

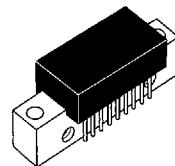
The RF Line Wideband Linear Amplifiers

... 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.

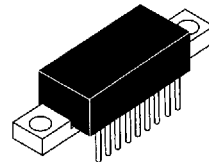
- Specified Characteristics at $V_{CC} = 15\text{ V}$, $T_C = 25^\circ\text{C}$:
 Frequency Range — 10 to 1000 MHz
 Output Power — 1 W Typ @ 1 dB Compression, $f = 900\text{ MHz}$
 Power Gain — 15.5 Typ @ $f = 1000\text{ MHz}$
 PEP — 1 W Typ @ -32 dB IMD
 Noise Figure — 7.5 dB Typ @ $f = 500\text{ MHz}$
 ITO — 40.5 dBm @ $f = 1000\text{ MHz}$
- All Gold Metallization for Improved Reliability
- Optimized for 15 Volt Operation

CA5815C
CA5815CS

15 dB
10-1000 MHz
1 WATT
WIDEBAND
LINEAR AMPLIFIERS



CASE 714P-03, STYLE 3
(CA)
CA5815C



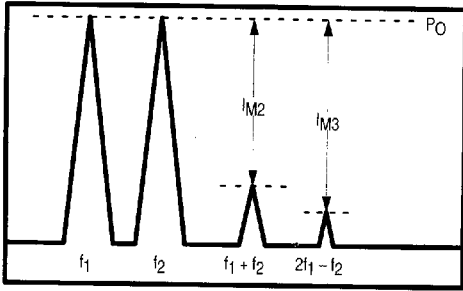
CASE 714T-03, STYLE 2
(SIP)
CA5815CS

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	18	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	$^\circ\text{C}$

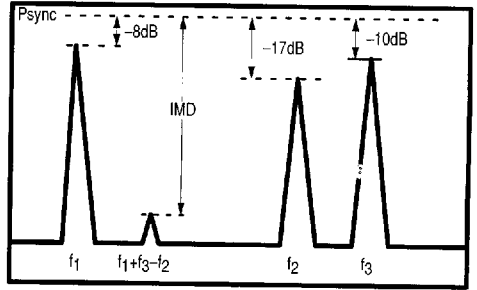
ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$, $V_{CC} = 15\text{ V}$, 50 Ω system unless otherwise noted)

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, $f = 10\text{--}1000\text{ MHz}$)	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}	—	700	760	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 ($P_o = 2.75\text{ dBm}$, $f_1 = 373\text{ MHz}$, $f_2 = 450\text{ MHz}$, See Figure 1.)	IM2	—	-65	-60	dB



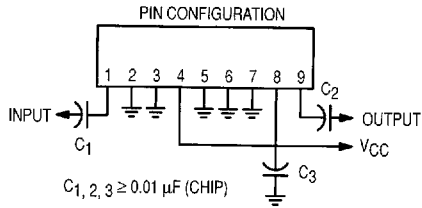
$$I_{TO} = P_O + \frac{IM_3}{2} @ IM_3 < 60 \text{ dB}$$

Figure 1. 2-Tone Intermodulation, Test B



f1: video
f2: sideband
f3: sound

Figure 2. 3-Tone TV Intermodulation Test



CA5815C (Case 714P-03, Style 3)
CA5815CS (Case 714T-03, Style 2)

Figure 3. External Connections