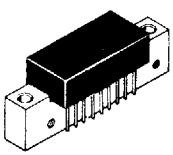
CA4815
CA4815H

The RF Line
Wideband Linear Amplifiers

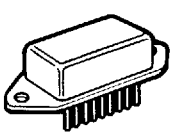
. . . designed for amplifier applications in 50 to 100 ohm systems requiring wide bandwidth, low noise and low distortion. This hybrid provides excellent gain stability with temperature and linear amplification as a result of the push-pull circuit design.

- Specified Characteristics at V_{CC} = 15 V, T_C = 25°C:
  - Frequency Range — 10 to 1000 MHz
  - Output Power — 400 mW Typ @ 1 dB Compression, f = 500 MHz
  - Power Gain — 17 dB Typ @ f = 100 MHz
  - PEP — 320 mW Typ @ −32 dB IMD
  - Noise Figure — 6.5 dB Typ @ f = 500 MHz
  - ITO — 40 dBm Typ @ f = 1000 MHz
- All Gold Metallization for Improved Reliability
- Optimized for 15 V Operation

17 dB
10–1000 MHz
400 mWATT
WIDEBAND
LINEAR AMPLIFIERS



CASE 714P-01, STYLE 3
(CA)
CA4815



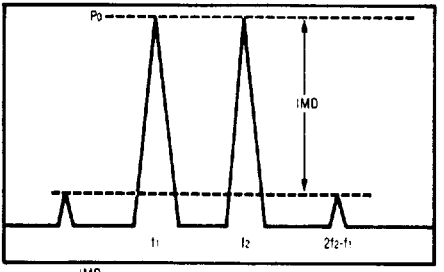
CASE 826-01, STYLE 7
(SIP)
CA4815H

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	18	Vdc
RF Power Input	P_{in}	+14	dBm
Operating Case Temperature Range	T_C	−40 to +100	°C
Storage Temperature Range	T_{stg}	−55 to +125	°C

ELECTRICAL CHARACTERISTICS (T_C = 25°C, V_{CC} = 15 V, 50 Ω system unless otherwise noted)

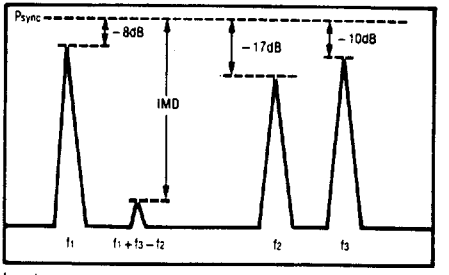
Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	10	—	1000	MHz
Gain Flatness (f = 10–1000 MHz)	—	—	±0.5	±1	dB
Power Gain (f = 100 MHz)	P_G	16	17	18	dB
Noise Figure, Broadband f = 500 MHz f = 1000 MHz	NF	— —	6.5 7.5	8 9	dB
Power Output — 1 dB Compression (f = 500 MHz)	$P_{o1\,dB}$	300	400	—	mW
Third Order Intercept (See Figure 1, f_1 = 10–1000 MHz)	ITO	38	40	—	dBm
Input/Output VSWR f = 40–860 MHz f = 10–1000 MHz	VSWR	— —	— —	2:1 2.5:1	—
Second Harmonic Distortion (P_o = 100 mW, f_{2H} = 1000 MHz)	d_{so}	—	−50	−40	dB
Peak Envelope Power (Two Tone Distortion Test — See Figure 1) (f = 500 MHz @ −32 dB IMD)	PEP	—	320	—	mW
Supply Current	I_{CC}	360	380	400	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	—	−60	—	dB



$ITO = Po + \frac{IMD}{2}$ @ IMD > 60dB

PEP = 4X Po @ IMD = −32dB

Figure 1. 2-Tone Intermodulation Test



f1: video
f2: sideband
f3: sound

Figure 2. 3-Tone TV Intermodulation Test

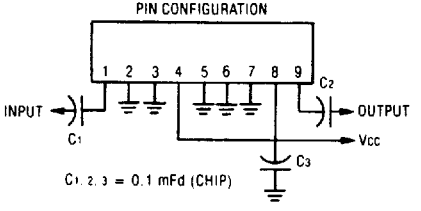


Figure 3. External Connections