



The MP435/170/45MK-A is suitable for 350 ~ 520 MHz applications. The amplifier employs linear LDMOS power devices that provide sufficient output power, wide dynamic range, and high gain. It integrates high power switch for TDD application.



Model: MP435/170/45MK-A

1. Electrical Characteristics

Item	Value	Note
Frequency Range	350 ~ 520 MHz	
Tx Gain	40 dB (Min.)	
Tx Gain Flatness	± 1.0 dB	Over Freq. Range
Tx Gain Variation	± 1 dB	Over Temp. Range
Tx Output Power P1	+43 dBm (Typ.)	
Tx Output Power Psat	+46 dBm (Min.)	
Insertion Loss of Rx Path	≤ 1.0 dB	
Input / Output VSWR	≤ 1.5	
Tx 2 nd Harmonics	-25 dBc (Typ.)	@ +45 dBm Output
Spurious	-70 dBc (Max.)	@ +45 dBm Output
Standby Mode	Rx	Power On
Tx/Rx Switch Control	TTL "0" ⇒ Tx On TTL "1" ⇒ Rx On	Pull Up in TTL High on Pin 4
Tx/Rx Switching Time	5 μs (Max.)	TTL Control Signal: F = 1 KHz, 50% DC
Tx/Rx Isolation	100 dB (Min.)	
DC Input Voltage	+22 ~ +28 VDC	
Efficiency @ +45 dBm CW	≥ 34%	VDC=22V
	≥ 36%	VDC=20V
Temperature Sensor	Vt + 500mV, 10mV/C°	Pin 3
VSWR Protection	If Tx Reflected Power ≥ 41 ± 1 dBm, Shutdown	Pin 5 Indicates: TTL High: Alarm
Input / Output Impedance	50 Ω	
Input Max without Damage	+15 dBm	For optimal performance, Input Power < +5 dBm
Reverse DC Voltage Protection	With TVS Diode 30V	Up to 600 Watts

2. Mechanical Characteristics

Monitoring Connector	DB-9-Male	4 – 40 screw
RF IN/OUT Connector	SMA 4 Holes – Female	
DC Input	Pin 6,7 on DB-9	
Dimensions	4.92" x 2.95" x 0.93"	
Weight	1.0 lb	

3. Environment Characteristics

		Base Plate
Operating Temperature	-40°C ~ +75°C	
Storage Temperature	-40°C ~ +95°C	
Cooling	External Heat-Sink	
Humidity (Non-condensing)	95% (Max.)	Designed to meet: IAW MIL-STD-810F
Operating Altitude	30,000 Feet (Min.)	
Vibration and Shock	Vibration 6.06 gRMS	Designed to meet: IAW MIL-STD-810F

Revision History

REV	Reason to Change	Date	Initialed by
A	Reflected Power protection added. Operating voltage, efficiency, VSWR threshold modified	01/15/15	Y.Z.
B	Added Reverse DC Voltage Protection	05/19/15	Y.Z.

4. DB9 Pin Description

1,2	+ VDC	
3	Temperature Sensor	
4	Tx/Rx Control	Tx On: TTL Low Rx On: TTL High
5	VSWR Alarm	Alarm: TTL High Normal: TTL Low
6	+ VDC	
7,8,9	Ground	

5. Outline Drawing

