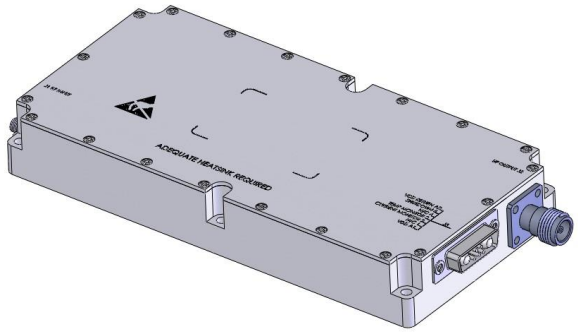
M1020BP150 1000 – 2000 MHz / 150 Watts

SUNGSAN
Electronics&Communications Co., Ltd.

The M1020BP150 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 @ 3-5dB compression point	P_{SAT}	100		150	Watt
Output Power @ 1dB Gain Compression Point	P_{1dB}		80		Watt
Gain @ P1 dB Gain Compression Point	G_p	48	50		dB
Input Power for Rated Pout	P_{IN}		0		dBm
Phase Tracking @ P_{SAT} (All module)	ΔP_T			±10	DEG
Gain Tracking @ P_{SAT} (All module)	ΔG_T			±1.0	dB
Input Return Loss	S_{11}			-10	dB
Noise Figure	NF			10	dB
Third Order Intercept Point	IP3		+55		dBm
Harmonics @ 100 W, 2nd/3rd @P_{SAT}	H			-10/-17	dBc
Spurious Signals	Spur		-70	-60	dBc
Operating Voltage	V_{DC}	26	28	30	Volt
Current Consumption	I_{DD}			14	Amp
Operating Voltage	V_{DC}	26	28	30	Volt
Quiescent Current (No RF input)	I_{DQ}			3.0	Amp
Switching Speed (10% to 90%)	T_{SW}		2.0	5.0	uSec
Switching Rate				100	KHz
Current Consumption @ AMP OFF	I_{SD}			0.3	Amp

LIMITS

Parameter	Value	Limits
Input Overdrive	+15 dBm	Max
DC Input	Reverse Polarity	
Load VSWR @ 100 W	∞ @ all load phase & amplitude	Nom
Thermal Overload	Graceful Degradation	Typ

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit	Limits
Operating Case Temperature	Tc	-20		+70	°C	
Storage Case Temperature	Tstg	-40		+85	°C	
Relative humidity (non-condensing)	RH			95	%	
Altitude (MIL-STD-810F Method 500.4)	ALT			50,000	Feet	
Vibration	VI	MIL-STD-810F Method 514.5 Proc I random Sinusoidal Category 4 or 9 or 13				

Parameter	Symbol	Min	Typ	Max	Unit	Limits
Shock	SH	MIL-STD-810F Method 516.4 Proc I Operational: Acceleration (A) of 200.0g ±1.5g With Duration of 11.0 ms ±1.0 ms shock pulse. Non-Operational: Impact shocks of 25 g ±3.0g with Duration of 11.0 ms ± 1.0ms shock pulse.				

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	7.4 x 4.1 x 1.06	Inch	Max
Weight	2	lb.	Max
RF Connectors In/Out	J1-input TNC female, J2 output TNC female, Finish Stainless still		
DC / Control Connector	J3- Hybrid Dsub, 7 Pin, Male		
(Mating Connector)	ITT Cannon P/N DAM7W2SA197		
Cooling	External Heatsink		
Sealing and Coating	Sealed Unit with gaskets covers, sealed connectors, and conformal coated boards		
External Coating	AkzoNobel Interpon 700 EM150K 7.5YR6/3 SEMI CLOSS (Power Application by electrostatic spraying) Base plate for thermal conduction shall be coated with conversion coating acc. to MIL-C-5541 class 3		

DC CONNECTOR- D-Sub, 9Pin, Male

Pin #	Description	Specifications
A1	VDD	+28 ±2 V_{DC}
A2	GND	Ground
1	N/C	Reserved
2	Current Monitor	Analog voltage relative to I_D @ 50 mV/100 mA (4V max)
3	Temp Monitor	Analog voltage relative to module temperature @ 10 mV/°C + 500 mV (4V max)
4	N/C	Reserved
5	Shutdown	Amplifier Enable: TTL “Low” (Logic 0) (10kΩ pull up resistor to 5V) Amplifier Disable: TTL “High” (Logic 1)
6,7	VDD	+28V_{DC} ±1VDC
8,9	GND	Ground

Outline Drawing