

L-Band Pulsed Power Amplifier (SSPA)

REV.2.0_2024.12.05

1.2-1.4GHz/1000Watt/Module

Model Number: KNP1300M60A

Model KNP1300M60A is an L-band high power pulsed amplifier operating in the 1.2 to 1.4GHz frequency range and offering pulsed width up to 50 μ s with duty cycle up to 20%. The amplifier provides in excess of 1000Watts peak output power into a 50 Ohm load. The employment of gallium nitride (LDMOS) and chip-and-wire technology in manufacturing ensures this module state-of-the-art power performance with excellent power-to-volume ratio. It is ideal for high power pulse applications or Radar system.

FEATURES:

- Small Size and light weight;
- Power added efficiency > 15%;
- Digital interface option;
- pulse width/duty cycle protection;
- overvoltage, and over current protection.

ELECTRICAL SPECIFICATIONS @ +50.0VDC, 25°C, 50 μ S, 10%, 50 Ω System

Parameter	Symbol	Min	Typ	Max	Units
Operating Frequency	BW	1.2		1.4	GHz
RF Output Power	PPK	800	1000		Watt
Duty Cycle	Duty Cycle			20	%
Pulse Width	PWIDTH	2		50	μ S
PRI	PRI	200		1000	μ S
Harmonics @ Pout = 800W	H		-20		dBc
Spurious Signals	Spur		-55		dBc
RF Input Power @ Pout = 1000W	PIN		0		dBm
Input Return Loss	S11			-10	dB
Rise /Fall time (Pulse Performance)	TRISE/FALL/OFF(10-90)		100		nS
Switching Speed	TON/OFF		2		μ S
Power droop	Droop		1		dB
In/Output Impedance	Impedance		50		Ω
Operating Voltage	VDC	48	50	52	Volt
Peak Current Consumption @ Pout =1000W	IDD			30	Amp
Average Current Consumption @ Pout = 1000W	IDD		16		Amp

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Notes
Dimensions	300x 200 x25 [11.81x7.87x0.98]	mm [inch]	Max
Weight	4[8.8]	kg [lb]	Max
RF Connectors Input	Type-SMA, Female		
RF Connectors Output	Type-N, Female		
DC Interface Connector	Hybrid, D-Sub 7-Pin, Male		
Cooling	External Heatsink Required (Not supplied)		

ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Minimum	Typical	Maximum	Units	Notes
Operating Temperature	-40		60	°C	
Non-operating Temperature	-45		85	°C	Storage
Relative Humidity (non-condensing)			95	%	

Focus on Your Application

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Specifications subject to change without notice

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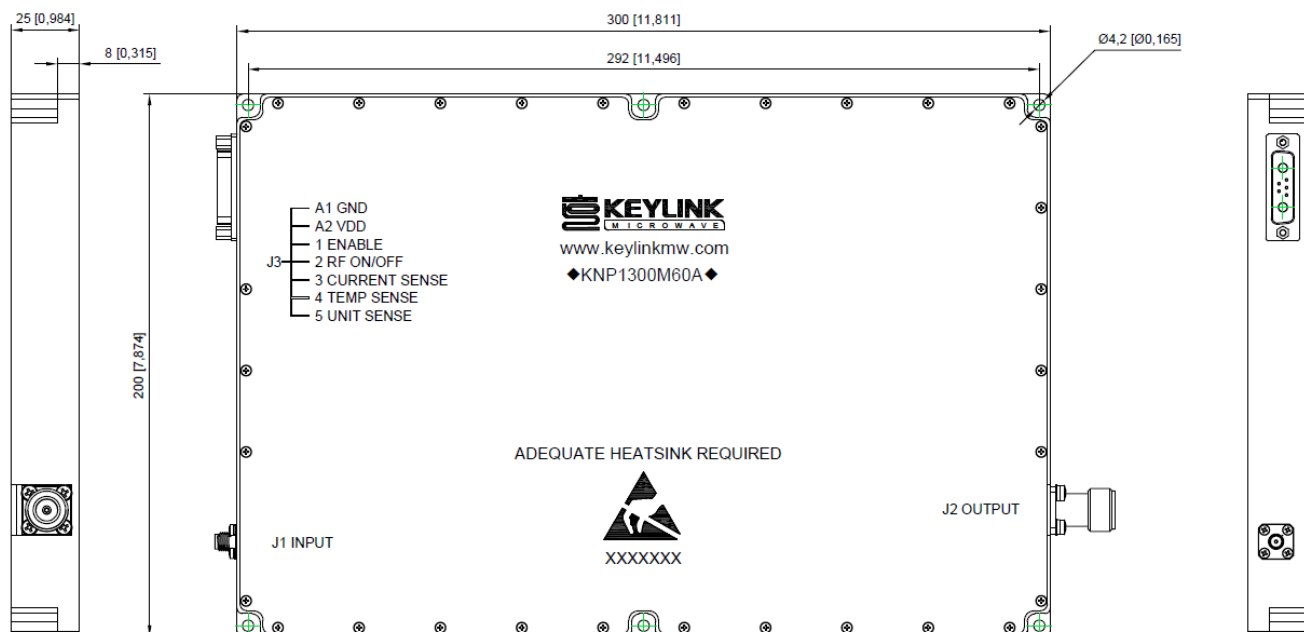
ABSOLUTE MAXIMUM RATING

