

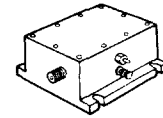
SHP10-17-04

The RF Line
Linear Power Amplifier

... designed for wideband linear applications in the 10–1000 MHz frequency range. This solid state, Class A amplifier incorporates microstrip circuit technology and high performance, gold metallized transistors to provide a complete broadband, linear amplifier operating from a supply voltage of 24 volts.

- Specified $V_{CC} = 24$ Volt and $T_C = 25^\circ\text{C}$ Characteristics:
 Frequency Range — 10 to 1000 MHz
 Output Power — 400 mW Typ @ 1 dB Gain Compression, $f = 1$ GHz
 Power Gain — 17 dB Typ @ $f = 100$ MHz
 ITO — 40 dBm Typ @ $f = 500$ MHz
 Noise Figure — 7.5 dB Typ @ $f = 1$ GHz
- 50 Ohm Input/Output Impedance
- Heavy Duty Machined Housing
- Gold Metallized Transistors for Improved Reliability
- Moisture Resistant, EMI Shielded Package

0.4 WATT
10 TO 1000 MHz
LINEAR
POWER
AMPLIFIER



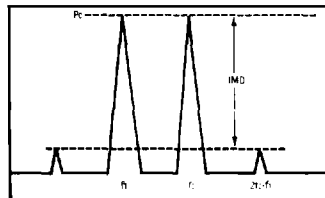
SHP
CASE 389A-01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
DC Supply Voltage	V_{CC}	28	Vdc
RF Power Input	P_{in}	+20	dBm
Operating Case Temperature Range	T_C	-40 to +85	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +100	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$, $V_{CC} = 24$ V, 50 Ω system unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Frequency Range	BW	10	—	1000	MHz
Gain Flatness (Peak-to-Peak) ($f = 10$ –1000 MHz)	—	—	± 0.5	± 1	dB
Power Gain ($f = 100$ MHz)	P_G	15.9	17	18.1	dB
Noise Figure, Broadband ($f = 500$ MHz) ($f = 1000$ MHz)	NF	—	6.5 7.5	7.5 8.5	dB
Power Output — 1 dB Compression ($f = 500$ MHz) ($f = 1000$ MHz)	P_o 1dB	25 25	26 26	— —	dBm
Third Order Intercept (See Figure 1) ($f = 500$ MHz) ($f = 1000$ MHz)	ITO	38 37	40 39	— —	dBm
Input/Output VSWR ($f = 40$ –900 MHz) ($f = 10$ –1000 MHz)	VSWR	— —	— 2:1	2:1 2.5:1	—
Supply Current	I_{CC}	190	220	245	mA



$$I_{TO} = P_1 + \frac{IMD}{2} \rightarrow IMD > 50dB$$

$$PEP = 4x P_0 \rightarrow IMD = -30dB$$

Figure 1. Tone Intermodulation Test