

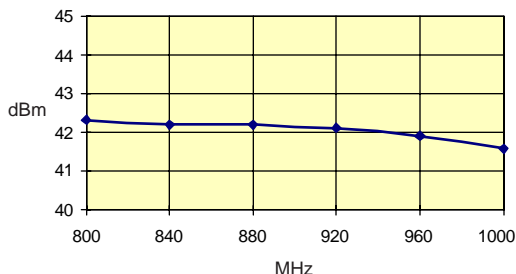
## Product Description

Stanford Microdevices' SXL-189 amplifier is a high efficiency GaAs Heterojunction Bipolar Transistor (HBT) MMICs housed in low-cost surface-mountable plastic 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 800-1000 MHz cellular bands.

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

Output Third Order Intercept Point vs. Frequency



### Electrical Specifications at Ta = 25C

Symbol	Parameters: Test Conditions: Z <sub>0</sub> = 50 Ohms, f = 800-1000 MHz		Units	Min.	Typ.	Max.
P <sub>1dB</sub>	Output Power at 1dB Compression	f = 800-1000 MHz	dBm		24.0	
S <sub>21</sub>	Power Gain	f = 800-1000 MHz	dB		14.5	
S <sub>12</sub>	Reverse Isolation	f = 800-1000 MHz	dB		30.0	
VSWR	Input VSWR	f = 800-1000 MHz	-		2.0:1	
VSWR	Output VSWR	f = 800-1000 MHz	-		2.0:1	
IP <sub>3</sub>	Third Order Intercept Point	f = 800-1000 MHz	dBm		42.0	
NF	Noise Figure	f = 800-1000 MHz	dB		5.0	
I <sub>d</sub>	Device Current	V <sub>c</sub> =+5V	mA		110.0	

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## SXL-189

### 800-1000 MHz 50 Ohm Power MMIC Amplifier



### Product Features

- Patented High Reliability GaAs HBT Technology
- High Linearity Performance : +42dBm Typ. at 900 MHz
- Surface-Mountable Plastic Package

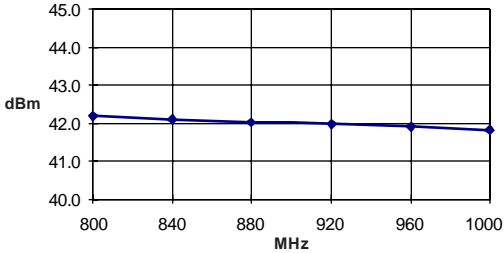
### Applications

- Cellular Systems
- Multi-Carrier Applications

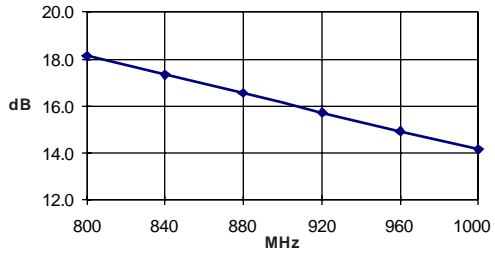
# SXL-189 800-1000 MHz Power MMIC Amplifier

Typical Performance at 25° C (Vc = 5.0V, Ic=110mA)

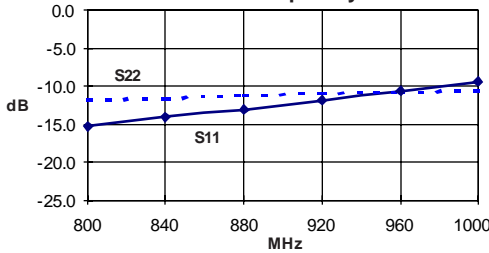
Output Third Order Intercept vs. Frequency



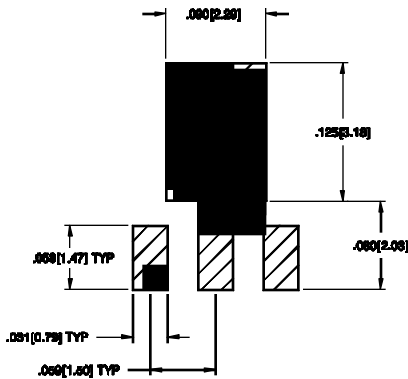
Power Gain vs. Frequency



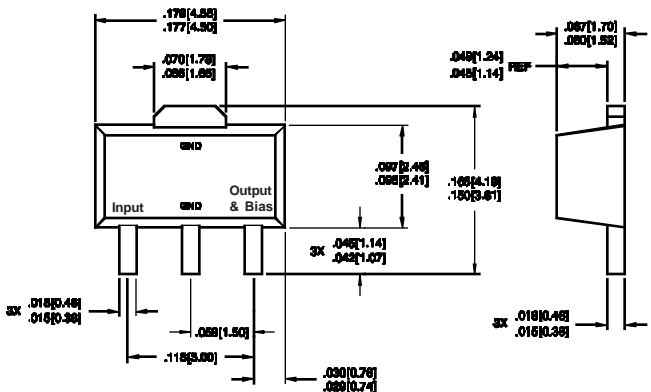
Input/Output Return Loss vs. Frequency



Recommended Land Pattern



Outline Drawing



Pin assignments shown for reference only, not marked on part



**SXL-189 800-1000 MHz Power MMIC Amplifier**

**Absolute Maximum Ratings**

Parameter	Absolute Maximum
Device Voltage	7V
Device Current	200mA
Power Dissipation	1500mW
RF Input Power	100mW
Junction Temperature	+150C
Operating Temperature	-45C to +85C
Storage Temperature	-65C to +150C

**Notes:**

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

**MTTF vs. Temperature  
@ Id = 110mA**

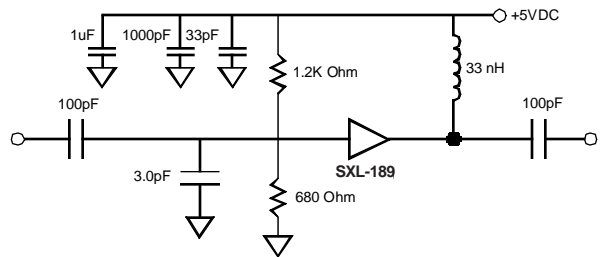
Lead Temperature	Junction Temperature	MTTF (hrs)
+25C	+90C	>10,000,000
+60C	+125C	>5,000,000
+85C	+150C	1,000,000

Thermal Resistance (Lead-Junction): 60° C/W

**Part Number Ordering Information**

Part Number	Devices Per Reel	Reel Size
SXL-189-TR1	500	7"
SXL-189-TR2	1000	13"
SXL-189-EB	Eval Board	-

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



**Board Layout and Matching Circuit  
at 900 MHz**

