

# AE617 (Preliminary)

# RFHIC

## Product Features

- Small size
- Higher Gain
- Higher linearity
- SOIC-8 SMD Type package
- Higher productivity
- Lower manufacturing cost
- -63dBc CSO 79 Channels @ +39dBmV/ch
- -64dBc CTB 79 Channels @ +39dBmV/ch
- -57dBc XMD 79 Channels @ +39dBmV/ch
- Low Noise Figure

## Application

- Low Noise Amplifier for CATV, Satellite
- Cable Modem
- FTTH (G-PON, GE-PON)
- Optical node



## Description

AE617 is designed as low cost drive amplifiers for many applications including FTTH, CATV System. This MMIC is based on Gallium Arsenide Enhancement Mode pHEMT which shows low current draw and very low noise. The data in this spec sheet is valid only for 75 ohm application. 50 ohm data is in a separate spec sheet.

## Specifications

PARAMETER	UNIT	MIN	TYP	MAX	Condition
Frequency	MHz	50 ~ 1000			
Gain	dB	20	22		
Input Return Loss	dB		-22		
Output Return Loss	dB		-17		
Output IP3	dBm	38	41		At 500MHz/10dBm 2tone
1dB Compression Point	dBm	25	28		At 500MHz
Noise Figure	dB		2.3	3.5	
CSO	30 ~ 870MHz	dBc	-63	-58	79 channel, +39dBmV/ch
CTB		dBc	-64	-59	79 channel, +39dBmV/ch
XMOD		dBc	-57	-52	79 channel, +39dBmV/ch
DC Current	mA		260		Vdd = 8.0V

### NOTE

1. Test conditions unless otherwise noted. Test Freq = 500MHz, T=25°C, Vdd=8V, 75Ω system
2. OIP3 measured with 2 tones at an output power of +10dBm/tone separated by 1MHz, Test Freq = 500MHz

## Absolute Minimum and Maximum Ratings

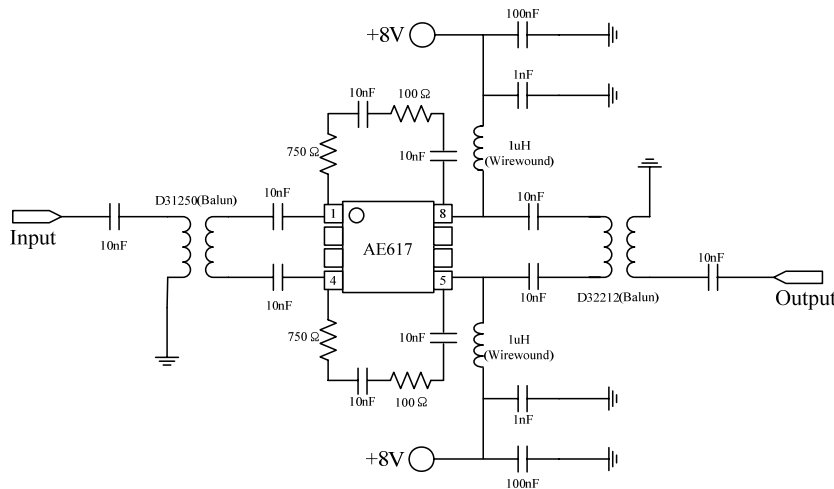
PARAMETER	UNIT	MIN	TYP	MAX
Device Voltage	VDC		+8	+9
Operating Temperature	°C	-40		+85
Storage Temperature	°C	-40		+150

# AE617 (Preliminary)

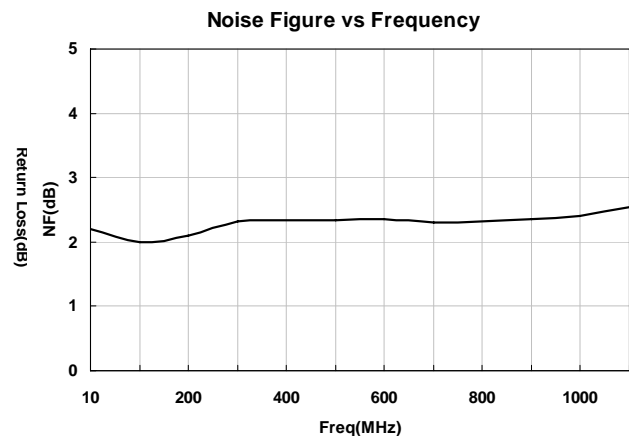
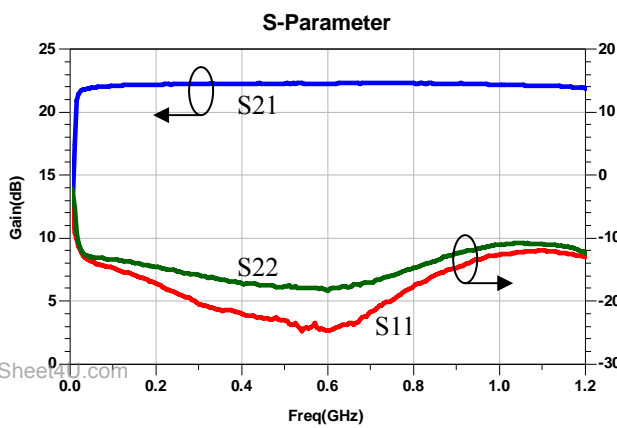
## E-pHEMT MMIC



