



The MA270/10/50HK-CP-A2 is a broadband high power amplifier for VHF-UHF applications. The amplifier supports signal amplification in the 20 ~ 520 MHz frequency band. It is protected against over-temperature, excessive current draw, and ALC loop for over power protection. This amplifier integrates a Bi-directional power coupler for forward and reverse power monitoring and VSWR Alarm indication.



Model: MA270/10/50HK-CP-A2

1. Electrical Characteristics		
Item	Value	Note
Frequency Range	20 ~ 520 MHz	
Gain	50 dB (Min.)	
Gain Flatness	± 2.0 dB	Over Freq. Range
Output P1	+50 dBm (Min.)	
Output Psat	+51 dBm (Min.)	
Output 3 rd Intercept Point	+55 dBm (Typ.)	2 CW Tones @ +37 dBm per tone and 100 kHz spacing
Input / Output VSWR	2:1 (Max.)	
Spurious	-60 dBc (Max.)	
Efficiency	≥ 39 %	Pout @ 100 W
HPA Enable/Disable	TTL "0 V or Open" ⇒ Enable TTL "5 V" ⇒ Disable	
Temperature Sensor	10 mV/°C	
Forward Power Monitor	4.0 ± 0.2 V @ +50 dBm, 270 MHz Power Monitor Flatness: ±1 dBm	RMS Detection
Reverse Power Monitor	4.0 ± 0.2 V @ +50 dBm, 270 MHz Power Monitor Flatness: ±1 dBm	RMS Detection
ALC ON/OFF	TTL "High or Open" : Disable TTL "Low " : Enable	Pin 4 On DB9 Default: Off
ALC Default Level	+51 dBm ± 0.5 dBm	Set for Protection
ALC Accuracy	± 0.5 dBm	
HPA Switching ON/OFF Speed	1 μSec	
VSWR Alarm	If reverse power ≥ +47 ± 1 dBm Alarm: TTL High	Pin 1 on DB9
DC Input Voltage	+ 26 to + 28 V	
Current Consumption	9.0 A (Max.)	Pout @ 100 W
Input / Output Impedance	50 Ω	
Max. Input (No Damage)	+5 dBm	

2. Mechanical Characteristics		
Monitoring Connector	DB9-Male	4 – 40 screw
RF IN/OUT Connector	SMA 4 Holes - Female	
DC Input	Pin 6 and Pin 7 at DB9	
Dimensions	8.4" x 3.48" x 1.06"	

3. Environment Characteristics		
Operating Temperature	-40°C ~ +80°C	Base Plate

Revision History			
REV	Reason to Change	Date	Initialed by
A	Change efficiency to ≥ 39%, Current Sensor to 100mV/A, Frequency Range to 20-520 MHz	04/10/14	Y.Z.

4. DB9 Pin Description		
1	VSWR Alarm	Alarm: TTL High, Normal: TTL Low
2	Current Monitor	100 mV/Amp
3	Temperature Monitor	10 mV/°C
4	ALC ON/OFF	TTL High or Open: OFF TTL Low: ON
5	Enable/Disable	0V or Open: Enable 5V: Disable
6, 7	+28 V	
8	Fwd. Monitor Output	
9	Rev. Monitor Output	

5. Outline Drawing

