

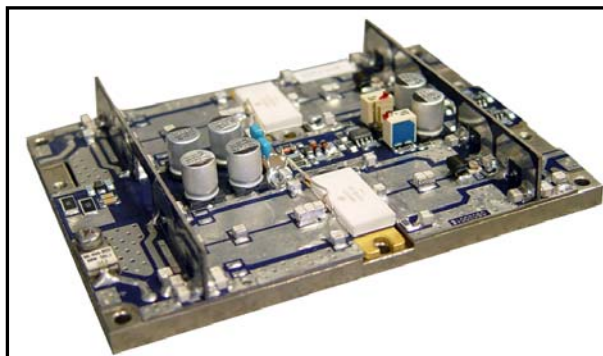


AMP 450-UHF HIGH POWER AMPLIFIER MODULE FOR UHF TV BROADCAST

400W pep –27dBc min LDMOS Technology

Designed for analog and digital TV transposers and transmitters, this amplifier incorporates microstrip technology and push-pull LDMOS to enhance ruggedness and reliability.

- 470 - 862 MHz
- (28 ÷ 32 Volt) 30 Nominal
- Input/Output 50Ω - 50Ω
- Class AB
- Gain : 14 dB min; 15 dB typ
- Devices: MRF377 or equivalent
- Pout : 450W pep Max. –27 dBc Min. (two-tone test 6MHz spacing)
- Connectorized version available
- Mechanical compatible with Motorola MRFA 2604

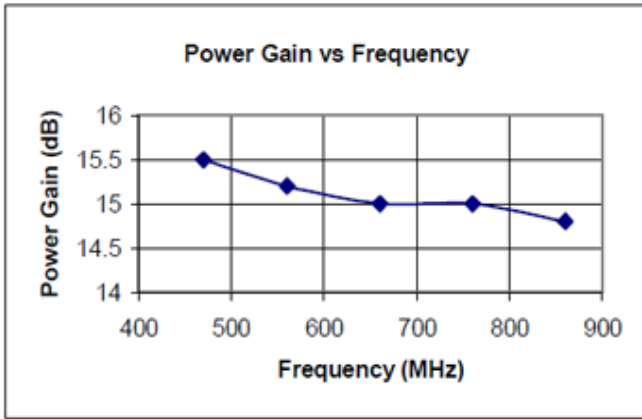


ABSOLUTE MAXIMUM RATINGS (Device Flange T = 70 °C)

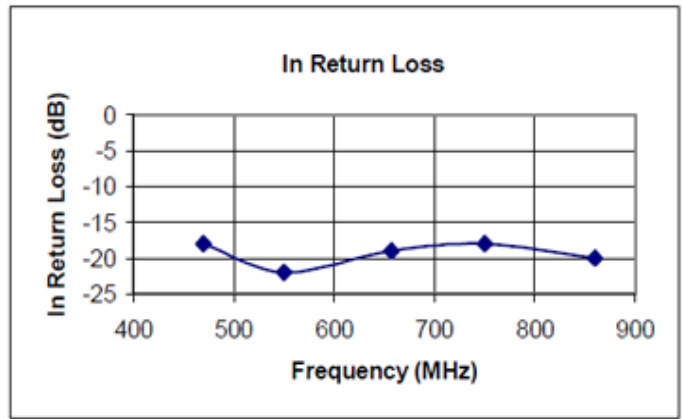
Symbol	Parameter	Value	Unit
Vs	Voltage Supply	35	V dc
Is	Current Supply	25	A dc
Tstg	Storage Temperature Range	-20 + 80	°C
Tc	Operating Base Plate Temperature ¹	0 + 75 ²	°C
ψ	VSWR max	3:1 all phase angle	-
	Max input power	See note ³	-
	Max cw output power	200	Watt

ELECTRICAL SPECIFICATIONS (Base Plate T.= 45 °C, 50Ω loaded, Vd = 30 V)

