



# Ultra Linear Amplifier 800 to 1000 MHz



- -72 dBc ACPR @ Pout = 12 dBm
- +48 dBm IP3
- +28.5 dBm P1dB
- 15.5 dB Gain
- +7.0V Single DC Supply
- Surface Mount Package

The **ULA-818-82** is a modular amplifier designed to meet the ultralinear transmitter output requirements of worldwide wireless base station systems. The amplifier exhibits an extremely high IP3 (+48 dBm). The device is self contained with all matching and bias circuitry included. Typical applications for this device include driver stages for single channel and multicarrier feed forward linear amplifiers. It is also useful for a lower power micro-cell amplifier output stage where excellent multitone intermodulation performance is required. Some applications for this device are: CDMA, TDMA, GSM, GPRS, EDGE, cdma2000

## Specifications

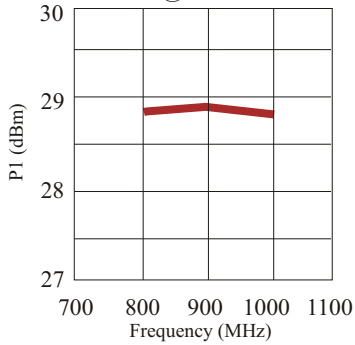
Vdd= 7.0 V, Zo= 50 Ω, T = +25°C

Symbol	Parameter	Min.	Typ.	Max.	Unit
Freq	Frequency Range	800		1000	MHz
SSG	Small Signal Gain	14.0	15.5		dB
P1dB	P out at 1 dB Compression		+28.5		dBm
IP3	Third-order Intercept (1)	+45.0	+48.0		dBm
VSWR	Input / Output		2.0:1 / 3.0:1		
ΔGOF	Gain Variation over Freq.		±0.25	±0.5	dB
ΔGOT	Gain Variation over Temp.		-0.012		dB/°C
Idd	DC Current		380	450	mA
Θth	FET Thermal Resistance (2)		26		°C/W

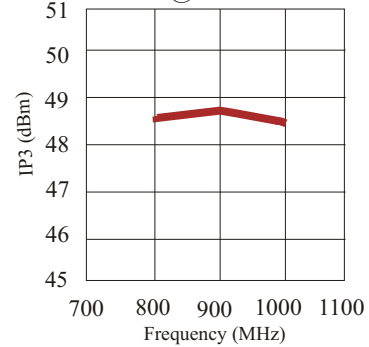
(1) Two tone tests at Pout = +13 dBm/tone, centered at 900 MHz with 20 MHz separation

(2) When calculating typical Tch, use FET VDS=6.3V, IDS=380mA

**Output Power at P1dB**  
@ +25°C

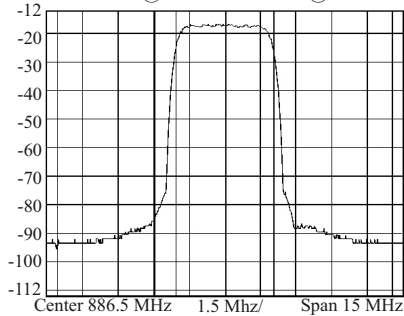


**IP3\* vs. Frequency**  
@ +25°C



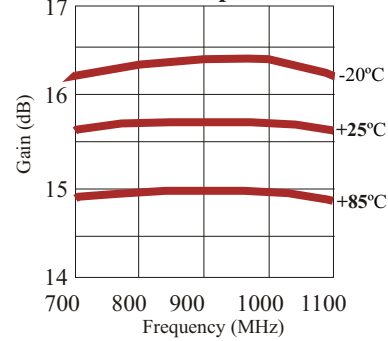
\*Two tone test @ P out = 13 dBm/tone; with 20 MHz separation

**ACPR \*\*@ Pout = 12 dBm @ +25°C**



\*\*3GPP, TS 25.411, Test Model 1, 64 Ch.,  
Ch. BW = 3.84 MHz; Ch. Spacing = 5MHz

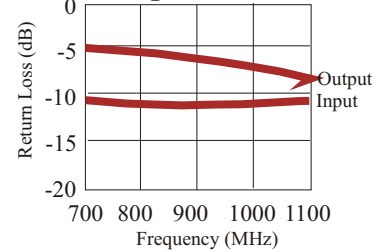
**Gain vs. Frequency**  
**Over Temperature**



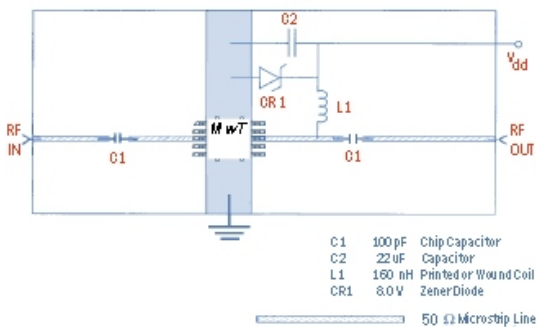
## Absolute Maximum Ratings

Bias Voltage	8.0V
RF Input Power	500 mW
Case Operating Temperature	+85°C
Storage Temperature	-65°C to +125°C

**Return Loss vs. Frequency**  
@ +25°C



## Application Circuit



## ULA-818-82 Outline Drawing

