

## The RF Line

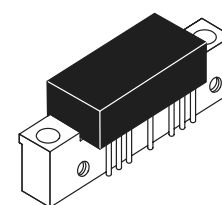
# Wideband Linear Amplifier

... designed for amplifier applications in 50 to 100 ohm systems requiring wide bandwidth, low noise and low distortion. This hybrid provides excellent gain stability with temperature and linear amplification as a result of the push-pull circuit design.

- Specified Characteristics at  $V_{CC} = 28\text{ V}$ ,  $T_C = 25^\circ\text{C}$ :
  - Frequency Range — 1 to 200 MHz
  - Output Power — 1580 mW Typ @ 1 dB Compression,  $f = 200\text{ MHz}$
  - Power Gain — 35.5 dB Typ @  $f = 100\text{ MHz}$
  - PEP — 900 mW Typ @ -32 dB IMD
  - Noise Figure — 5 dB Typ @  $f = 200\text{ MHz}$
  - ITO — 47 dBm @  $f = 200\text{ MHz}$
- All Gold Metallization for Improved Reliability
- Unconditional Stability Under All Load Conditions

# CA2832C

**35.5 dB**  
**1-200 MHz**  
**1.6 WATT**  
**WIDEBAND**  
**LINEAR AMPLIFIER**



**CASE 714F-03, STYLE 1**  
**[CA (POS. SUPPLY)]**

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	$V_{CC}$	30	Vdc
RF Power Input	$P_{in}$	+5	dBm
Operating Case Temperature Range	$T_C$	-20 to +90	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-40 to +100	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ , $V_{CC} = 28\text{ V}$ , 50 $\Omega$ system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	1	—	200	MHz
Gain Flatness ( $f = 1-200\text{ MHz}$ )	—	—	$\pm 0.5$	$\pm 1$	dB
Power Gain ( $f = 100\text{ MHz}$ )	$P_G$	34	35.5	37	dB
Noise Figure, Broadband ( $f = 200\text{ MHz}$ )	NF	—	5	6	dB
Power Output — 1 dB Compression ( $f = 1-200\text{ MHz}$ )	$P_{o\ 1dB}$	1260	1580	—	mW
Power Output — 1 dB Compression ( $f = 150\text{ MHz}$ )	$P_{o\ 1dB}$	—	2000	—	mW
Third Order Intercept (See Figure 10, $f_1 = 200\text{ MHz}$ )	ITO	45	47	—	dBm
Input/Output VSWR ( $f = 1-200\text{ MHz}$ )	VSWR	—	1.5:1	2:1	—
Second Harmonic Distortion ( $P_o = 100\text{ mW}$ , $f_{2H} = 150\text{ MHz}$ )	$d_{so}$	—	-70	-60	dB
Peak Envelope Power (Two Tone Distortion Test — See Figure 10) ( $f = 1-200\text{ MHz}$ @ -32 dB IMD)	PEP	—	900	—	mW
Supply Current	$I_{CC}$	400	435	470	mA