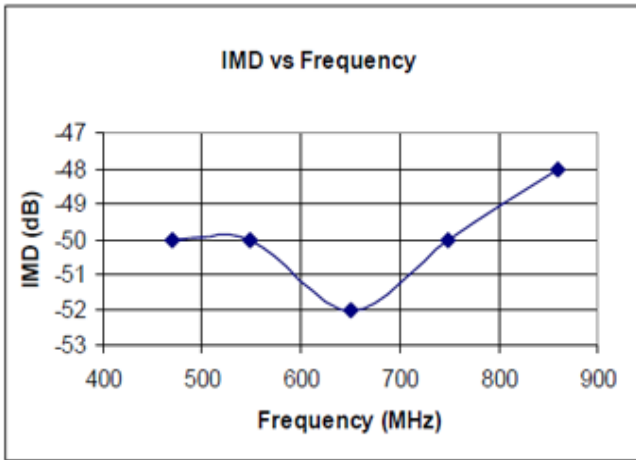
Symbol	Parameter	Test Conditions	Value			Unit
			Min	Typ.	Max	
BW	Bandwidth	Pout = 200 W (CW)	470		862	MHz
Gp	Power gain	Pref = 200 W (CW)	14	15	-	dB
Pout -1dB	Power Output @ 1dB Compression	Referred to Pout = 60W (CW) ⁴	270	350	-	W
Iq *	Quiescent Current	Pout = 0 W – Total * ⁵	-	-	4.0	A
Itot	@ PMax	300W Ps Black Level Video + Audio	-	-	21	A
Irl	Input return loss	Pout = 250 W CW	16	20	-	dB
Ψ	Load mismatch	Pref = 250 W CW, f= 862MHz, load VSWR = 2:1, all phase angles	No degradation in Pout			
Gr	Gain Flatness	Pref = 250 W CW, BW: 470-862MHz		±0.5	±1.5	dB
η	Drain Efficiency	Pout = 300 W ⁶ (CW)	40	45	-	%
	Pout separate ampl.	Sync. Compression < 1dB without correction	350			Wps
	Pout common ampl.	Pout 300W ps common ampl. dual sound, with Red Field sound 1 @ -13dB and sound 2 @ -20dB without precorrection	-45	-50		dBc
	Pout DVB-T	Pout 90Wrms without precorrection	-28	-30		dBc



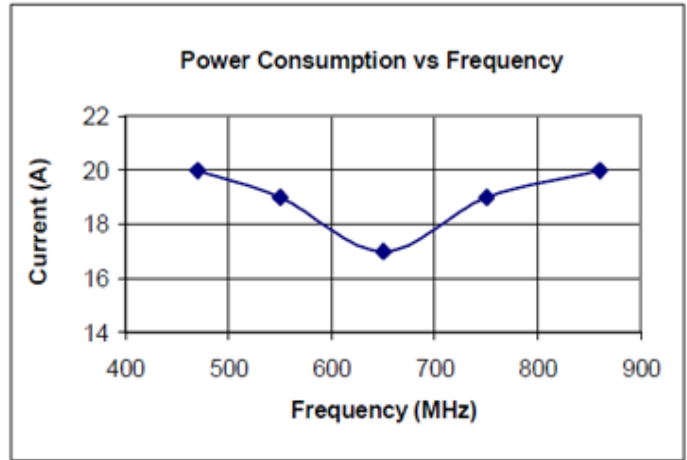
Test Condition: Vd 30V, Idq 2 x 1.3A, Pout 300W ps Level



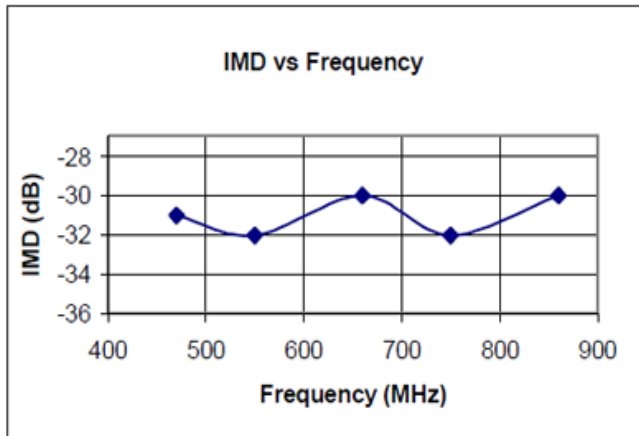
Test Condition: Vd 30V, Idq 2 x 1.3A, Pout Low



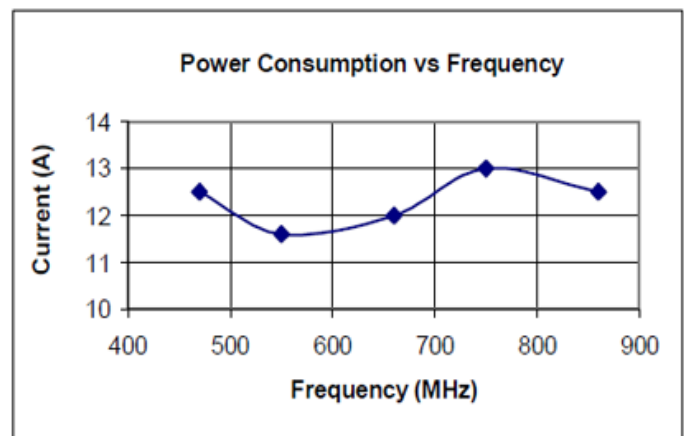
Test Condition: Vd 30V, Idq 2 x 1.3A, Pout 300W ps (red field with sound 1 @-13dB and sound 2 @-20dB)



