

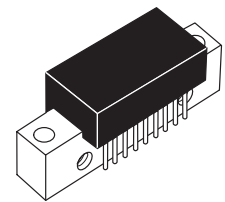
The RF Line Wideband Linear Amplifiers

... 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.

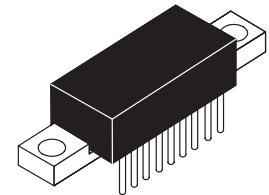
- Specified Characteristics at $V_{CC} = 28\text{ V}$, $T_C = 25^\circ\text{C}$:
 - Frequency Range — 10 to 1000 MHz
 - Output Power — 1 W Typ @ 1 dB Compression, $f = 900\text{ MHz}$
 - Power Gain — 15.5 Typ @ $f = 1000\text{ MHz}$
 - Noise Figure — 7.5 dB Typ @ $f = 500\text{ MHz}$
 - ITO — 40.5 dBm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

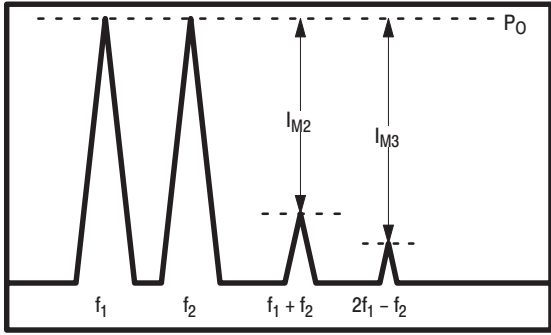
ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$, $V_{CC} = 28\text{ V}$, 50 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range (3 dB Down at 10 MHz)	BW	10	—	1000	MHz
Gain Flatness ($f = 40\text{--}1000\text{ MHz}$)	—	—	1	2	dB
Power Gain ($f = 1000\text{ MHz}$)	P_G	14.5	15.5	—	dB
Noise Figure, Broadband $f = 500\text{ MHz}$ $f = 1000\text{ MHz}$	NF	—	7.5 8.5	8.5 9.5	dB
Power Output — 1 dB Compression ($f = 900\text{ MHz}$)	$P_{o\ 1dB}$	800	1000	—	mW
Third Order Intercept (See Figure 1, $f_1 = 10\text{--}1000\text{ MHz}$)	ITO	—	40.5	—	dBm
Input/Output VSWR $f = 40\text{--}900\text{ MHz}$ $f = 900\text{--}1000\text{ MHz}$	VSWR	—	—	2:1 2.6:1	—
Second Harmonic Distortion ($P_o = 100\text{ mW}$, $f_{2H} = 1000\text{ MHz}$)	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. $f = 860\text{ MHz}$, $P_{sync} = 200\text{ mW}$)	IMD	—	-58	—	dB
Second Order IMD ($P_1 = 2.75\text{ dBm}$, $f_1 = 373\text{ MHz}$, $f_2 = 450\text{ MHz}$, See Figure 1)	IM2	—	-65	-60	dB

ARCHIVE INFORMATION

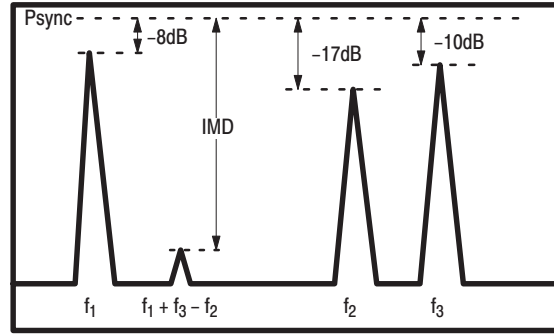
ARCHIVE INFORMATION





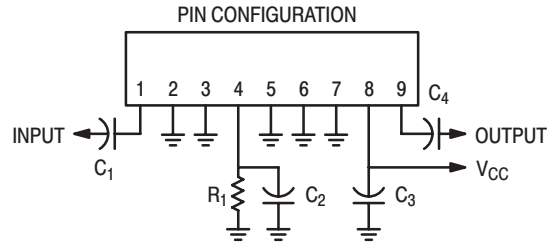
$$ITO = P_0 + \frac{IM3}{2} @ IM3 > 60 \text{ dB}$$