### Application Circuit: 50MHz ~ 1000MHz, 75ohm System



### Typical RF Performance: VDD=8V, Ids=260mA, T=25°C, 75ohm System



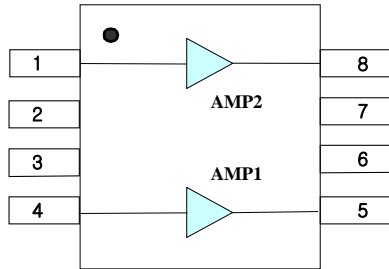
### Multi-Tone Test 79CH\_FLAT@Output Power +39dBmV/Ch

FRQ	XMD(NCTA)	CTB_RAW	CTB_COR	N-FLR	CSU_RAW	CSU_COR	CSU_FRQ	CSL_RAW	CSL_COR	CSL_FRQ
55.25	57.4	64.9	64.9	84.6	83.6	87.9	56	72.5	72.8	54
211.25	57.9	65.4	65.4	85.2	76.4	77.1	212.5	72.2	72.4	209.99
331.25	58.2	64.5	64.5	84	70.6	70.8	332.49	71	71.2	329.99
445.25	58.2	65.4	65.4	84.9	67.8	67.8	446.49	75.1	75.6	444
547.25	58.8	66.9	67	82.8	63.1	63.1	548.5	73.7	74.2	546.49
Min	57.4	64.5	64.5	82.8	63.1	63.1	56	71	71.2	54
Max	58.8	66.9	67	85.2	83.6	87.9	548.5	75.1	75.6	546.49

# AE617 (Preliminary)

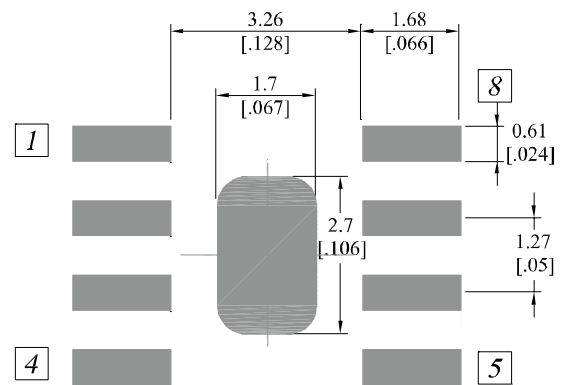
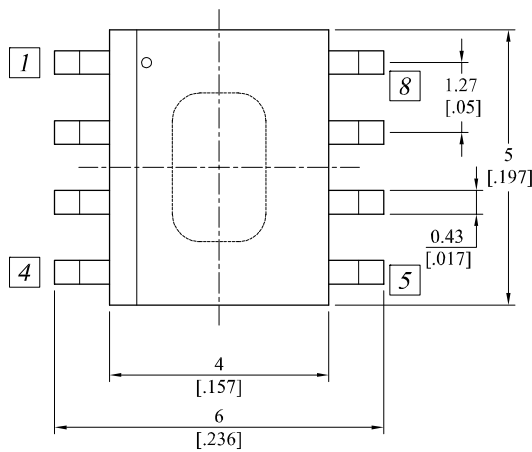


## Pin Description

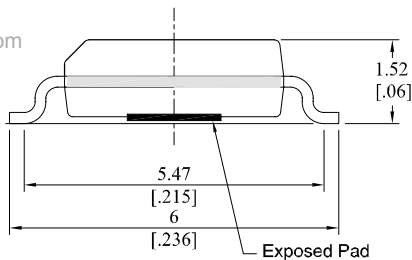


PIN No	Description
1	RF IN(2)
5	RF OUT(1)
4	RF IN(1)
8	RF OUT(2)
2, 3, 6, 7	N.C
Exposed slug	GND

## Package Dimensions (Type: SOIC-8)



www.DataSheet4U.com



Unit : $\frac{\text{mm}}{\text{[inch]}}$	Tolerance : $\pm \frac{0.2}{.008}$
--	------------------------------------

RFHIC Corporation (RFHIC) reserves the right to make changes to any products herein or to discontinue any product at any time without notice. RFHIC do not assume any liability for the suitability of its products for any particular purpose, and disclaims any and all liability, including without limitation consequential or incidental damages. The product specifications herein expressed have been carefully checked and are assumed to be reliable. However, RFHIC disclaims liability for inaccuracies and strongly recommends buyers to verify that the information they are using is current before placing purchase orders. RFHIC products are not intended for use in life support equipment or application where malfunction of the product can be expected to result in personal injury or death. Buyer uses or sells such products for any such unintended or unauthorized application, buyer shall indemnify, protect and hold RFHIC and its directors, officers, stockholders, employees, representatives and distributors harmless against any and all claims arising out of such use. RFHIC's liability under or arising out of damages, claims of whatsoever kind and nature which RFHIC products could cause shall be limited in amount to the net purchase price of the products sold to buyer by RFHIC.