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## TYPICAL CHARACTERISTICS

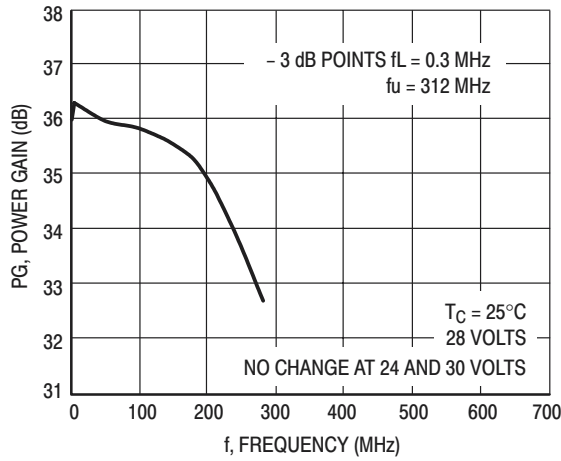


Figure 1. Power Gain versus Voltage

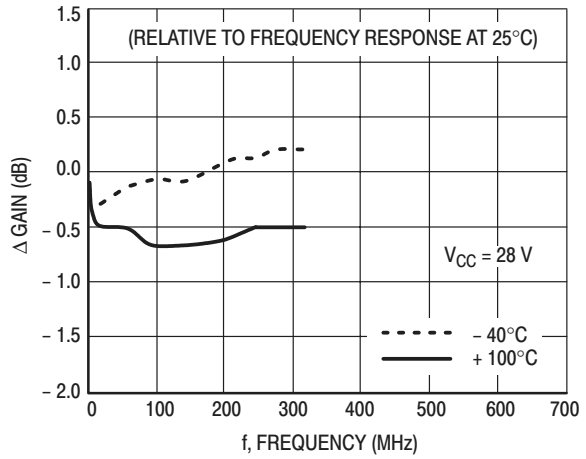


Figure 2. Relative Power Gain versus Temperature

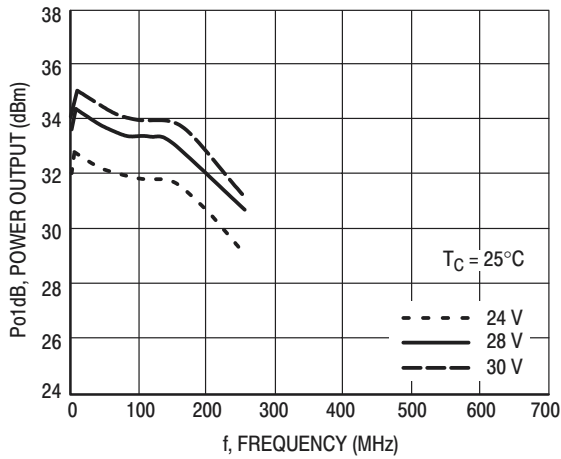


Figure 3. 1 dB Compression versus Voltage

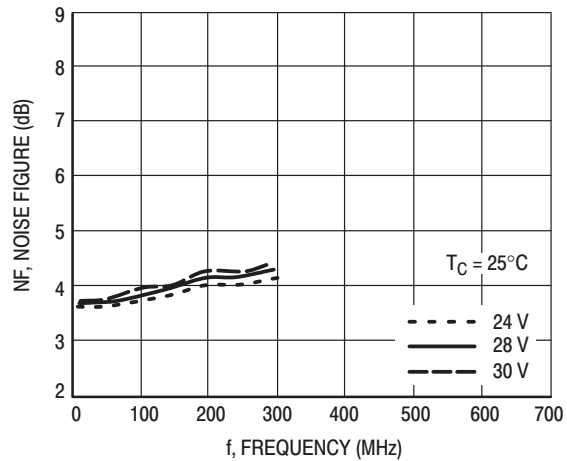


Figure 4. Noise Figure versus Voltage

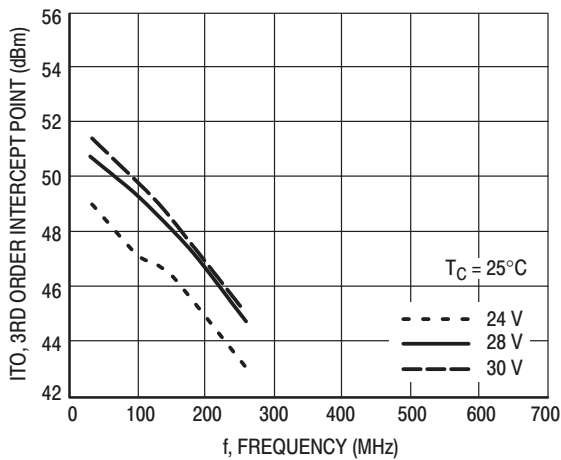


Figure 5. Third Order Intercept versus Voltage

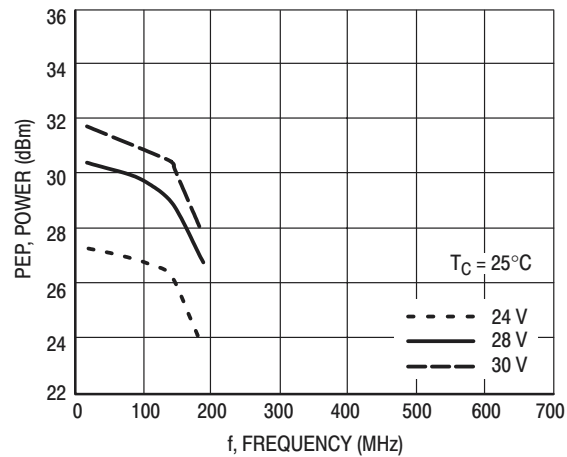


Figure 6. Peak Envelope Power versus Voltage

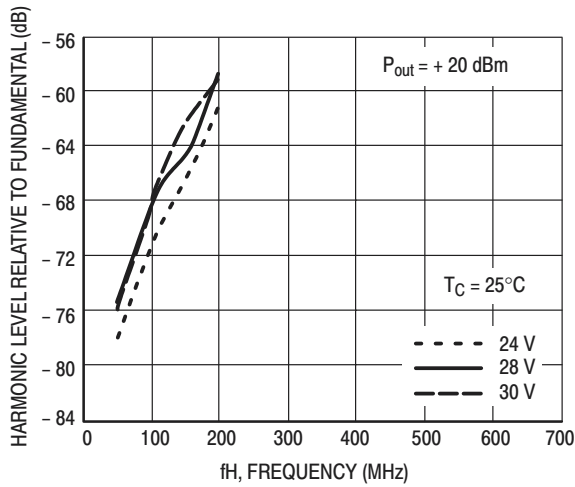


