

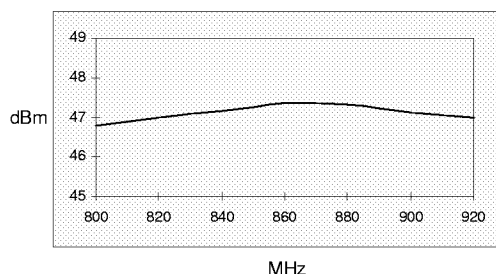
Product Description

Stanford Microdevices' SXQ-1 amplifier is a highly linear power amplifier module housed in a low cost ceramic surface-mount package. This module utilizes GaAs Hetero-junction Field Effect Transistors (HFET). A balanced configuration is used to obtain high-linearity and a good input/output match to 50 ohms.

These amplifiers are specially designed for use as driver devices for infrastructure equipment in the 800-920 MHz cellular, ISM and narrowband PCS bands.

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

Typical Output Third Order Intercept Point vs. Frequency



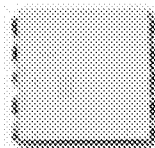
Electrical Specifications at Ta = 25C

Symbol	Parameters: Test Conditions: $Z_0 = 50 \text{ Ohms}$, $f = 800-920 \text{ MHz}$		Units	Min.	Typ.	Max.
P_{1dB}	Output Power at 1dB Compression	$f = 800-920 \text{ MHz}$	dBm		32.5	
$ S_{21} $	Power Gain	$f = 800-920 \text{ MHz}$	dB		22	
$ S_{12} $	Reverse Isolation	$f = 800-920 \text{ MHz}$	dB		36	
VSWR	Input VSWR	$f = 800-920 \text{ MHz}$	-		1.2:1	
VSWR	Output VSWR	$f = 800-920 \text{ MHz}$	-		1.2:1	
IP_3	Third Order Intercept Point	$f = 800-920 \text{ MHz}$	dBm		47.5	
I_d	Device Current	$V_d = +15V$	mA		330	

Preliminary

SXQ-1

800-920 MHz 50 Ohm Power Amplifier Module



Product Features

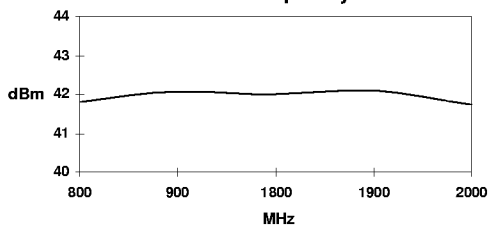
- Patented, High Reliability GaAs HFET Technology
- High Linearity Performance : +48dBm Typ. at 850 MHz
- Surface-Mountable Ceramic Package

Applications

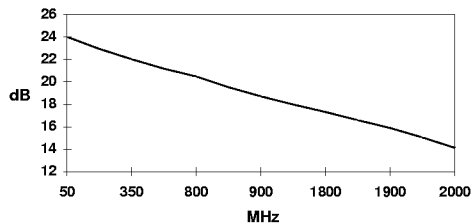
- AMPS/GSM Cellular Systems
- Multi-Carrier Applications

Typical Performance at 25° C (Vd = 15.0V, Ic=330mA)

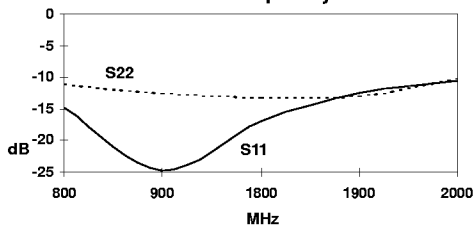
**Output Third Order Intercept
vs. Frequency**



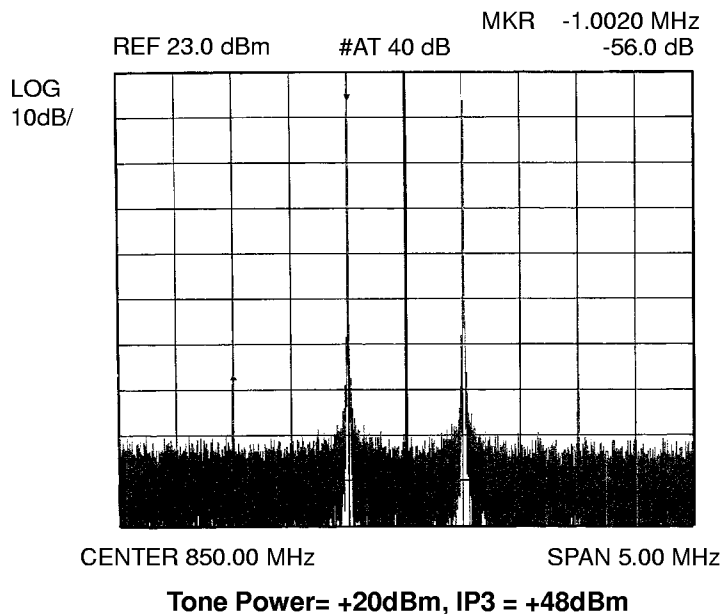
Power Gain vs. Frequency



**Input/Output Return Loss
vs. Frequency**



Typical Third Order Intercept Point Performance at 850 MHz



SXQ-1 800-920 MHz Power Amplifier Module

Absolute Maximum Ratings

Parameter	Absolute Maximum
Device Voltage	18V
Device Current	400mA
Power Dissipation	7200mW
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 = 330mA

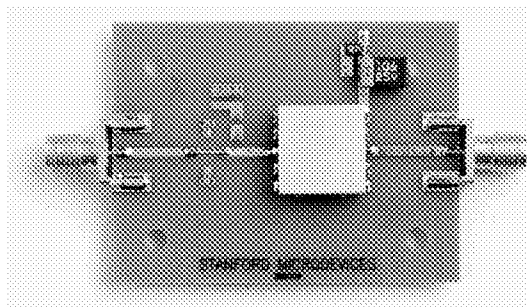
Lead Temperature	Junction Temperature	MTTF (hrs)
+25C	+75C	>10,000,000
+60C	+110C	>5,000,000
+85C	+135C	>1,000,000

Thermal Resistance (Lead-Junction): 10° C/W

Part Number Ordering Information

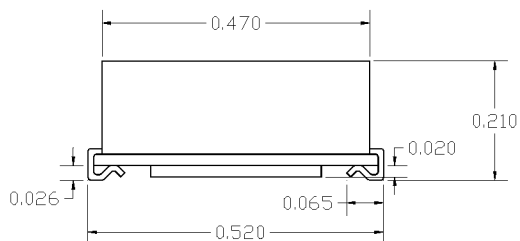
Part Number	Devices Per Reel	Reel Size
SXQ-1-TR1	500	7"
SXQ-1-TR2	1000	13"
SXQ-1-EB	Evaluation Board	-

Evaluation Board with Bias Circuit

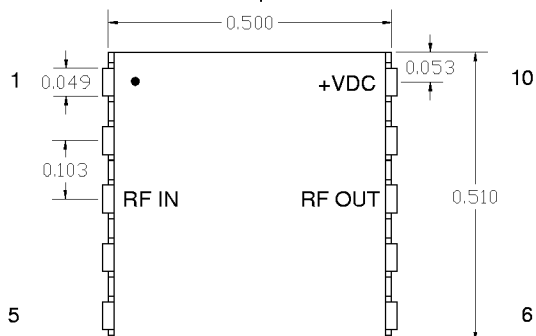


Package Outline

Front View



Top View



Footprint Outline and Detail

