

Narrowband High Power Amplifier Module (SSPA)

REV.3.0_2025.06.03

1200-1400MHz/250Watt/Module

Model Number: KN1300M54A

The model KN1300M54A is a narrowband high power amplifier operating between 1200 MHz and 1400 MHz and offering a wide dynamic Range with 250 Watts typical saturated power. The employment of advanced high power devices in manufacturing ensures this module exceptional power performance, long term reliability and high efficiency.

FEATURES:

- Small Size and light weight;
- Instantaneous narrowband;
- 50 Ohms input and Output matched;
- Built-in control and protection circuits.

ELECTRICAL SPECIFICATIONS @ +28.0VDC, 25°C, 50Ω

Parameter	Symbol	Minimum	Typical	Maximum	Units
Operating Frequency	BW	1200		1400	MHz
RF Output Power	Psat		250		Watt
Power Gain	Gp		54		dB
Power Gain Flatness	Δ G		±2		dB
Input Return Loss	S ₁₁			-10	dB
Harmonics @100W	H		-15		dBc
Spurious Signals	Spur		-55		dBc
In/Output Impedance			50		Ω
Operating Voltage	V _{DC}	26	28	32	Volt
DC Current @250W	I _{DD}		22		Amp
Switching Time @1kHz TTL	T _{on/off}		5		uSec

MECHANICAL SPECIFICATIONS

Parameter	Value	Units	Limits
Dimensions	200x150x25 [7.87x5.9x0.98]	mm [inch]	Maximum
Weight	2.5 [5.5]	kg [lbs]	Maximum
RF Connectors Input	SMA, Female		
RF Connectors Output	Typ-N, Female		
DC Interface Connector	Hybrid,D-sub 7 Pin, Male		
Cooling	External Heatsink (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	%	

Absolute Maximum Rating

Input RF drive level without damage	+5 dBm	Maximum
Load VSWR @ P _{OUT} =100W	∞ @ all load phase & amplitude for duration of 3 minute; 3:1 @ all load phase & amplitude continuous	
Thermal Overload	85°C @ heatsink [restored @ 60°C]	Minimum

Focus on Your Application

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Specifications subject to change without notice

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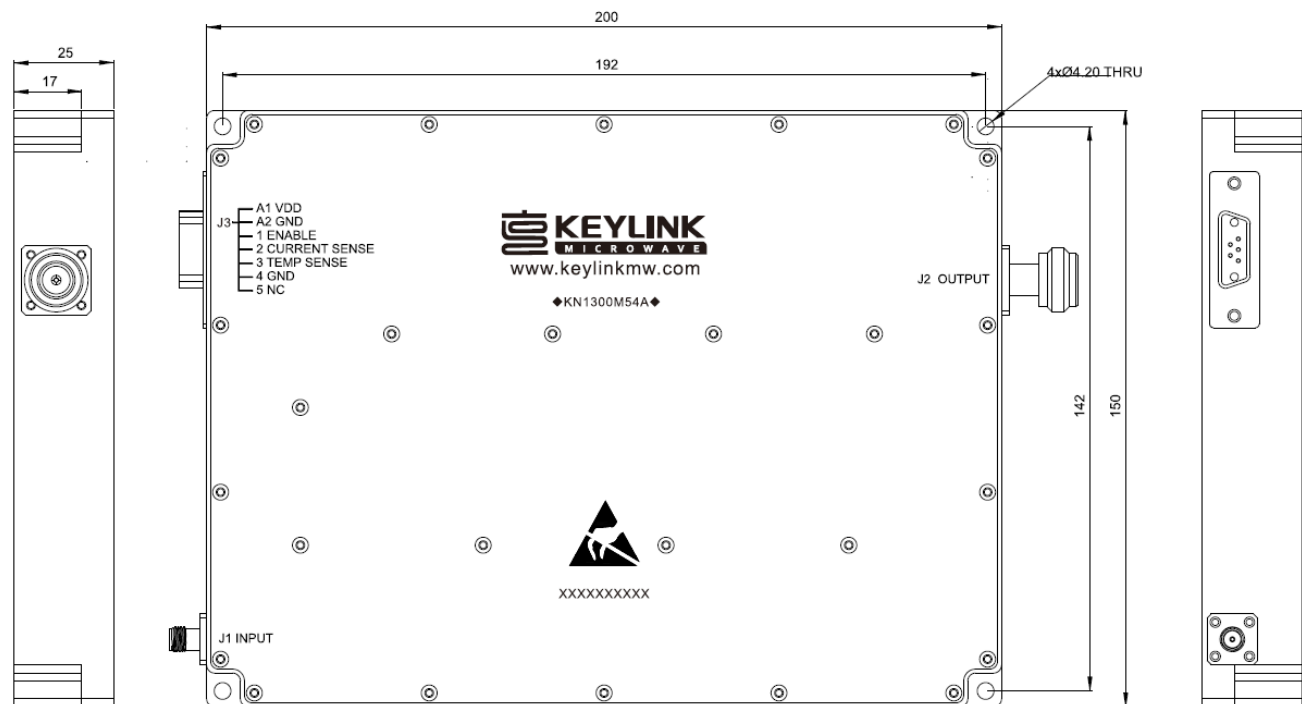
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DC INTERFACE CONNECTOR