Figure 1. 2-Tone Intermodulation, Test B



f1: video
f2: sideband
f3: sound

Figure 2. 3-Tone TV Intermodulation Test

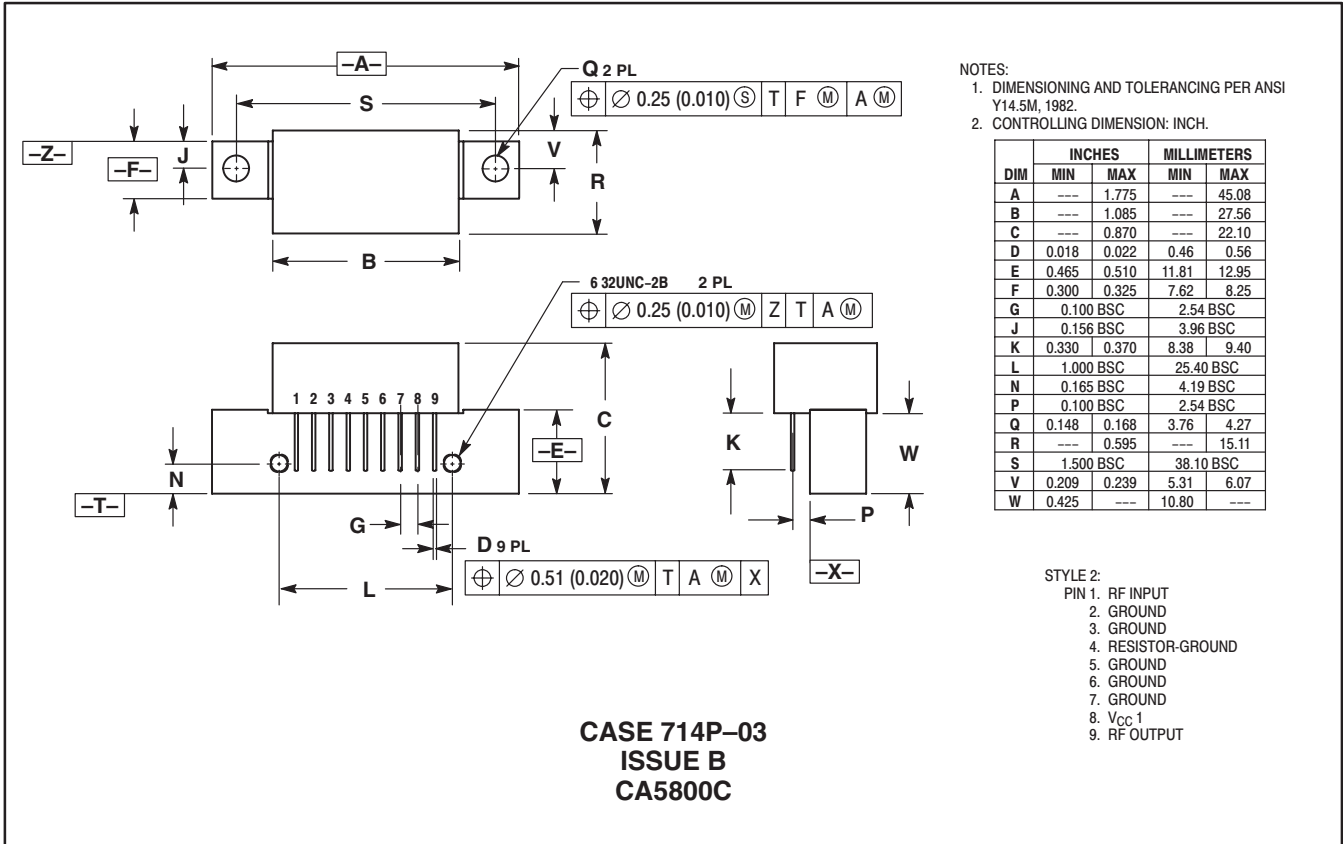


$C_1, 2, 3, 4 \geq 0.01 \mu\text{F}$ (Chip)
 $R_1 = 90 \text{ OHMS}, 3 \text{ WATTS}$

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

Figure 3. External Connections

PACKAGE DIMENSIONS



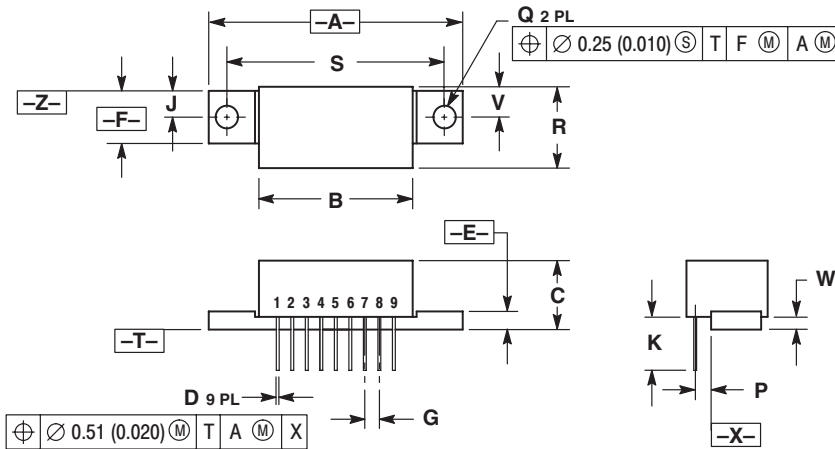
- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	---	1.775	---	45.08
B	---	1.085	---	27.56
C	---	0.870	---	22.10
D	0.018	0.022	0.46	0.56
E	0.465	0.510	11.81	12.95
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
L	1.000 BSC		25.40 BSC	
N	0.165 BSC		4.19 BSC	
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	0.425	---	10.80	---

- STYLE 2:
 PIN 1. RF INPUT
 2. GROUND
 3. GROUND
 4. RESISTOR-GROUND
 5. GROUND
 6. GROUND
 7. GROUND
 8. V_{CC} 1
 9. RF OUTPUT

ARCHIVE INFORMATION

ARCHIVE INFORMATION



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
 2. GROUND
 3. GROUND
 4. RESISTOR-GROUND
 5. GROUND
 6. GROUND
 7. GROUND
 8. V_{CC} 1
 9. RF OUTPUT

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

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