

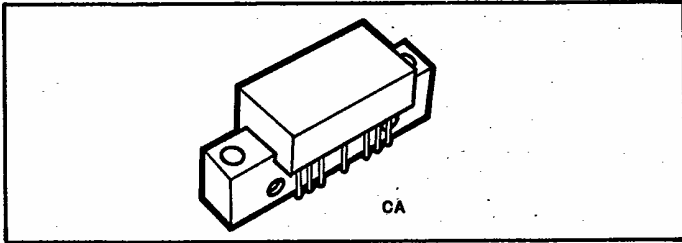
CA2875R

CA2875R Thin Film RF Linear Hybrid Amplifier

- Wide Dynamic Range: +43dBm Third Order Intercept
- Excellent Match at Input/Output: Lowest VSWR
- Low Noise Figure (Push-pull Cascode Circuit)
- All Gold (Monometallic) Metallization System Featuring Gold Transistor Die with Diffused Emitter Ballast Resistors for the Ultimate in Reliability

Applications

- High Performance 75 Ohm IF Amplifier
- Local Oscillator Buffer Amp for High Level Mixer
- Linear Driver/Repeater Amplifier for 75 Ohm Cable Communications Systems
- -15V to -24V Supply

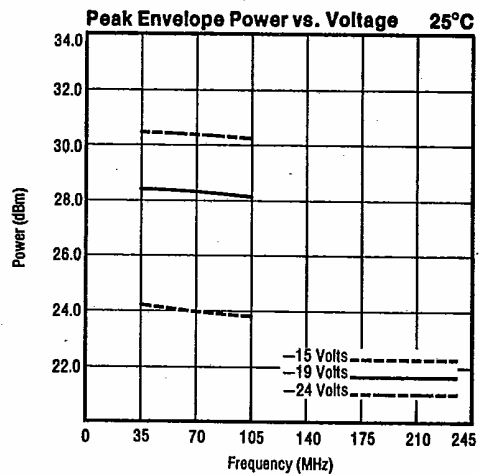
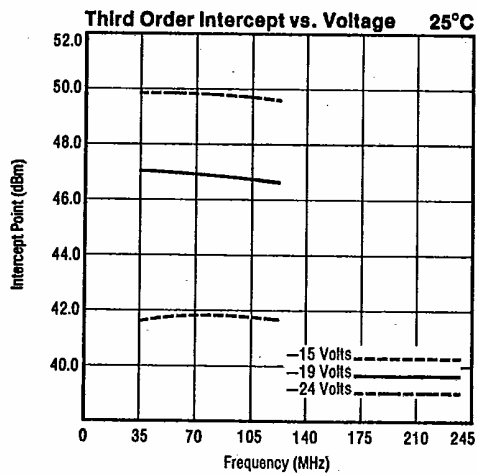
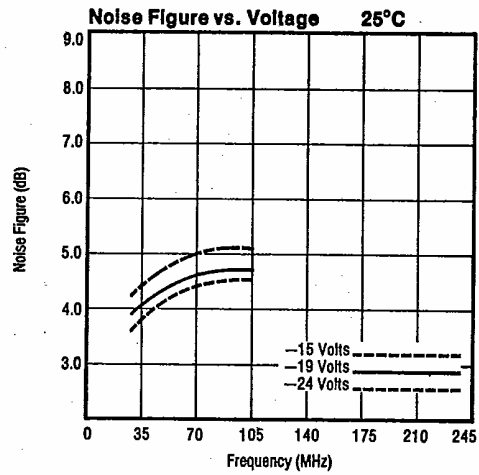
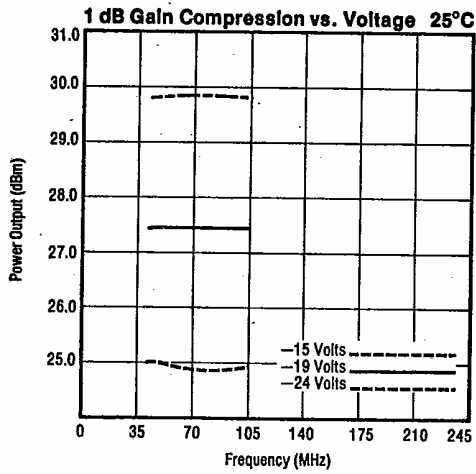
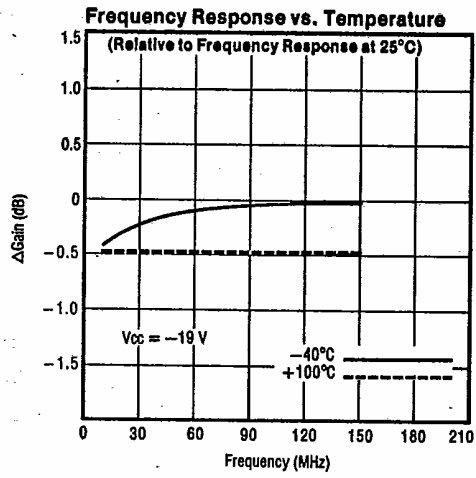
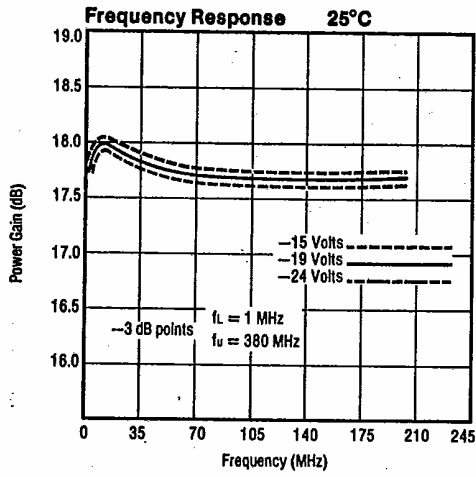