Pin #	Description	Specifications
A1	VDD	28V _{DC}
A2	GND	Ground
1	ENABLE	Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low)
2	CURRENT SENSE	Analog voltage relative to I _{DD} @ 100mV per Ampere
3	TEMP SENSE	Analog voltage relative to Module's Temperature @ 10 mV/°C
4	GND	Ground
5	NC	Not connect

OUTLINE DRAWING(All dimensions in mm [inch])



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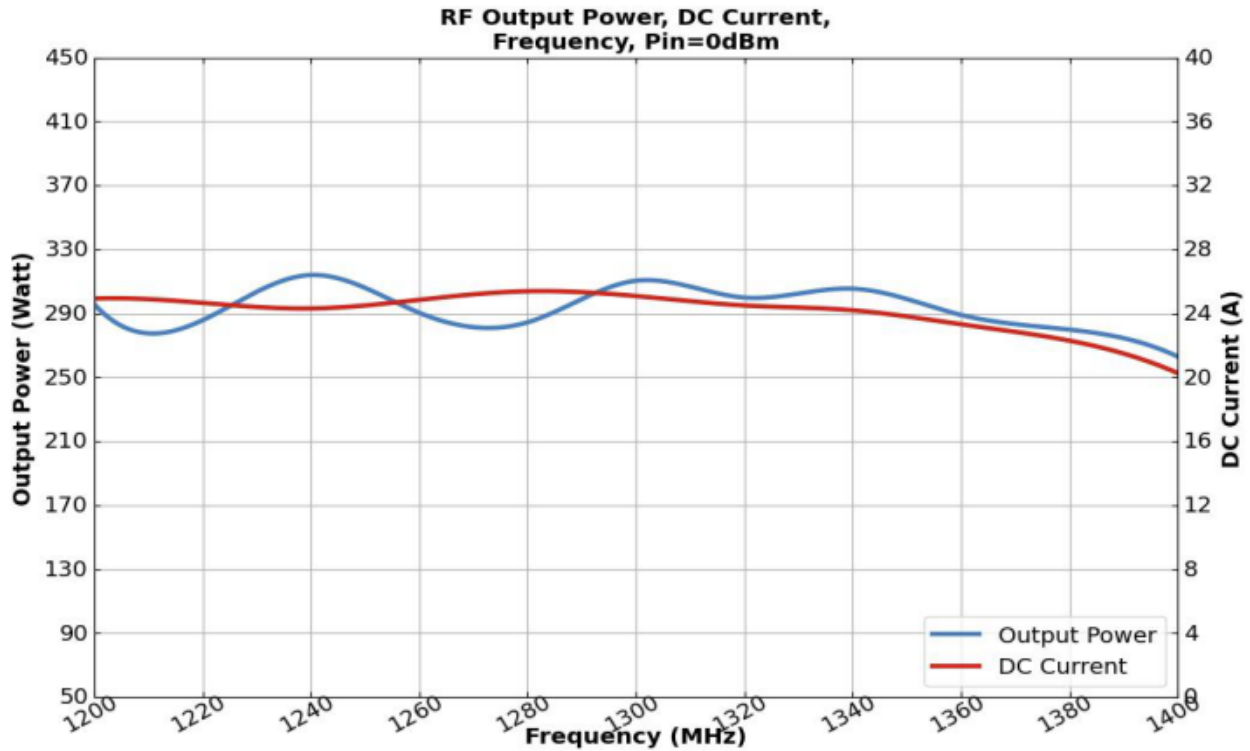
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TYPICAL PERFORMANCE PLOTS (FOR REFERENCE ONLY)



Note: Adequate heatsink required.

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