

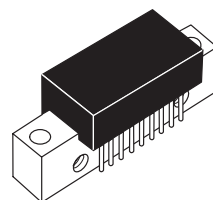
The RF Line Wideband Linear Amplifiers

... 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.

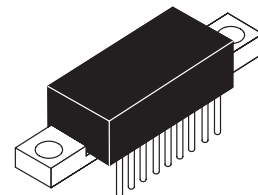
- Specified Characteristics at $V_{CC} = 28$ V, $T_C = 25^\circ\text{C}$:
Frequency Range — 10 to 1000 MHz
Output Power — 1 W Typ @ 1 dB Compression, $f = 900$ MHz
Power Gain — 15.5 Typ @ $f = 1000$ MHz
Noise Figure — 7.5 dB Typ @ $f = 500$ MHz
ITO — 40.5 dBm @ $f = 1000$ MHz
- All Gold Metallization for Improved Reliability
- Optimized for 28 V Operation

CA5800C
CA5800CS

15 dB
10–1000 MHz
1 WATT
WIDEBAND
LINEAR AMPLIFIERS



CASE 714P-03, STYLE 2
(CA)
CA5800C



CASE 714T-03, STYLE 1
CA5800CS

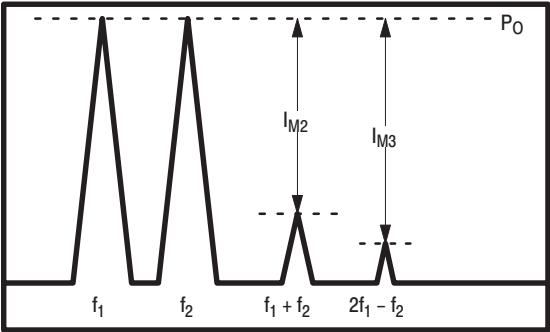
MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	32	Vdc
RF Power Input	P_{in}	+18	dBm
Operating Case Temperature Range	T_C	–20 to +100	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	–40 to +100	$^\circ\text{C}$

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

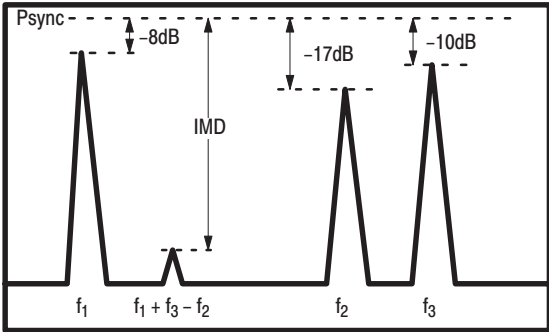
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range (3 dB Down at 10 MHz)	BW	10	—	1000	MHz
Gain Flatness ($f = 40$ –1000 MHz)	—	—	1	2	dB
Power Gain ($f = 1000$ MHz)	P_G	14.5	15.5	—	dB
Noise Figure, Broadband $f = 500$ MHz $f = 1000$ MHz	NF	—	7.5 8.5	8.5 9.5	dB
Power Output — 1 dB Compression ($f = 900$ MHz)	$P_{o\ 1dB}$	800	1000	—	mW
Third Order Intercept (See Figure 1, $f_1 = 10$ –1000 MHz)	ITO	—	40.5	—	dBm
Input/Output VSWR $f = 40$ –900 MHz $f = 900$ –1000 MHz	VSWR	— —	— —	2:1 2.6:1	—
Second Harmonic Distortion ($P_o = 100$ mW, $f_{2H} = 1000$ MHz)	d_{so}	—	–55	–45	dB
Supply Current	I_{CC}	360	400	440	mA
Intermodulation Distortion, 3 Tone (Vision Carrier = –8 dB, Sound Carrier = –10 dB, Sideband Signal = –17 dB. See Figure 2. $f = 860$ MHz, $P_{sync} = 200$ mW)	IMD	—	–58	—	dB
Second Order IMD ($P_1 = 2.75$ dBm, $f_1 = 373$ MHz, $f_2 = 450$ MHz, See Figure 1)	IM2	—	–65	–60	dB





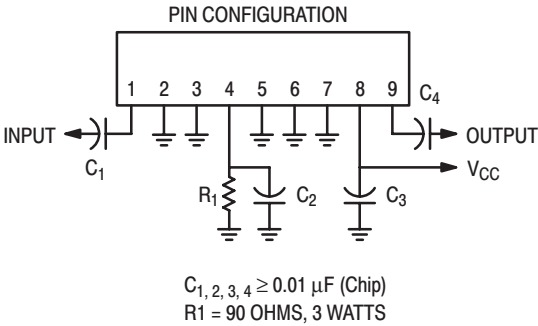
$$ITO = P_0 + \frac{IM3}{2} @ IM3 > 60 \text{ dB}$$

