# M1030BP50 1000 – 3000 MHz / 50 Watts

SUNGSAN
Electronics&Communications Co., Ltd.

The M0830BP50 is suitable for broadband mobile jamming and band-specific high power linear applications in the P/L/S frequency bands. This compact module utilizes high power advanced GaN devices that provide excellent power density, high efficiency, wide dynamic range and low distortion. Exceptional performance, long term reliability and high efficiency are achieved by employing advanced broadband RF matching networks and combining techniques, EMI/RFI filters, machined housings and qualified components. Sungsan's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.

- Solid-state Class AB linear design
- Extremely wide instantaneous bandwidth
- Compact and lightweight
- Built-in control, monitoring and protection circuits
- Suitable for most modulation types (contact factory for details)
- 50 ohm input/output impedance
- Highly rugged and reliable

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

| Parameter | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Operating Frequency | BW | 1000 | | 3000 | MHz |
| Power Output (CW) | $P_{SAT}$ | 50 | | | Watt |
| Output Power @ 1dB Gain Compression Point | $P_{1dB}$ | 20 | | | Watt |
| Small Signal Gain | $G_{1dB}$ | 47 | 50 | 53 | dB |
| Input Power for Rated $P_{out}$ | $P_{IN}$ | | 0 | | dBm |
| Small Signal Gain Flatness | ΔG | | | ±2.0 | dB |
| Input Return Loss | $S_{11}$ | | | -10 | dB |
| Third Order Intercept Point<br>2-Tones @ 34 dBm/Tone, Δ = 1 MHz | IP3 | +50 | | | dBm |
| Harmonics @ $P_{1dB}$ Gain Compression Point | $2^{nd}$ / $3^{rd}$ | | | -17 / -20 | dBc |
| Spurious Signals | Spur | | -70 | -60 | dBc |
| Operating Voltage | $V_{DC}$ | 26 | 28 | 30 | Volt |
| Current Consumption @ Nominal Output Power | $I_{DD}$ | | 5.5 | 7.0 | Amp |
| Quiescent Current | $I_{DQ}$ | | 2.0 | | Amp |
| Switching Speed (10% to 90%) | $T_{SW}$ | | 2.0 | 5.0 | µs |

## ENVIRONMENTAL CHARACTERISTICS

| Parameter | Symbol | Min | Typ | Max | Unit | Limits |
|---|---|---|---|---|---|---|
| Operating Case Temperature | Tc | -20 | | +70 | °C | |
| Storage Temperature | Tstg | -40 | | +85 | °C | |
| Relative humidity w/o condensation | RH | | | 95 | % | |
| Altitude | ALT | | 10,000 | 30,000 | Feet | |
| Vibration | VI | MIL-STD-810F Method 514.5 Proc I random sinusoidal Category 4 or 9 or 13 | | | | |
| Shock | SH | MIL-STD-810F Method 516.4 Proc I<br>Operational: Acceleration (A) of 20.0 g ±1.5g with Duration of 11.0 ms ±1.0 ms shock pulse.<br>Non-Operational: Impact shocks of 25 g ±3.0g with Duration of 11.0 ms ±1.0 ms shock pulse. | | | | |

## LIMITS

| Parameter | Value | Limits |
|---|---|---|
| Input Overdrive | +10 dBm | Max |
| Load VSWR @ rated $P_{out}$ | ∞:1 @ all load phase & amplitude | Nom |
| Thermal Overload | Graceful Degradation | Max |

## MECHANICAL SPECIFICATIONS

| Parameter | Value | Units | Limits |
|---|---|---|---|
| Dimensions L x W x H | 6.4 x 3.4 x 1.1 | Inch | Max |
| Weight | TBD | lb. | Max |
| RF Connectors In/Out | J1-input SMA female,<br>J2 output SMA female<br>Finish Stainless still | | |
| DC / Control Connector | J3- Dsub, 9 Pin, Male | | |
| Cooling | External Heatsink | | |

## DC CONNECTOR- D-Sub, 9Pin, Male

| Pin # | Description | Specifications |
|---|---|---|
| 1 | N/C | Reserved |
| 2 | Current Consumption Monitor | Analog voltage relative to<br>$I_D$ @ 25 mV/100 mA (no load)<br>$I_D$ @ 20 mV/100 mA (100 k_ load) |
| 3 | Temperature Monitor | Analog voltage relative to module temperature @ 10 mV/°C |
| 4 | NC | |
| 5 | Shutdown | Enable: TTL “Low” (Logic 0) or Open<br>Disable: TTL “High” (Logic 1) |
| 6 | VDD | +28 $V_{DC}$ ± 0.6 $V_{DC}$ |
| 7 | VDD | +28 $V_{DC}$ ± 0.6 $V_{DC}$ |
| 8 | GND | Ground |
| 9 | GND | Ground |

## Outline Drawing