



ACA2784

1 GHz, 21 dB Gain

High Output Power Doubler Amplifier
ADVANCED PRODUCT INFORMATION - Rev 0.0

FEATURES

- 21.5 dB Gain
- 40 MHz to 1 GHz Operating Range
- 0.8 dB Gain Flatness
- 24 V Supply
- Supply Current: 520 mA (Typ.)
- Very Low Distortion & Noise
- Robust Design and Insensitive to Voltage Transients
- GaAs Monolithic IC-Based
- Standard SOT115J Package

APPLICATIONS

- Deep Fiber Nodes in CATV Distribution Systems

PRODUCT DESCRIPTION

The ACA2784 is a GaAs Hybrid Amplifier for CATV HFC distribution systems. It consists of two pairs of parallel amplifiers that are optimized for exceptionally low distortion and noise figure. The ACA2784 is offered in a standard SOT115J package.

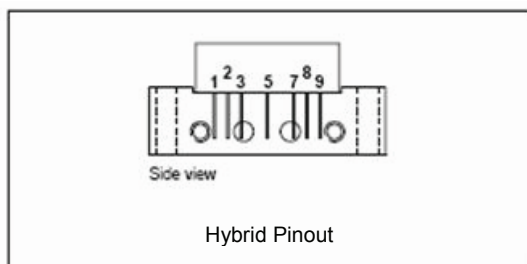
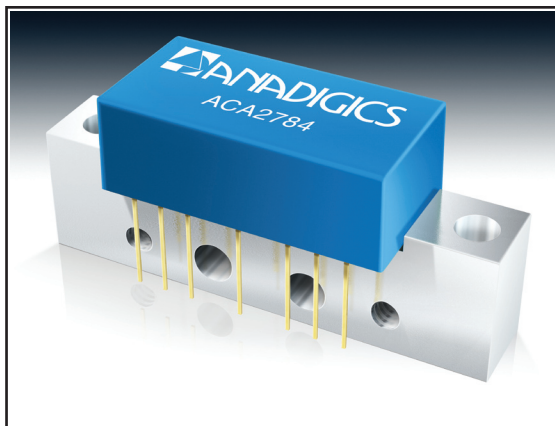


Figure 2: Hybrid Pinout

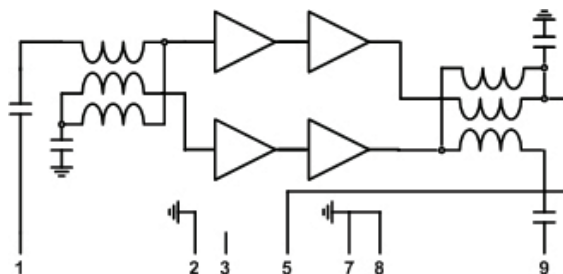


Figure 1: Simplified Hybrid Internal Arrangement

Table 1: SOJ115J Pinning

PIN	Description
1	RF Input
2	GND
3	GND or No Connection
5	24 V
7, 8	GND
9	RF Output

Table 2: Absolute Minimum and Maximum Ratings

	Symbol	Min	Typ	Max	Unit	Conditions
Supply Voltage	V _{DD}	-	+24	+28	V _{DC}	
RF Power at inputs	-	-	-	+70	dBmV	single tone
Operating mounting Base temperature	T _{MB}	-20	-	+100	°C	
Storage Temperature	T _{STG}	-40		+100	°C	

Table 3: Operating Ranges

	Symbol	Min	Typ	Max	Unit	Conditions
RF Frequency	-	40	-	1000	MHz	

Table 4: Electrical Characteristics(Test condition: 40 to 870 MHz, T_{MB} = 30°C, 75 Ω loading, see note 1)

	Symbol	Min	Typ	Max	Unit	Conditions
Gain	G _P	-	21.5	-	dB	
Slope cable equivalent	SL	-	0.2	-	dB	
Gain Flatness	FL	-	0.8	-	dB	
Input Return Loss	S ₁₁	-	-	-17	dB	
Output Return Loss	S ₂₂	-	-	-17	dB	
CTB	-	-	-76	-	dBc	
CSO	-	-	-69	-	dBc	
XMOD	-	-	-63	-	dBc	
Noise Figure	-	-	6.5	-	dB	
Supply Current	-	-	520	-	mA	

Note:

(1) +58 dBmV Output (referenced to 1 GHz); 79 NTSC Analog Channels; 14 dB tilt at 1 GHz; plus 75 digital channels with QAM at -6 dB offset above 550 MHz.

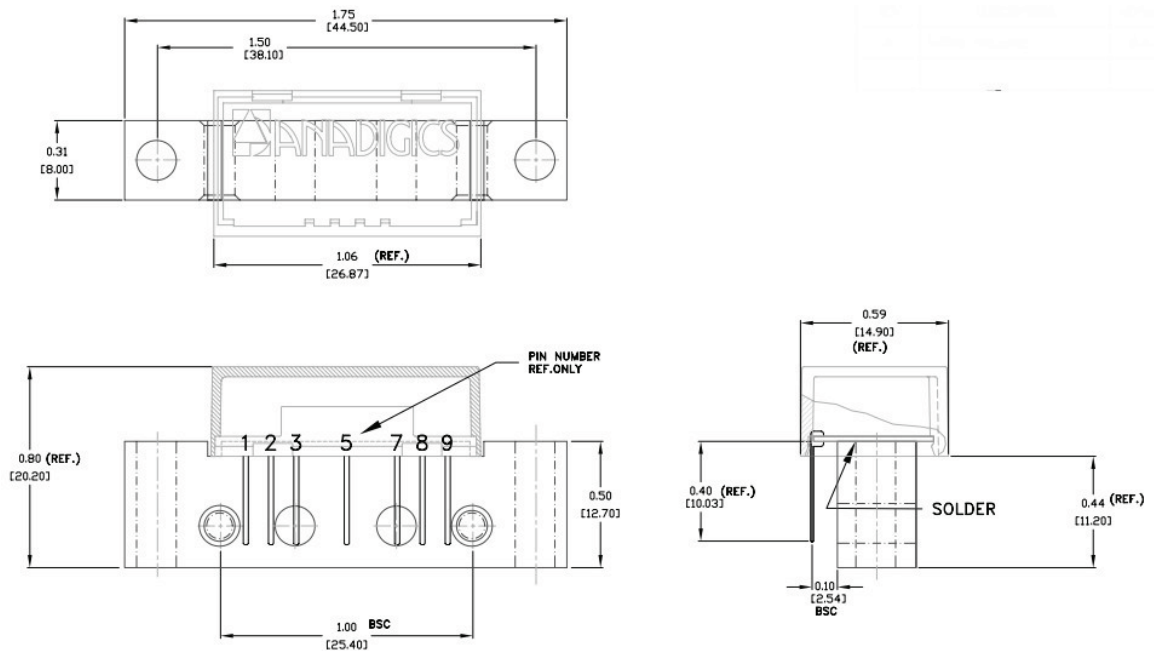


Figure 3: Hybrid Line Amp Physical Outline

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