M1030BP100 1000 – 3000 MHz / 100 Watts

SUNGSAN
Electronics&Communications Co., Ltd.

The M1030NP100 is suitable for broadband mobile Jamming and band specific high power linear applications in the L and S frequency bands. This compact module utilizes high power advanced GaN devices that provide excellent power density, high efficiency, wide dynamic range and low distortions. 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 linear design
- Instantaneous ultra broadband
- Small and lightweight
- Suitable for CW, AM, and FM (for other modulation types, consult factory)
- 50 Ohm Input/Output impedance
- High reliability and ruggedness
- Built-in control, monitoring and protection circuits

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}	100			W
Output Power @ P_{1dB} G.C.P	P_{1dB}	40			W
Small Signal Gain	G_{SS}	10			dB
Input power for rated P_{1dB}	Pin		37		dBm
Power Gain	G_P	7			dB
Small Signal Gain Flatness	ΔG_{SS}			±1.5	dB
Input Return loss	S_{11}			-10	dB
Noise Figure	NF			10	dB
Harmonics @ Rated P_{1dB}	H		-20	-16	dBc
Third Order Intercept Point 2-Tone @ 40dBm/Tone, Δ = 250KHz	IP3		+58		dBm
Current Consumption @ Rated P_{OUT}	I_{DD}		10	12	Amp
Spurious Signals	Spur		-70		dBc
Operating Voltage	VDC	26	28	30	Volt
Quiescent Current	I_{DQ}		1.1		Amp
Standby Current Consumption @ Shutdown	I_{SD}		100		mA
Switching Time, 1kHz TTL, P_{OUT} = 40W	T_{ON}/T_{OFF}		2.0	5.0	uSec
Module to Module Gain Matching	ΔGT			±0.5	dB
Module to Module Phase Matching	ΔPT			±10	Deg

ENVIRONMENTAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit	Limits
Operating Case Temperature	Tc	-20		+85	°C	
Storage Temperature	T_{STG}	-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 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 Overdrive	+44dBm	Max
Load VSWR @ Rated Output Power	∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous	Nom
Thermal Overload	Graceful Degradation:	Max

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions L x W x H	6.81 x 4.43 x 1.14	In.	Max
Weight	2.2	lb.	Max
RF Connectors In/Out	J1 – Input SMA Female J2 – Output SMA Female		
DC and Control Connector	J3 – D-sub, 7-Pin, Hybrid Male		
Cooling	External Heatsink		

DC CONNECTOR- D-Sub, 9Pin, Male

Pin #	Description	Specifications
1	N/C	Reserved
2	Current Monitor	Analog voltage relative to I_D @ 25 mV/100 mA (no load)
3	Temperature Sense	Analog voltage relative to Module's Temperature @ 10mV/°C and or
4	N/C	Reserved
5	Shutdown	Enable: TTL "Low" (Logic 0) or Open Disable: TTL "High" (Logic 1)
A1	VDD	+28VDC to ±2VDC
A2	GND	Ground

Outline Drawing