

### Description

Model MS010620 is a multi-octave high power amplifier operating from 1 to 6 GHz range with 40 Watts typical output power. It provides 59 dB of small signal gain with flatness  $\pm 2.0$  dB. MS010620 uses advanced GaN microwave device technology and provides long term reliability and high ruggedness. Hermetically sealed package implements reliable operation in various harsh environments.



### Features:

- 40 W RF Output Power
- 50 Ohm Input / Output Impedance
- Digital 5 – bit gain control (1dB – 31dB)
- Built-in output power detector
- High switching speed (300 ns)
- Gain – temperature compensation
- High reliability and ruggedness

### Applications:

- Communications Systems
- Test Instrumentation
- Broadband RF Telemetry
- Point To Point Radio
- Fiber Optics

### Electrical Specifications @ T=25°C, VDC = +27 V, Z<sub>s</sub>=Z<sub>L</sub>=50 Ω

| Parameters                                 | Symbol            | Min | Typ       | Max       | Units |
|--|-------------------|-----|-----------|-----------|-------|
| Operating Frequency                        | BW                | 1   |           | 6         | GHz   |
| RF Saturated Output Power                  | P <sub>sat</sub>  | 33  | 41        |           | W     |
| RF Output power @ at P <sub>in</sub> =3dBm | P <sub>3dBm</sub> | 30  | 40        |           | W     |
| Small Signal Gain                          | G <sub>ss</sub>   | 55  | 59        | 65        | dB    |
| Small Signal Gain Flatness                 | ΔG                |     | ±2.0      | ±2.5      | dB    |
| VSWR Input / Output                        | VSWR In/Out       |     | 1.3 / 1.4 | 2.0 / 2.5 |       |
| Operating Voltage                          | VDC               | 26  | 27        | 30        | V     |
| Operating Current @ P <sub>sat</sub>       | I <sub>DD</sub>   |     |           | 7         | A     |

### Mechanical Specifications

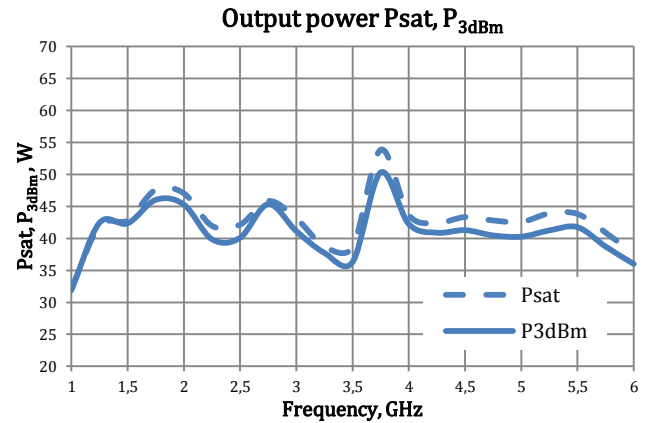
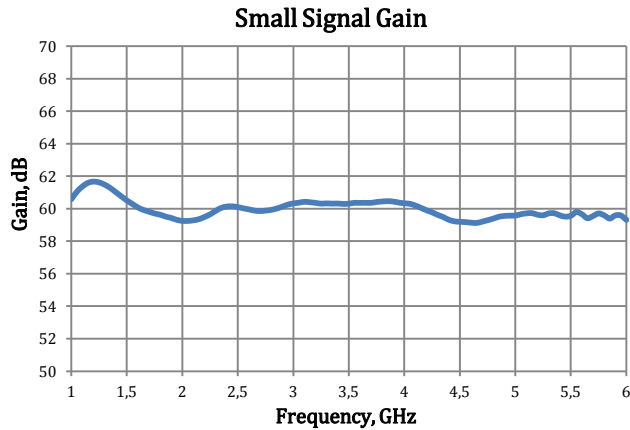
| Parameters                    | Value                                       | Unit         | Limits |
|-------------------------------|---|--------------|--------|
| Dimensions                    | 168.1 x 78.2 x 23.8<br>(6.62 x 3.08 x 0.93) | mm<br>(inch) | Max    |
| Weight                        | 0.45<br>(1.2)                               | kg<br>(lb)   | Max    |
| RF Connectors, Input / Output | SMA Female                                  |              |        |
| Interface connectors          | X1: Harwin M80-5101022                      |              |        |
|                               | X2 : Harwin M80-5T10222M2-01-331-01-331     |              |        |
| Cooling                       | External Heatsink                           |              |        |

### Environmental Specifications

| Parameters                        | Symbol           | Min | Typ | Max | Unit |
|-----------------------------------|------------------|-----|-----|-----|------|
| Operating Temperature (ambient)   | T <sub>a</sub>   | -55 |     | +60 | °C   |
| Operating Temperature (baseplate) | T <sub>c</sub>   | -55 |     | +75 | °C   |
| Storage temperature               | T <sub>stg</sub> | -65 |     | +85 | °C   |
| Relative Humidity                 | RH               |     |     | 98  | %    |

### Performance Plots

Test Conditions :  $T=25^{\circ}\text{C}$ ,  $Z_s=Z_L=50\Omega$



### DC Interface Connectors

| Connector | Pin# | Description | Specification                                 |
|-----------|------|-------------|---|
| X1        | 1    | 16          | Bit 16 dB control                             |
|           | 2    | 8           | Bit 8 dB control                              |
|           | 3    | 4           | Bit 4 dB control                              |
|           | 4    | 2           | Bit 2 dB control                              |
|           | 5    | 1           | Bit 1 dB control                              |
|           | 6    | DOUT        | Power Detector Output                         |
|           | 7,10 | G           | Ground  |
|           | 8    | T           | Analog Voltage Relative Temperature@10mV/°C   |
| X2        | 9    | Mod         | RF Enable (0V or GND=RF Off, +5V or NC=RF On) |
|           | A    | +27         | DC Power (+26... +30VDC)                      |
|           | B    | G(-27)      | Ground  |
|           | 1,2  | N/C         | No Connection                                 |

### Mechanical Outline

(All dimensions in millimeters)

