



**MODEL MM60180P47EC1**  
**6~18GHz**  
**50 Watt**  
**WIDE BAND POWER RF AMPLIFIER**

**Advantages:**

- Operating Frequency: 6~18GHz
- Power Gain: 48dB Typical
- Psat: 50W Typical
- Supply Voltage: +28V
- 50 Ohms Input and Output Matched

**ELECTRICAL SPECIFICATIONS @ +28VDC, 25°C, 50Ω**

| Parameter                                   | Symbol              | Min | Typ | Max | Units |
|---------------------------------------------|---------------------|-----|-----|-----|-------|
| Operating Frequency                         | BW                  | 6   |     | 18  | GHz   |
| RF Output Power @Pin=0dBm                   | P <sub>SAT</sub>    |     | 50  |     | Watt  |
| Power Gain@P <sub>sat</sub>                 | G <sub>p</sub>      |     | 48  |     | dB    |
| Power Gain Flatness                         | Δ G <sub>p</sub>    |     | ± 2 |     | dB    |
| Input Return Loss                           | S <sub>11</sub>     |     | -10 |     | dB    |
| 2 <sup>nd</sup> Harmonics @P <sub>SAT</sub> | H                   |     | -15 | -12 | dBc   |
| Spurious Signals                            | Spur                |     |     | -60 | dBc   |
| In/Output Impedance                         | Impedance           |     | 50  |     | Ω     |
| Operating Voltage                           | V <sub>DC</sub>     | 26  | 28  | 30  | Volt  |
| DC Current @50W                             | I <sub>DD</sub>     |     | 18  | 21  | Amp   |
| Switching On/Off@10-90% Time, 1kHz          | T <sub>ON/OFF</sub> |     | 0.7 | 1   | μ S   |

**MECHANICAL SPECIFICATIONS**

| Parameter              | Value                                      | Units     | Notes   |
|------------------------|--------------------------------------------|-----------|---------|
| Dimensions             | 180x120x25[7.09x4.72x0.98]                 | mm [inch] | Maximum |
| Weight                 | 1.3 [2.87]                                 | kg [lbs]  | Maximum |
| RF Connectors Input    | SMA, Female                                |           |         |
| RF Connectors Output   | N, Female                                  |           |         |
| DC Interface Connector | J29A-25ZKP, male                           |           |         |
| Cooling                | External Heat sink Required (Not Supplied) |           |         |

**ENVIRONMENTAL CHARACTERISTICS (Design to Meet)**

| Parameter                          | Minimum | Typical | Maximum | Units | Notes   |
|------------------------------------|---------|---------|---------|-------|---------|
| Operating Temperature              | -40     |         | 60      | °C    |         |
| Non-operating Temperature          | -45     |         | 85      | °C    | Storage |
| Relative Humidity (non-condensing) |         |         | 95      | %     |         |

**ABSOLUTE MAXIMUM RATING**

|                                     |                                                                                  |         |
|-------------------------------------|----------------------------------------------------------------------------------|---------|
| Input RF drive level without damage | +5 dBm                                                                           | Maximum |
| Load VSWR @ POUT =30W               | 3:1 @ all load phase & amplitude continuous<br>More than 4:1 may cause PA damage |         |
| Over Temperature                    | 85°C @ heatsink [restored @ 60°C]                                                |         |



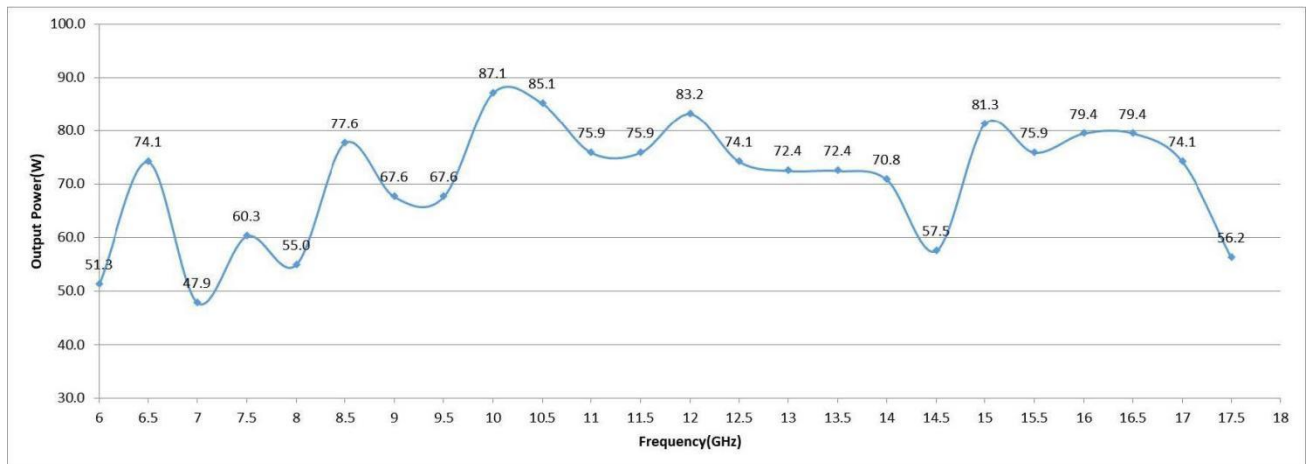
## POWER INTERFACE CONNECTOR

Male D-Sub is on the housing

| Pin # | Description   | Specifications                                                     |
|-------|---------------|--------------------------------------------------------------------|
| 1-9   | VDD           | 28VDC                                                              |
| 10-19 | GND           | Ground                                                             |
| 20    | ENABLE        | Amplifier Enable: TTL Logic High (3.3V~5V) (Internally Pulled-Low) |
| 21    | CURRENT SENSE | Analog voltage relative to $I_{DD}$ @ 100mV per Ampere             |
| 22    | CURRENT ALARM | Amplifier Alarm indicator: Normally TTL Low                        |
| 23    | TEMP ALARM    | Amplifier Alarm indicator: Normally TTL Low                        |
| 24    | TEMP SENSE    | Analog voltage relative to Module's Temperature @ 0.5V+10 mV/°C    |
| 25    | GND           | Ground                                                             |

## TYPICAL PERFORMANCE PLOTS (FOR REFERENCE ONLY)

Output Power (Normal temp.  $+25 \pm 3^\circ\text{C}$ )



**Note:** Adequate heatsink required.