

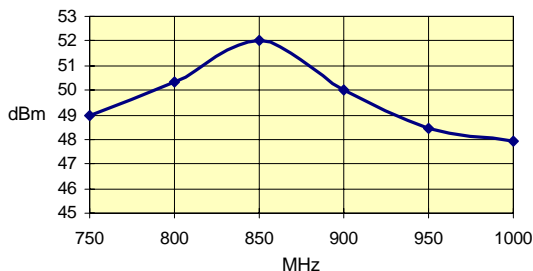
Product Description

Stanford Microdevices' SXL-316 amplifier is a high efficiency GaAs Heterojunction Bipolar Transistor (HBT) MMICs housed in low-cost surface-mountable ceramic package. These HBT MMICs are fabricated using molecular beam epitaxial growth technology which produces reliable and consistent performance from wafer to wafer and lot to lot.

These amplifiers are specially designed for use as driver devices for infrastructure equipment in the 800-970 MHz cellular, ISM and narrowband PCS.

Its high linearity make it an ideal choice for multi-carrier as well as digital applications.

Output Third Order Intercept Point vs. Frequency



SXL-316

800-970 MHz 50 Ohm Power Amplifier Module

Product Features

- Patented High Reliability GaAs HBT Technology
- High 3rd Order Intercept : +52dBm Typ. at 850 MHz
- Surface-Mountable Power Plastic Package

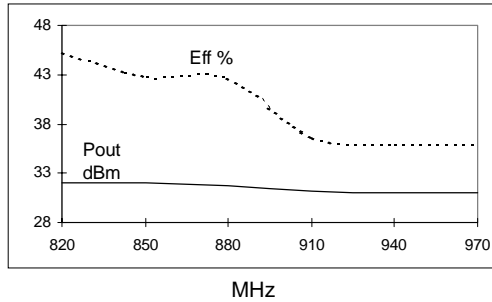
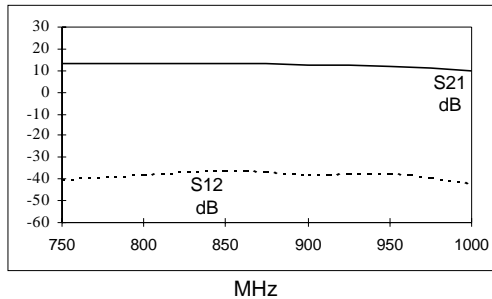
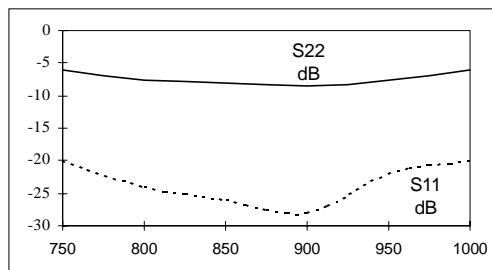
Applications

- Multi-Carrier Systems
- Basestation Applications

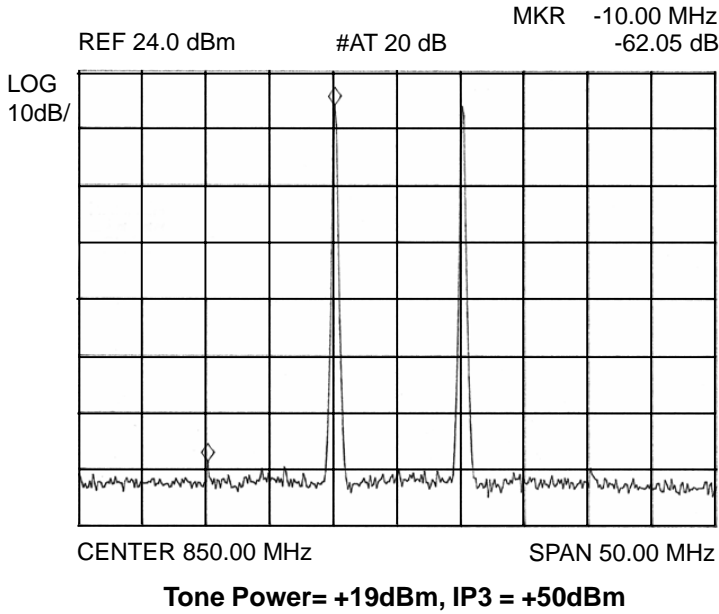
Electrical Specifications at Ta = 25C

Symbol	Parameters: Test Conditions: $Z_0 = 50 \text{ Ohms}$, $f = 800\text{-}970 \text{ MHz}$		Units	Min.	Typ.	Max.
P_{1dB}	Output Power at 1dB Compression	$f = 820\text{-}880 \text{ MHz}$ $f = 800\text{-}970 \text{ MHz}$	dBm dBm	31.0	32.0 31.0	
S_{21}	Power Gain	$f = 800\text{-}970 \text{ MHz}$	dB		14.0	
PAE	Power Added Efficiency	$f = 820\text{-}880 \text{ MHz}$ $f = 800\text{-}970 \text{ MHz}$	% %		44 40	
VSWR	Input VSWR	$f = 820\text{-}880 \text{ MHz}$ $f = 800\text{-}970 \text{ MHz}$	-		1.5:1 2.0:1	
VSWR	Output VSWR	$f = 820\text{-}880 \text{ MHz}$ $f = 800\text{-}970 \text{ MHz}$	-		1.5:1 2.5:1	
IP_3	Third Order Intercept Point	$f = 820\text{-}880 \text{ MHz}$ $f = 800\text{-}970 \text{ MHz}$	dBm dBm	46	52 48	
I_d	Device Current	$V_c = +5V$	mA		720	

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SXL-316 800-970 MHz Power MMIC Amplifier
Typical Performance at 25° C ($V_c = 5.0V, I_c = 720mA$)
Output Power and Efficiency vs. Frequency

Gain and Isolation vs. Frequency

Input & Output Return Loss vs. Frequency


Third Order Intercept Point vs. Output Tone Power



Absolute Maximum Ratings

Parameter	Absolute Maximum
Device Voltage	7V
Device Current	1000mA
Power Dissipation	6000mW
RF Input Power	100mW
Junction Temperature	+175C
Operating Temperature	-45C to +85C
Storage Temperature	-65C to +175C

Notes:

1. Operation of this device above any one of these parameters may cause permanent damage.

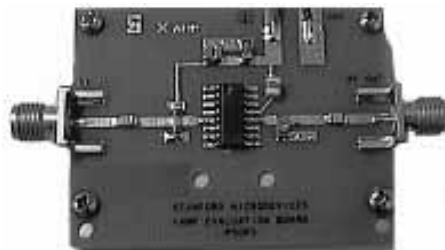
**MTTF vs. Temperature
@ Id = 720mA**

Lead Temperature	Junction Temperature	MTTF (hrs)
+25C	+86C	>10,000,000
+60C	+121C	>1,000,000
+85C	+146C	500,000

Thermal Resistance (Lead-Junction): 30° C/W

Part Number Ordering Information

Part Number	Devices Per Reel	Reel Size
SXL-316-TR1	500	13"
SXL-316-TR2	1000	13"
SXL-316-BLK	100/TRAY	-



**SXL-316 Evaluation Board
(P/N SXL-316EB)**

**Application Schematic and Bias Circuit
for 900 MHz Operation**

