



The MP310/420/49MK-A4 is a broadband high power amplifier for VHF-UHF applications. 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 VSWR protection.

Model: MP310/420/49MK-A4



1. Electrical Characteristics

Item	Value		Note
Frequency Range	100 ~ 520 MHz		
Gain	52 dB (Min.)		
Gain Flatness	ALC Off	ALC On	Over Freq. Range @ ALC Set Point
	± 2.0 dB	± 1.0 dB	
Output P1	+48 dBm (Min.)		
Output Psat	+50 dBm (Typ.)		
Output IP3	54 dBm (Min.)		2 Tones @ 40 dBm, 100 KHz Spacing
IMD @ 3 Tones	-5 dBc (Max.)		3 Tones @ +49 dBm 100 KHz Spacing
Input / Output VSWR	2:1 (Max.)		
Spurious	-70 dBc (Max.)		
2 nd / 3 rd Harmonics	-35 / -20 dBc (Typ.)		Pout @ +48 dBm
HPA Enable/Disable	TTL "0 V or Open" ⇒ Enable TTL "5 V" ⇒ Disable		
VSWR Protection	Shutdown if Output Reflect Power ≥ 45 dBm ± 1 dBm		
Temp. Sensor Output	10 mV/°C		
Forward Power Monitor	4.0 ± 0.2 V @ +49 dBm, 310 MHz Power Monitor Flatness: ± 1.0 dBm		RMS Detection Range > 20 dB
Reverse Power Monitor	4.0 ± 0.2 V @ +49 dBm, 310 MHz Power Monitor Flatness: ± 1.0 dBm		RMS Detection Range > 20 dB
ALC ON/OFF	Local Switch		
ALC Level	ALC Setting Range > 15 dB		Continuous Adjust via Local Potentiometer
DC Input Voltage	+ 28 VDC ± 2V		Operating Voltage Range: +24-30V
Current Consumption	10.0 A (Max.)		Pout @ +48 dBm
Input / Output Impedance	50 Ω		
Switching Speed	2 μsec (Max.)		Enable/Disable
Input Max without Damage	+5 dBm		With ALC On

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 DB-9	
LED	LED Indicator	ALC On
ALC Level Adjust	Potentiometer	
ALC On/Off	Momentary Switch	Default: ALC On Push: ALC Off
Dimensions	8.4" x 3.48" x 1.06"	

Revision History

REV	Reason to Change	Date	Initialed by

3. Environment Characteristics

Operating Temperature	-40°C ~ +80°C	Base Plate
Cooling	External Heatsink	
Humidity (Non-condensing)	95% (Max.)	

4. DB9-Female Pin Description

1	N/C	
2	Current Monitor	275 mV/Amp
3	Temperature Monitor	10 mV/°C
4	N/C	
5	Enable/Disable	0V or Open: Enable 5V: Disable
6,7	+28 V	
8	Fwd. Monitor Output	
9	Rev. Monitor Output	

5. Outline Drawing

