



The MP310/80/50MK-CP-A4 is a broadband high power amplifier for VHF-UHF applications, based on advanced LDMOS technology. The amplifier supports signal amplification in the 100-520 MHz frequency band. It is protected against over-temperature, excessive current draw. This amplifier integrates a Bi-directional power coupler for forward and reverse power monitoring.

### Model: MP310/420/50MK-CP-A4

#### 1. Electrical Characteristics

Item	Value	Note
Frequency Range	100 ~ 520 MHz	
Gain	51 dB (Min.)	@ 120 watts Output
Gain Flatness	ALC Off	Over Freq. Range
	ALC On	
	± 2.0 dB	± 1.0 dB
Output Psat	+51 dBm (Min.)	
Output 3 <sup>rd</sup> Intercept Point	+55 dBm (Typ.)	2 CW Tones @ +37 dBm per tone and 100 kHz spacing
IMD @ 3 Tones	-10 dBc (Max.)	3 Tones @ +49 dBm 100 KHz Spacing
Input / Output VSWR	2:1 (Max.)	
Spurious	-70 dBc (Max.)	
2 <sup>nd</sup> / 3 <sup>rd</sup> Harmonics	-30 / -10 dBc (Typ.)	Pout @ +49 dBm
Efficiency	> 40%	@120 Watts Power Output over full Frequency Range
HPA Enable/Disable	TTL "0 V or Open" ⇒ Enable TTL "5 V" ⇒ Disable	
Temperature Sensor	10 mV/°C	
Forward Power Monitor	4.0 ± 0.3 V @ +50 dBm, 270MHz Power Monitor Flatness: ±1dBm	RMS Detection
Reverse Power Monitor	4.0 ± 0.3 V @ +50 dBm, 270MHz Power Monitor Flatness: ±1dBm	RMS Detection
HPA Switching ON/OFF Speed	2 μSec	
ALC ON/OFF	TTL "Low or Open" : Enable TTL "High " : Disable	Pin 1 On DB9
ALC Level	0-5V	Pin 4 On DB9
DC Input Voltage	+ 28 V ± 2V	Operating Voltage Range: +24-30V
Current Consumption	10 A (Max.)	@120 Watts Power Output
Input / Output Impedance	50 Ω	
Max. Input Without Damage	+5 dBm	

#### 2. Mechanical Characteristics

Monitoring Connector	DB-9 Male	4 – 40 screw
RF IN/OUT Connector	SMA 4 Holes Female	
DC Input	Pin6 and Pin7 at DB9	
Dimensions	8.4" x 3.48" x 1.06"	

#### 3. Environment Characteristic

Operating Temperature	-40°C ~ +80°C	Base Plate
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#### Revision History

REV	Reason to Change	Date	Initialed by

#### 4. DB9 Pin Description

1	ALC ON/OFF	TTL "Low or Open" : Enable TTL "High " : Disable
2	Current Monitor	275 mV/Amp
3	Temperature Monitor	10 mV/°C
4	ALC Level Input	0-5V
5	Enable/Disable	0V or Open: Enable 5V: Disable
6,7	+28 V	
8	Fwd. Monitor Output	
9	Rev. Monitor Output	

#### 5. Outline Drawing