Figure 7. Second Harmonic Distortion versus Voltage

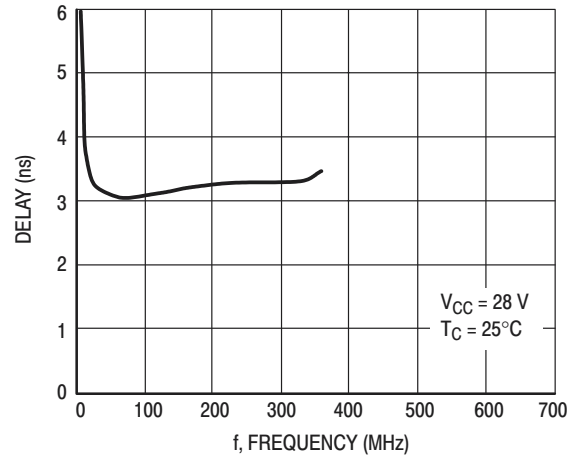


Figure 8. Group Delay versus Frequency

Biased at 28 Volts

$T_C = 25^\circ\text{C}$   $Z_o = 50\Omega$

Frequency (MHz)	S11		S21		S12		S22	
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang
1	-16.7	64	36.0	23.3	-42	-5.2	-12.9	73
10	-21.5	21	36.2	-8.4	-47	-1.4	-21.9	28
50	-18.5	6.8	35.9	-56	-44	2.8	-17.9	-10
100	-16.9	-1.8	35.7	-103	-46	-68	-15.7	-48
200	-12.9	-18	34.7	145	-49	-98	-14.9	115

Magnitude in dB, Phase Angle in degrees.

Table 1. S-Parameters

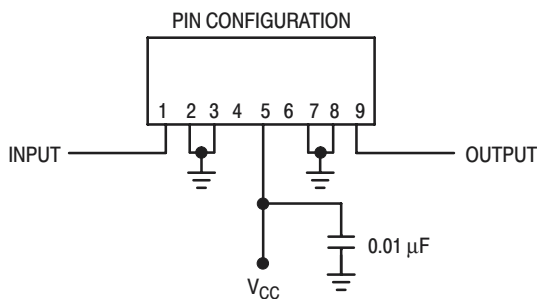
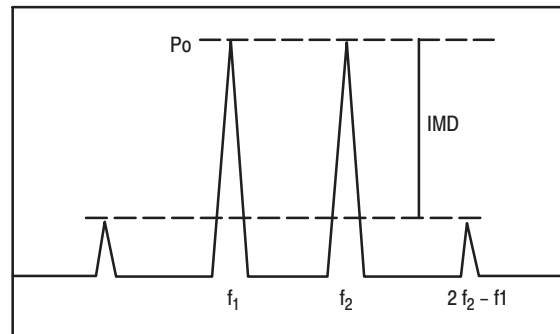