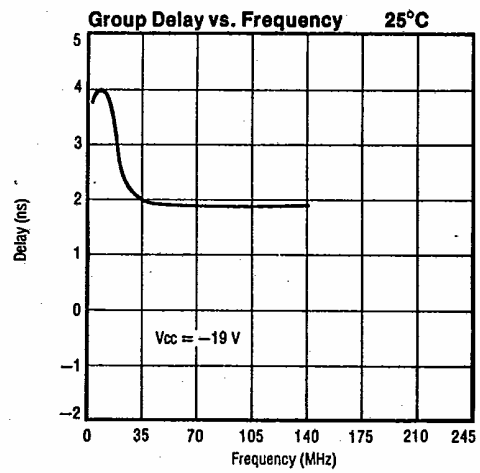
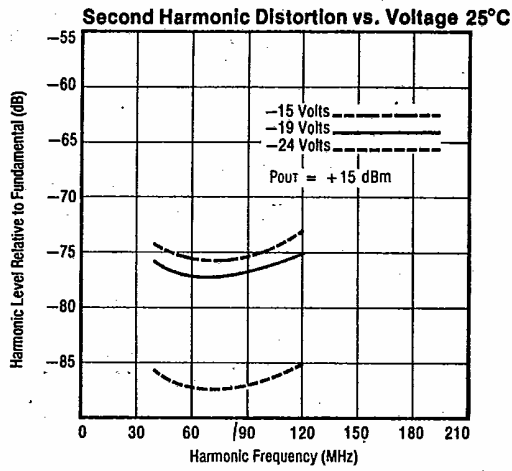
Absolute Maximum Ratings

Supply Voltage	RF Power Input	Storage Temperature	Case Operating Temperature
-28 Volts	+14dBm	-55°C to +125°C	-40°C to +100°C

Electrical Characteristics for 75Ω Systems (TCASE = +25°C and -19V)

Symbol	Characteristics	Conditions	Min.	Typ.	Max.	Units
P _G	Power Gain	f = 100MHz	17.0	17.5	18.0	dB
F _R	Frequency Response	f = 40-100MHz	—	±0.1	±0.2	dB
P _O	Power Output, 1dB Compression	f = 40-100MHz	+25	+26	—	dBm
PEP	Peak Envelope Power for Two Tone Distortion Test, See Figure 1	f = 40-100MHz @ -32dB IMD	250	300	—	mW
I _{TO}	Third Order Intercept, See Figure 1	f = 70MHz	+42	+43	—	dBm
d _{SO}	Second Harmonic Suppression	P _O = +24dBm f _{2H} = 100MHz	—	-40	—	dB
NF	Noise Figure, Broadband	f = 70MHz	—	4.5	5.0	dB
RL	Input/Output Return Loss (75Ω)	f = 40-100MHz	30	—	—	dB
I _{CC}	Supply Current	-19V	140	155	170	mA





