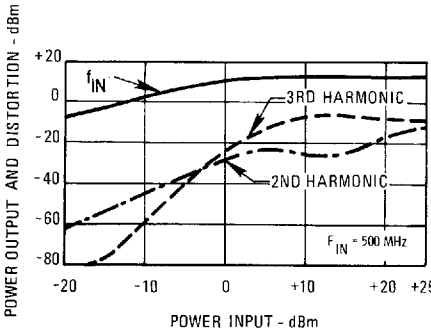
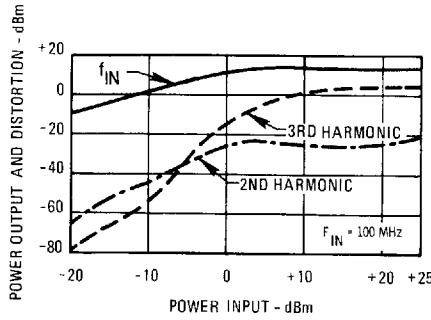
Power Output*



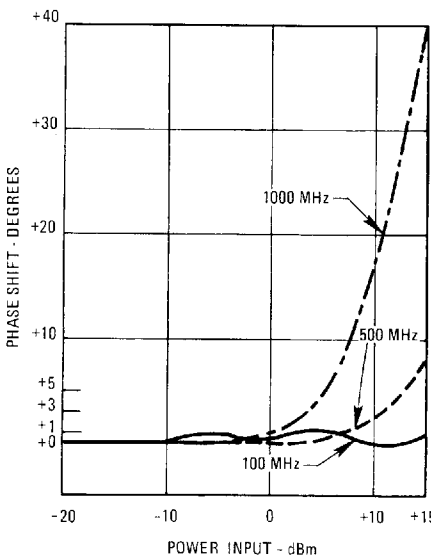
Maximum Limiting @ $P_{IN} = +20$ dBm



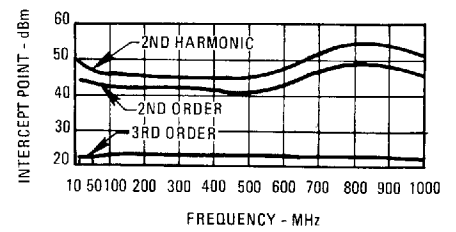
Power Output and Distortion



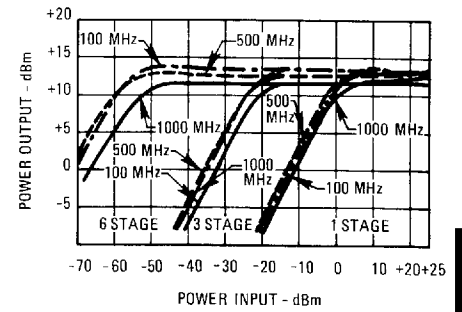
Phase Shift vs Input Power



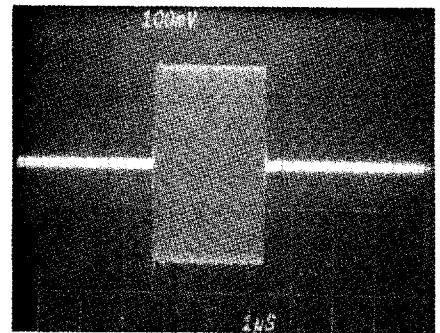
Intercept Point



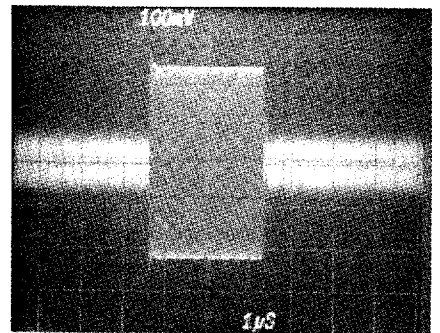
Limiting Characteristics



Output Response, 6 Cascaded LA17's



-45 dBm Input CW Pulse



+5 dBm Input CW Pulse



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
5.0	2.6	1.8	10.3
10.0	1.7	1.6	11.0
50.0	1.1	1.4	11.4
100.0	1.1	1.4	11.4
200.0	1.1	1.4	11.5
300.0	1.1	1.4	11.5
400.0	1.1	1.4	11.6
500.0	1.1	1.4	11.6
600.0	1.1	1.4	11.6
700.0	1.2	1.4	11.6
800.0	1.2	1.4	11.6
900.0	1.2	1.3	11.6
1000.0	1.3	1.3	11.5
1100.0	1.4	1.2	11.3
1200.0	1.6	1.2	10.9

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	.448	-57	3.267	-141	.081	11	.296	172
10.0	.247	-67	3.554	-161	.091	7	.219	167
50.0	.058	-63	3.698	177	.096	1	.183	160
100.0	.040	-41	3.708	167	.097	-1	.175	146
200.0	.030	-44	3.750	150	.100	-4	.171	118
300.0	.030	-33	3.764	134	.104	-8	.174	94
400.0	.044	-28	3.791	118	.108	-12	.173	70
500.0	.050	-40	3.793	102	.112	-16	.173	46
600.0	.058	-49	3.796	86	.117	-21	.171	22
700.0	.071	-53	3.794	69	.122	-27	.166	-2
800.0	.078	-65	3.808	52	.127	-33	.159	-25
900.0	.092	-67	3.782	35	.133	-39	.147	-46
1000.0	.117	-74	3.756	16	.137	-46	.124	-64
1100.0	.167	-86	3.673	-3	.144	-53	.097	-80
1200.0	.218	-99	3.511	-23	.149	-61	.074	-76

Thermal Data: V_{CC} = 15 Vdc

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