Figure 1. 2-Tone Intermodulation, Test B



f1: video
f2: sideband
f3: sound

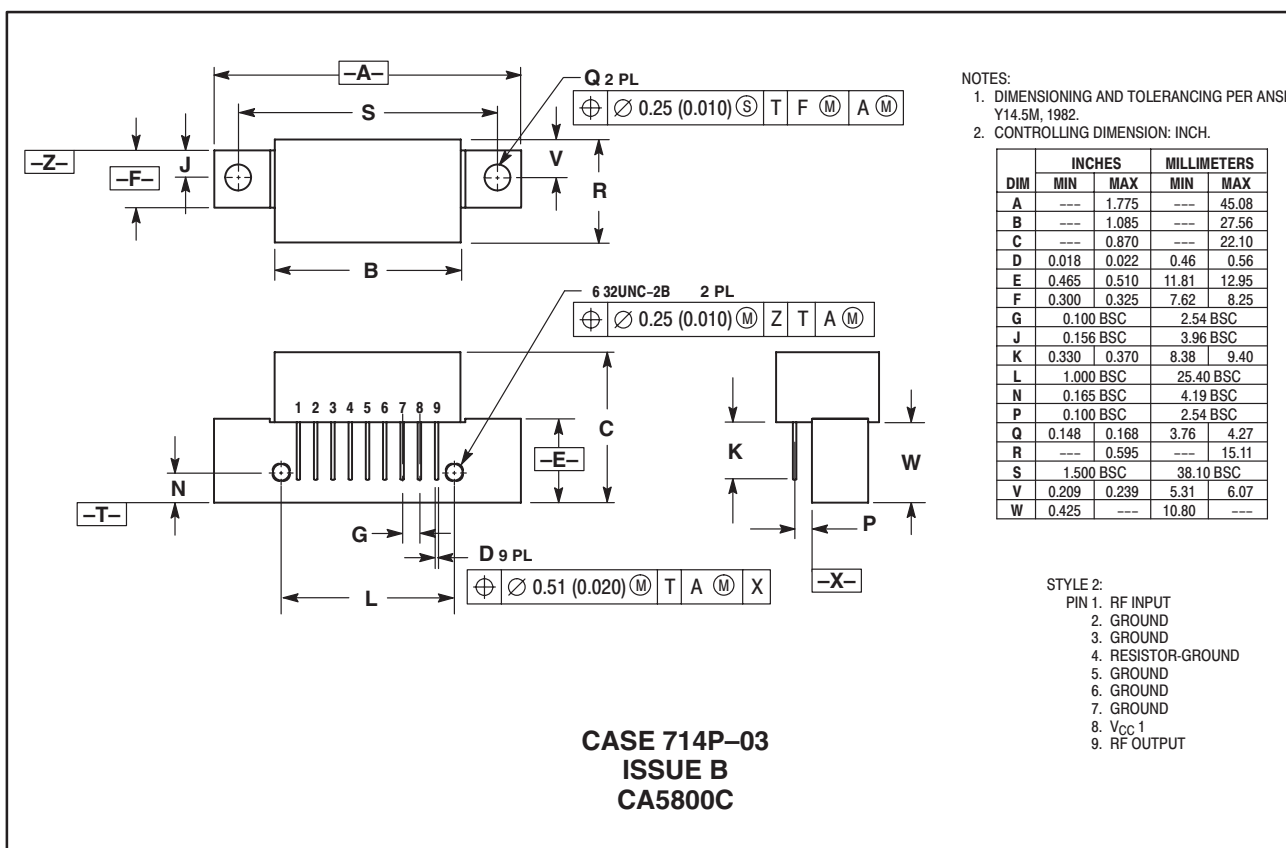
Figure 2. 3-Tone TV Intermodulation Test

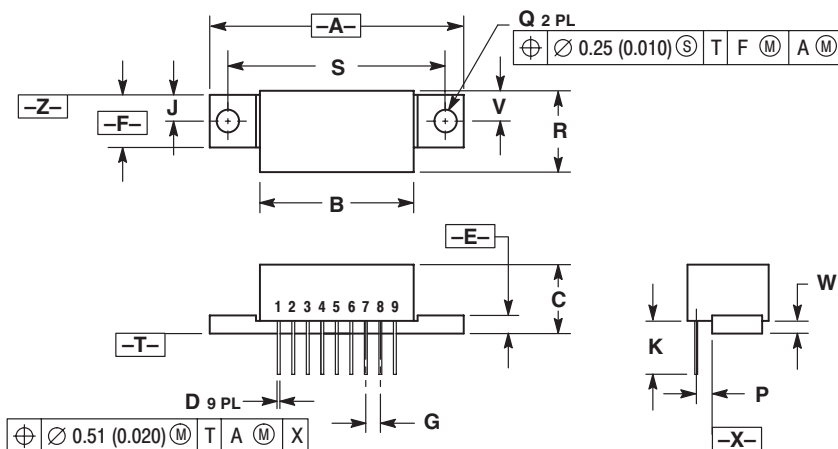


CA5800C (Case 714P-03, Style 2)
CA5800CS (Case 714T-03, Style 1)

Figure 3. External Connections

PACKAGE DIMENSIONS





- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	---	1.775	---	45.08
B	---	1.085	---	27.56
C	---	0.495	---	12.57
D	0.018	0.022	0.46	0.56
E	0.120	0.130	3.05	3.30
F	0.300	0.325	7.62	8.25
G	0.100 BSC		2.54 BSC	
J	0.156 BSC		3.96 BSC	
K	0.330	0.370	8.38	9.40
P	0.100 BSC		2.54 BSC	
Q	0.148	0.168	3.76	4.27
R	---	0.595	---	15.11
S	1.500 BSC		38.10 BSC	
V	0.209	0.239	5.31	6.07
W	0.050	---	1.27	---

- STYLE 1:
- PIN 1. RF INPUT
 - GROUND
 - GROUND
 - RESISTOR-GROUND
 - GROUND
 - GROUND
 - GROUND
 - V_{CC} 1
 - RF OUTPUT

**CASE 714T-03
ISSUE B
CA5800CS**

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CA5800C/D