S-Parameters

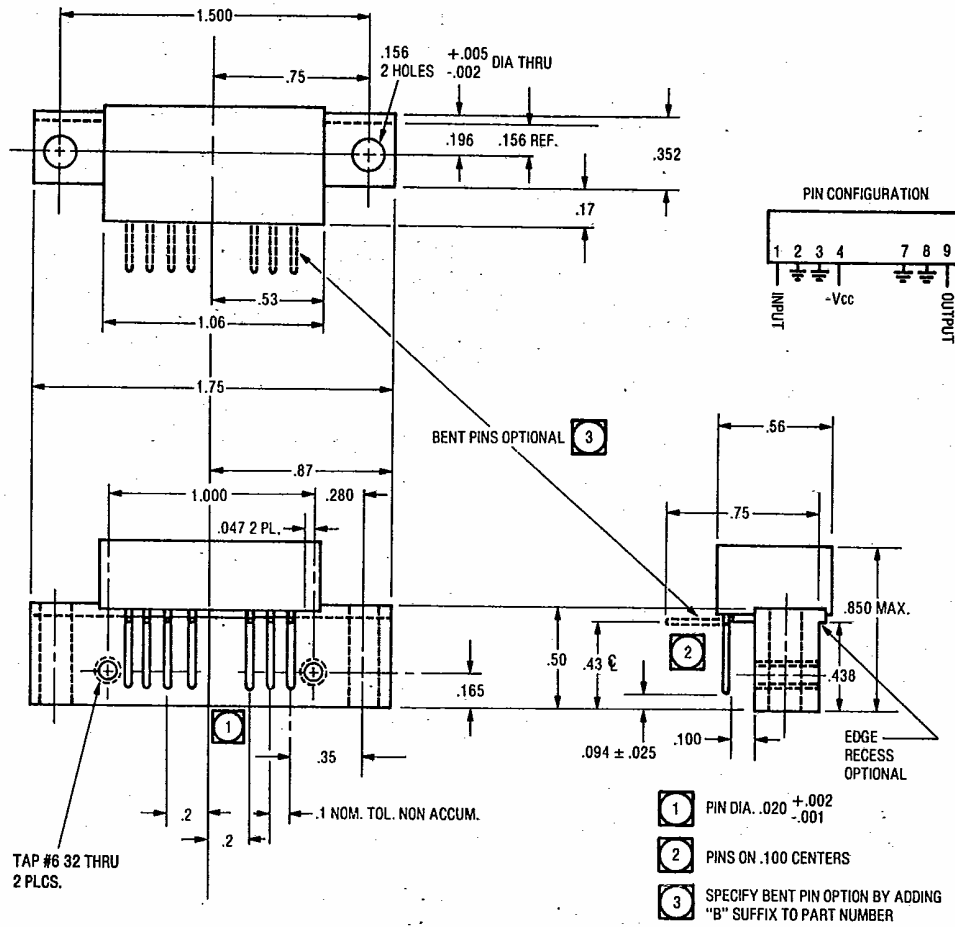
Biased at -19 Volts

T = 25°C Z₀ = 75Ω

Frequency (MHz)	S11		S21		S12		S22	
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
40	-32.1	14.8	17.6	-27.4	-24.2	161	-40.5	-31.1
50	-32.7	2.0	17.6	-34.3	-24.3	156	-39.4	-38.1
70	-33.4	-16.0	17.6	-48.1	-24.3	147	-36.0	-57.2
90	-32.8	-27.0	17.5	-60.9	-24.4	138	-32.4	-76.7
100	-32.6	-34.0	17.5	-68.0	-24.5	133	-30.3	-87.7

Magnitude in dB, Phase Angle in degrees.

PACKAGE OUTLINE



FUNCTIONAL SCHEMATIC

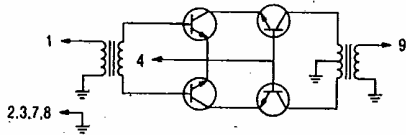
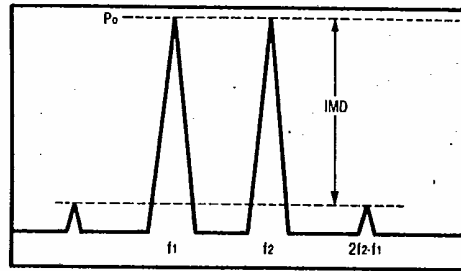


FIGURE 1. INTERMODULATION TEST



$$I_{70} = P_0 + \frac{IMD}{2} @ IMD > 60dB$$

$$PEP = 4X P_0 @ IMD = -32dB$$