Figure 9. External Connections

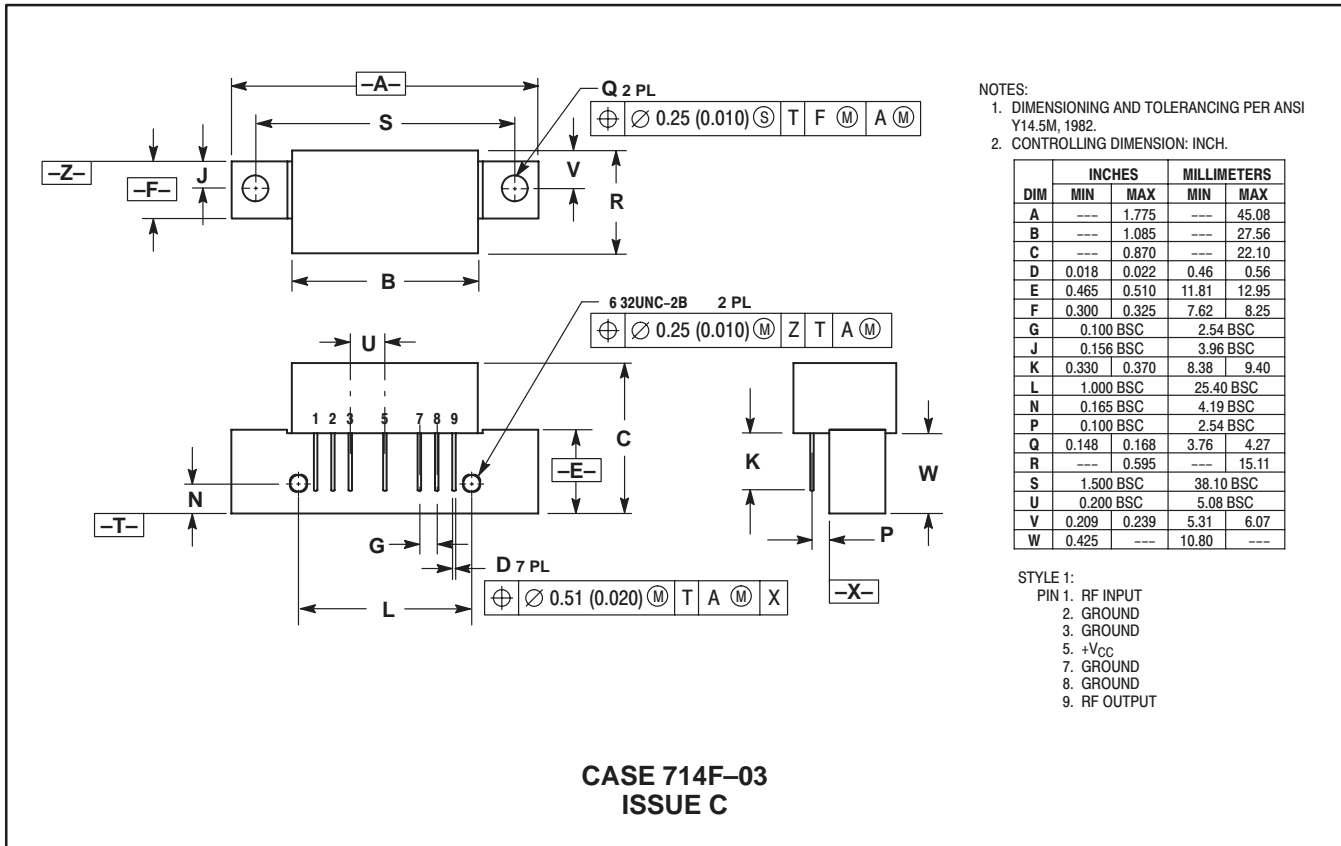


$$ITO = P_o + IMD / 2 \text{ @ } IMD > 60 \text{ dB}$$

$$PEP = 4 \times P_o \text{ @ } IMD = -32 \text{ dB}$$

Figure 10. Intermodulation Test

## PACKAGE DIMENSIONS



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