Test Condition: Vd 30V, Idq 2 x 1.3A, Pout 300W ps with black field



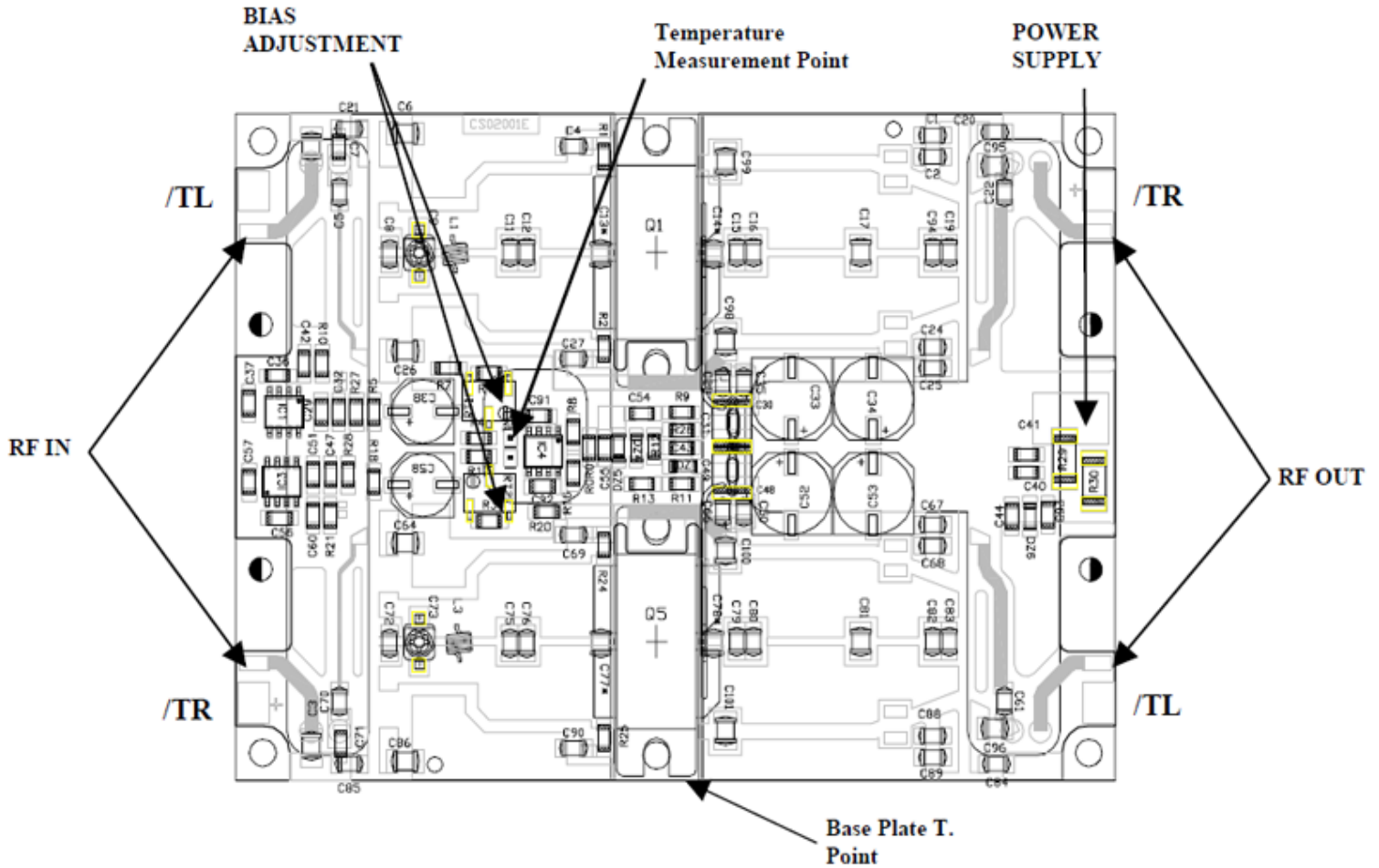
Test Condition: Vd 30V, Idq 2 x 1.3A, Pout 90Wrms DVB-T signal



Test Condition: Vd 30V, Idq 2 x 1.3A, Pout 90Wrms DVB-T signal

The operating voltage range of this module is from 28V to 32V, 30V nominal. If used at 32V, the max power available will be higher but with a consequently decrease of efficiency and MTBF. Under conditions of overdrive or reflected power, when a multicarrier signal is applied, the 32V supply can be the reason of a minor ruggedness. Please, use suitable protection circuits.

AMP 450-UHF Layout and Connections⁷



NOTE. In response to customer request, this pallet has been designed to allow two different positions of IN/OUT connections:
 /TL = connection on the left side, /TR = connection on the right side.

HEATSINK MOUNTING/HARDWARE

1. HEATSINK TOOLING

- Planarity: better than 0.03 mm
- Roughness: typical value 0.8

2. THERMAL COMPOUND

- Paste with silicones
- Thickness: optimum between 0.06 mm and 0.15 mm, on the whole back surface of the amplifier.

3. SCREWS

- 8 x M3 - Socket head cap screws.
- 8 Split lock washers WZ Ø3 + 8 Flat washers ZU Ø 3.
- The recommended Torque is 12 Kg . cm (10.5 in . lbs).

4. TIGHTENING ORDER

- See next figure:

