ACA2401S7

750/870 MHz Power Doubler CATV
Line Amplifier MMIC

Advanced Product Information - Rev 3

FEATURES

- 21.5 dB Gain
- Very Low Distortion
- Excellent Input/Output Match
- Low DC Power Consumption
- Good RF Stability with high VSWR Load Conditions
- Surface Mount Package
- Package Fully Automatic Assembly Compatible
- Low Cost
- Repeatability of Monolithic Fabrication
- Meets Cenelec Standard



S7
16 Pin Plastic Pin Package

Description

The ACA2401 surface mount monolithic GaAs RF Linear Amplifier has been developed to replace, in new designs, the standard CATV Hybrid amplifiers currently in use. The MMIC consists of two pair of parallel amplifiers. The Amplifiers are optimized for exceptionally low distortion and noise figure while providing flat gain and excellent input and output return loss. A Hybrid equivalent is formed when one ACA2401 is cascaded between two transmission line baluns.

Absolute Maximum Ratings

PARAMETER	MIN	MAX	UNITS
V_{DD}/V_{RFOUT}	0	28	VDC
RF_{IN}	-	+70	dBmV
Storage Temperature	-65	+150	° C
Soldering Temperature	-	+260	° C
Soldering Time	-	5.0	Sec
Thermal Resistance	-	3.8	° C/W
Operating Temperature	-40	110	° C

The ACA2401 is designed as an output stage and is specifited at +44 dBmV flat ouput.

Electrical Specifications (TA=+25°C, VDD=24V, test circuit shown in fig.1)

PARAMETER	ACA2401		
	MIN	TYP	MAX
Bandwidth[1]	40	-	870
Gain @870 MHz[1]	-	21.5	-
Cable Equivalent Slope[1]	-	0.5	-
Gain Flatness[1]	-	± 0.2	-
Noise Figure[1]	-	4.5	-
CTB[1,2] 77 Channels 110 Channels 128 Channels	-	 -72 -70 -68	-
CSO[1,2] 77 Channels 110 Channels 128 Channels	-	 -72 -72 -70	-
XMOD[1,2] 77 Channels 110 Channels 128 Channels	-	 -71 -68 -66	-
Supply Current	-	390	-
Return Loss (Input/Output)[2]	18	22	-

Notes:
1. *Measured with a balun on input and output of the device. See Figure 1 for test setup.*
2. *Parts measured with 110 channel flat output @ +44 dBmV/channel.*

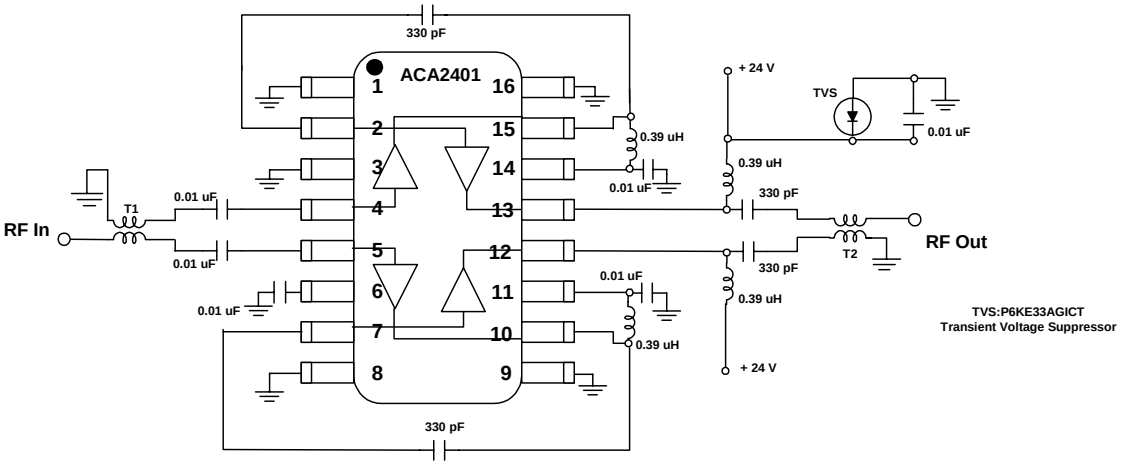
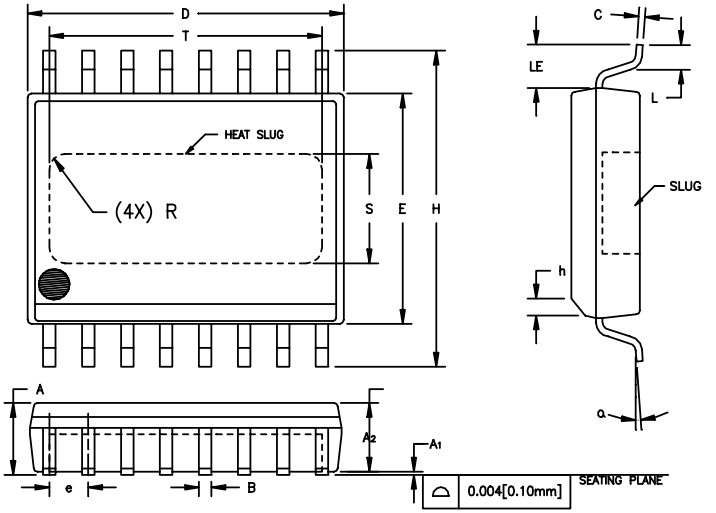


Figure 1: Test Circuit for ACA2401

Package Outline



SYMBOL	INCHES		MILLIMETERS		NOTE
	MIN.	MAX.	MIN.	MAX.	
A	0.087	0.098	2.21	2.49	
A1	0.000	0.004	0.00	0.10	6
A2	0.087	0.094	2.21	2.39	
B	0.013	0.019	0.33	0.48	
C	0.007	0.009	0.18	0.23	
D	0.398	0.412	10.11	10.46	2
E	0.290	0.300	7.37	7.62	3
e	0.050 BSC		1.27 BSC		4
H	0.394	0.418	10.01	10.62	
h	0.010	0.028	0.25	0.71	
L	0.024	0.040	0.61	1.02	
LE	0.052	—	1.32	—	
α	0°	8°	0°	8°	
S	0.120	0.140	3.05	3.56	5
T	0.330	0.350	8.38	8.89	5
R	REF. 0.015		REF. 0.38		5

NOTES:

1. CONTROLLING DIMENSION: INCHES
2. DIMENSION "D" DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS AND GATE BURRS SHALL NOT EXCEED 0.006 [0.15mm] PER SIDE.
3. DIMENSION "E" DOES NOT INCLUDE INTER-LEAD FLASH OR PROTRUSIONS. INTER-LEAD FLASH AND PROTRUSIONS SHALL NOT EXCEED 0.010 [0.25mm] PER SIDE.
4. MAXIMUM LEAD TWIST/SKEW TO BE ±0.005 [0.13mm].
5. DIMENSIONS "S", "T" AND "R" INDICATE EXPOSED SLUG AREA.
6. STANDOFF HEIGHT (A_1) MEASURED FROM BOTTOM OF SLUG.

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