

M1020BP230 1000 – 2000 MHz / 230 Watts

The M1020BP230 is suitable for multi-octave bandwidth high power CW, modulated, and pulse applications. This amplifier utilizes high power GaN devices that provide wide frequency response and dynamic range, high gain, high efficiency, and good linearity. Exceptional performance, long-term reliability, and high efficiency are achieved by employing advanced broadband RF matching networks and combining techniques, built in high quality power supply, EMI/RFI filters, machined housing, and qualified components. Sungsan's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.

- Solid-state Class AB design
- Instantaneous ultra broadband
- Suitable for CW, AM, and FM
- 50 ohm input/output impedance
- High reliability and ruggedness

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

Parameter	Symbol	Min	Typ	Max	Unit
Operating Frequency	BW	1000		2000	MHz
Power Output CW P _{4dB}	P _{SAT}	230			Watt
Output Power @ 1 dB Gain Compression Point	P _{1dB}		80		Watt
Power Gain	G _{SAT}	10	13		dB
Small Signal Gain Flatness	ΔG _{SS}			±1.5	dB
Input Power for Rated P _{OUT}	P _{IN}		+40		dBm
Gain Flatness @ rated P _{OUT}	ΔG _P			±1.0	dB
Phase Tracking @ P _{SAT} (All module)	ΔPT			±10	DEG
Gain Tracking @ P _{SAT} (All module)	ΔGT			±0.75	dB
Input Return Loss	S ₁₁			-10	dB
Third Order Intercept Point @40dBm/ tone	IP3	+55			dBm
Harmonics @ rated P _{OUT}	H	-12			dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V _{DD}	26	28	30	Volt
Current Consumption @ rated P _{OUT}	I _{DD}		20	25	Amp
Current Consumption @ Shutdown	P _{DQ}			200	mA
Shutdown Time (Pin 5)	T _{ON/OFF}			5	μSec

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit	Limits
Operating Case Temperature	T _c	-20		+70	°C	
Storage Temperature	T _{stg}	-40		+85	°C	
Relative humidity (non-condensing)	RH			95	%	
Altitude (MIL-STD-810F Method 500.4)	ALT		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 Operational: Acceleration (A) of 20.0 g ±1.5 g with Duration of 11.0 ms ±1.0 ms shock pulse. Non-Operational: Impact shocks of 25 g ±3.0 g with Duration of 11.0 ms ±1.0 ms shock pulse.				

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LIMITS

Parameter	Value	Limits
Input RF drive level without damage	+45dBm	Max
Load VSWR @ Pout = 20W	∞ @ all load phase & amplitude	
Thermal Overload	85°C Graceful degradation	Max

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	8.2 x 5.0 x 1.0	Inch	Max
Weight	2.0	lb.	Max
RF Connectors In/Out	SMA female / N-type female		
DC Connectors	Hybrid Dsub, 7 Pin		
Cooling	External Heatsink		

DC CONNECTOR- D-Sub, 9Pin, Male

Pin #	Description	Specifications
A1	VDD	+28 \pm 2 V _{DC}
A2	GND	Ground
1	N/C	Reserved
2	Current Sensor	Analog voltage relative to I _D @ 25mV /100mA
3	Temp Sensor	Analog voltage relative to Module's Temperature @ 10 mV/°C
4	N/C	Reserved
5	Fast Shutdown	Amplifier Enable: TTL "Low" (Logic 0) or Open Amplifier Disable: TTL "High" (Logic 1)

OUTLINE DRAWING

