



The MA275/10/50HK-CP-A3 is a broadband high power amplifier for VHF-UHF applications. The amplifier supports signal amplification in the 20-530 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: MA275/10/50HK-CP-A3

1. Electrical Characteristics		
Item	Value	Note
Frequency Range	20 ~ 530 MHz	
Gain	52 dB (Min.) ± 2.0 dB	
Gain Flatness	± 2.0 dB	Over Freq. Range
VVA Range	25 dB (Min.)	
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	40% (Typ.)	Pout @ 100 W over full Frequency Range
HPA Enable/Disable	TTL "0 V or Open" ⇒ Enable TTL "5 V" ⇒ Disable	
Harmonics (2 nd /3 rd)	-30dBc (Max.) / -15 dBc (Max.)	Pout @ 100 W
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	
ALC Accuracy	± 0.5 dBm	
HPA Switching ON/OFF Speed	1 µSec	
VSWR Alarm	If reverse power ≥ +46 ± 1 dBm Alarm: TTL High	Pin 1 on DB9
DC Input Voltage	+ 26 to + 28 VDC	
Current Consumption	9.0 A (Max.)	@ 100 Watts
In/ Output Impedance	50 Ω	
Output Load Mismatch	6:1 @ all load phase & amplitude	@ 100 Watts
Max. Input Without 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
D	Production Released	04/08/13	G. David

4. DB9 Pin Description		
1	VSWR Alarm	Alarm: TTL High, Normal: TTL Low
2	Current Monitor	275 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