Input RF drive level without damage	+5 dBm (Max)
Load VSWR @ Pout =500W	∞ @ all load phase & amplitude for duration of 1 minute; 3:1 @ all load phase & amplitude continuous
Over Temperature	85°C @ heatsink [restored @ 60°C]

DC INTERFACE CONNECTOR

Pin #	Description	Specifications
A1	GND	Ground
A2	VDD	+50VDC
1	ENABLE	Amplifier Enable: TTL Logic High (3.3V~5V) (Internally Pulled-Low)
2	RF ON/OFF	RF On: TTL Logic High (3.3V~5V) (Internally Pulled-Low)
3	CURRENT SENSE	Analog voltage relative to IDD @ 100mV per Ampere
4	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
5	UNIT RESET	Amplifier Reset: TTL Logic High (3.3~5V)

OUTLINE DRAWING (All dimensions in mm [inch])



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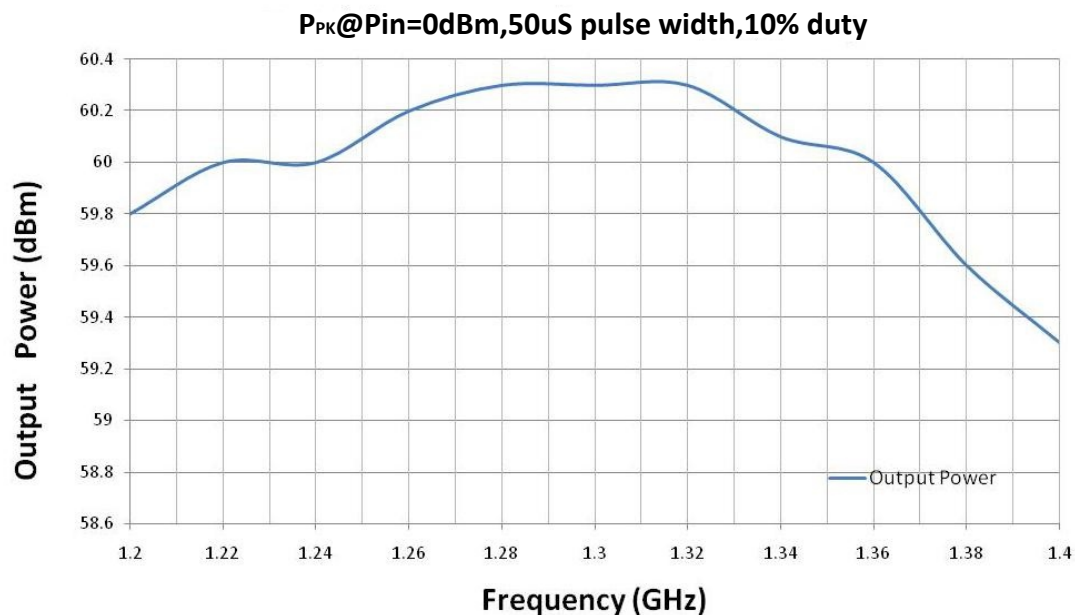
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TYPICAL PERFORMANCE PLOTS (For reference only)



Note: Adequate heatsink required.

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