The RF Line

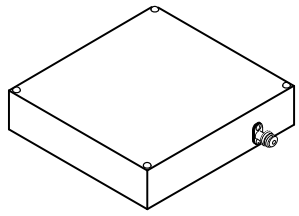
Broadband Linear Power Amplifier

ATV6060

The ATV6060 is a solid state class A amplifier and is specifically designed for TV transposers and transmitters. This amplifier incorporates microstrip technology and reliable MOTOROLA push–pull transistors.

- Specified 25.5 Volts, 470–860 MHz Characteristics
  Output Power = 40 Watts @ –50 dB IMD (3 tones)
  Output Power = 60 Watts @ 1 dB Comp. (CW)
  Gain = 9 dB Min (Small Signal)
- Will Withstand Infinite Load VSWR
- High Performance, Gold Metallized Die for Ultra Reliable Performance

60 W, 470–860 MHz
CLASS A
RF POWER AMPLIFIER



CASE 389U–01, STYLE 1

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Supply Voltage	V_{CC}	26.5	Vdc
Storage Temperature Range	T_{stg}	–40 to +100	°C
Maximum Operating Temperature (1)	T_{op}	–20 to +70	°C

NOMINAL OPERATION CONDITION (T_C = 60°C)

Supply Current (V_{CC} = 25.5 V)	I_{sup}	9.2	A

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted, Z_{in}, Z_{out} = 50 Ω)

Characteristic	Symbol	Min	Typ	Max	Unit
Power Gain (Small Signal)	G_p	9	—	—	dB
Gain Ripple (Small Signal)	G_{rple}	—	—	+1.0	dB
Output Power @ 1.0 dB Compression	P_{1dB}	60	—	—	W
Load Mismatch (P_{out} = 60 W, V_{CC} = 25.5 V, f = 860 MHz, Load VSWR = ∞:1, all phase angles at frequency of test)	ψ	No degradation in output power before or after test			
Intermodulation (–8 dB/–7 dB/–16 dB, P_{ref} = 40 W)	IMD_1	—	—	–50	dB
Intermodulation (–8 dB/–10 dB/–16 dB, P_{ref} = 40 W)	IMD_2	—	—	–53	dB
Input Return Loss	IRL	—	—	–15	dB
Output Return Loss	ORL	—	—	–15	dB

NOTE: 1. Temperature is measured at temperature test point (on the flange of the transistor).

