

Revision 0.C Release Date Jan 20 2010
Revision Notes Production release.

Technical Specifications Summary

Frequency Range:	470 - 806 MHz	Gain:	20dB
P1dB:	900 Watts	Efficiency:	38%
Class:	AB	Temperature Range:	-10 to 55°C
Supply Voltage:	+48 VDC	Max VSWR:	3:1

Amplifier General Description

This high power UHF ultra broadband amplifier is based upon 6th generation LDMOS high power transistor devices. Based upon the MRF6VP3450 transistor, this high power amplifier operates over the entire 470 - 806 MHz band. Offering high gain, needing less than 10W to drive to full power, and offering high efficiency and high power density, this amplifier is suitable for both digital and analog television use. This flexibility will allow the integrator to manufacture forward looking products.

New features of this amplifier include automatic bias circuit, digital potentiometers, and flexible input and output RF locations. The ABC Module is embedded inside the amplifier allowing smaller amplifier footprint and automatic monitoring and protection for overcurrent, bias faults, overvoltage, overtemperature operation. Automatic programmable startup delay is included, along with advanced diagnostics and optional serial communications - RS-232 and RS485.

Amplifier Picture



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High Power RF Amplifiers and Accessories

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Parameter	Min	Typ	Max	Units	Notes
Frequency	470		806	MHz	
P1dB	800	875		W	Amplifier is rated for 500W CW Maximum
Power	750	800		W, PEP	For 2 tones, 1MHz spacing, -38dBc
IMD3		-40		dBc	For 2 tones, 1MHz spacing, 800W PEP
Power Input		8		W	For 800W PEP Output
Gain		20		dB	At 800W PEP / Pk Sync
Vsupply		48	52	V, DC	
Drain Current		28		A, DC	For SLB, 800W Pk Sync
Input Return Loss		-14	-10	dB	
Insertion Phase Variation		±5		°	Unit to unit
Gain Variation			±1	dB	
F2 Second Harmonic		-25		dBc	
F3 Third Harmonic		-20		dBc	
Baseplate Operating Temperature	-10		55	°C	

Physical Dimensions

4.0" x 5.5" x 0.8"

Weight

1.6 Pounds

All specifications valid for load impedance 50 Ω, V_{sup} = +48VDC, I_{dq} = 3.2A

Absolute Maximum Ratings

Parameter	Value	Units	Notes
Maximum Output Power	600	W, Avg	Peak power may exceed this level
Maximum Operating Voltage	52	V, DC	
Stable Operating Voltage	46 - 52	V, DC	Specifications degrade below 47V
Maximum Bias Current, Q100,101	2.2	A, DC	Do not adjust. Each transistor.
Maximum Drain Current	32	A, DC	Current limited, total pallet
Load Mismatch Survival	3 : 1		
Storage Temperature	-40 to 105	°C	
Maximum Operating Baseplate Temp	55	°C	

Features, Auxillary Functions

- ◆ Temperature Compensated Bias
- ◆ Automatic Bias Control, digital non volatile bias, no mechanical potentiometers
- ◆ LED indicator for operation and trouble codes
- ◆ High Temperature Alarm with Automatic PA Disable and re-enable, Temperature Warning
- ◆ Fault Output, Disable Input, Serial Communications
- ◆ Input Power, Forward Power monitoring and shutdown, over drive protection
- ◆ Current Sense, Each Transistor, current limit protection, over / under voltage protection