TYPICAL CHARACTERISTICS

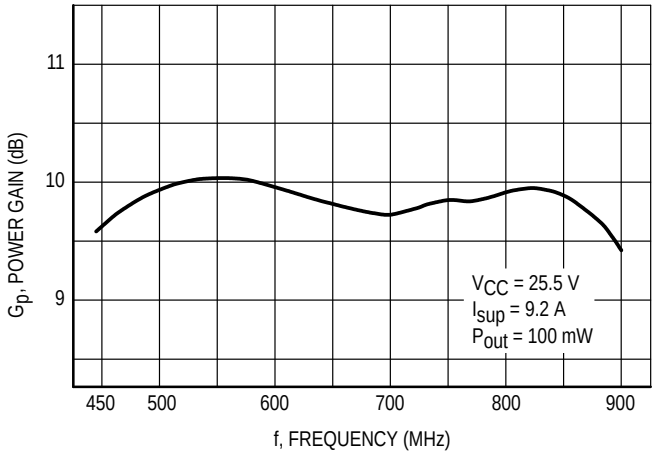


Figure 1. Power Gain versus Frequency

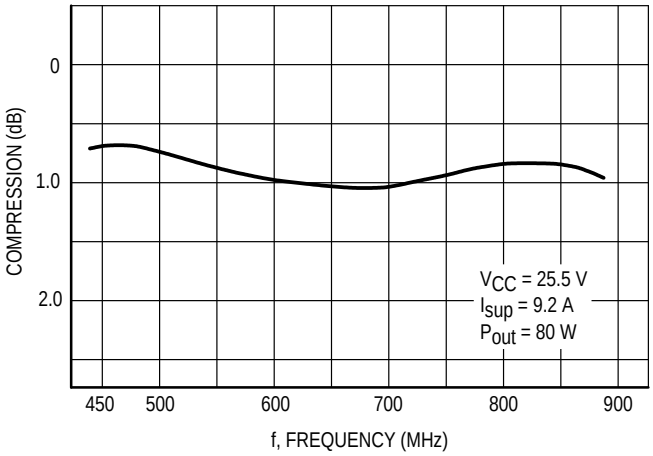


Figure 2. Gain Compression versus Frequency

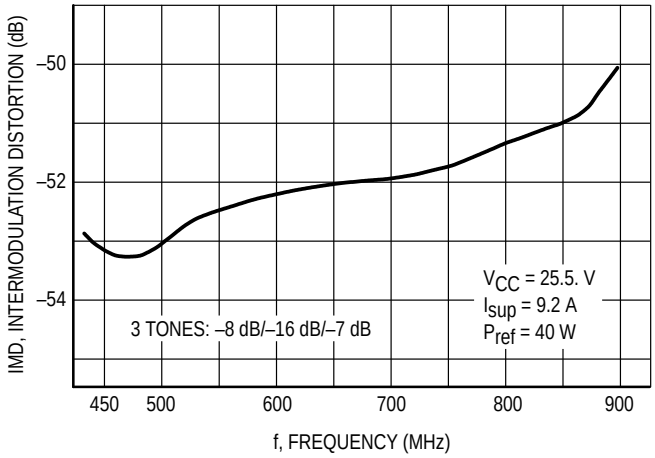


Figure 3. Intermodulation versus Frequency

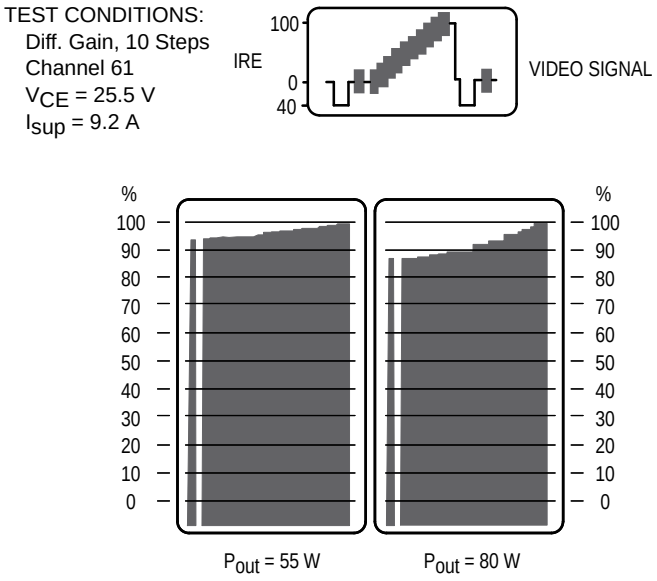
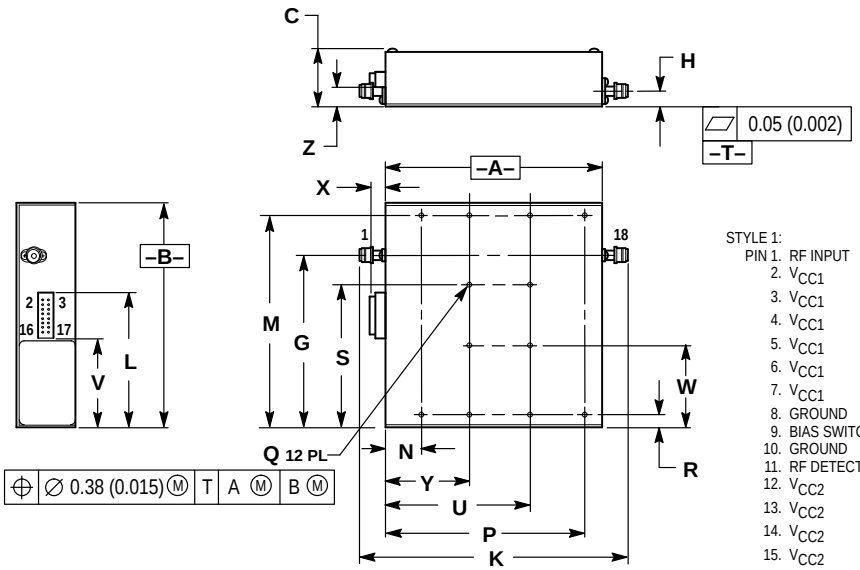


Figure 4. Gain versus Output Power

PACKAGE DIMENSIONS



STYLE 1:
PIN 1. RF INPUT
2. V_{CC1}
3. V_{CC1}
4. V_{CC1}
5. V_{CC1}
6. V_{CC1}
7. V_{CC1}
8. GROUND
9. BIAS SWITCH (OPTIONAL)
10. GROUND
11. RF DETECTOR (OPTIONAL)
12. V_{CC2}
13. V_{CC2}
14. V_{CC2}
15. V_{CC2}
16. V_{CC2}
17. V_{CC2}
18. RF OUTPUT

NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	133.7	134.2	5.26	5.28
B	—	139.5	—	5.49
C	—	36.20	—	1.42
G	107.1	107.7	4.22	4.24
H	9.20	9.60	0.36	0.38
K	—	155.0	—	6.10
L	83.8	84.2	3.30	3.31
M	132.0 BSC		5.20 BSC	
N	13.40 BSC		0.53 BSC	
P	120.6 BSC		4.75 BSC	
Q	4.40	4.60	0.17	0.18
R	7.0 BSC		0.28 BSC	
S	89.1 BSC		3.51 BSC	
U	78.6 BSC		3.09 BSC	
V	54.9	55.4	2.15	2.18
W	49.9 BSC		1.96 BSC	
X	—	6.0	—	0.24
Y	52.2 BSC		2.06 BSC	
Z	8.0	9.5	0.31	0.37

CASE 389U–01
ISSUE O

Literature Distribution Centers:
USA: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036.
EUROPE: Motorola Ltd.; European Literature Centre; 88 Tanners Drive, Blakelands, Milton Keynes, MK14 5BP, England.
JAPAN: Nippon Motorola Ltd.; 4-32-1, Nishi-Gotanda, Shinagawa-ku, Tokyo 141, Japan.
ASIA PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Center, No. 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong.