



R&N MICROWAVE

Narrowband Power Amplifier Module

RN-NPAM-4450-25

4.4-5.0GHz, 25Watts Module

Class A/AB linear design
Instantaneous ultra-wide bandwidth

Suitable for all single channel modulations standards Small form factor & light weight

Built-in protection circuit's
High reliability and ruggedness

FEATURES:

Narrowband & High power; High Efficiency, Great Linearity, Small Size & Light Weight, Low Distortion

ELECTRICAL SPECIFICATIONS					
Parameter	Symbol	Min	Typ	Max	Units
Operating Frequency	BW	4.4		5	GHz
RF Output Power @P1dB	P1dB	20	25		Watt
Output RF level adjust	P1	0-20, step 1dB			dB
Power Gain attenuation 0dB	GP		60		dB
Power Gain Flatness	ΔGp		± 1		dB
Inter-modulation distortion, two carrier 5	IMD		-25@39dBm		dBc
Modulation of the input carrier		OFDM-QPSK			
Noise figure	NF		10		dB
Gain variation with frequency		≤ 0.2 dB pk- pk over any 20 MH z			
Input/output VSWR	VSWR		2:1		
Harmonics @25W	H		-30		dBc
Spurious Signals	Spur		-60		dBc
Switch On/Off@10-90% Time	TON/OFF		2		μs
In/Output Impedance	Impedance		50		Ω
Operating Voltage	VDC		28		Volt
DC Current @20W CW	IDD		6		Amp
Efficiency		30% at +44 dBm			
Gain stability over temp & constant drive		± 0.5 dB at constant drive and temperature ± 1 dB over operating temperature			



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MECHANICAL SPECIFICATIONS					
Parameter	Value			Units	Notes
Dimensions	150x90x25 [5.9x3.54x0.98]			mm [inch]	Maximum
Weight	1.0 [2.64]			kg [lbs]	Maximum
RF Connectors Input	SMA, Female				
RF Connectors Output	N, Female				
DC Interface Connector	D-Sub 9-Pin, Male				
Cooling	Conduction				
ENVIRONMENTAL CHARACTERISTICS(Design to meet)					
Parameter	Minimum	Typical	Maximum	Units	Notes
Operating Temperature	-30		+70	°C	
Non-operating Temperature	-40		+80	°C	Storage
Relative Humidity (non-condensing)			95	%	
Altitude			up to 12000	feet	
ABSOLUTE MAXIMUM RATING					
Input RF drive level without damage	+10 dBm (Max)				
Load VSWR @ POUT =10W	∞ @ all load phase & amplitude for duration of 1 minutes; 3:1 @ all load phase & amplitude continuous				
Over Temperature	85°C @ heatsink [restored @ 60°C]				



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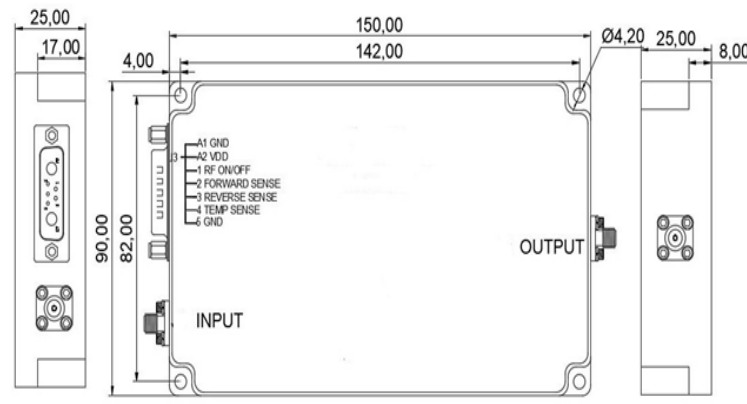
DC Interface Connector		
Pin #	Description	Specifications
A1	VDD	12VDC
A2	GND	Ground
1	SHUTDOWN	Amplifier Disable: TTL Logic High (3.3V) (Internally Pulled-Low)
2	FORWARD MONITOR	Analog voltage relative to forward power level
3	REVERSE MONITOR	Analog voltage relative to reflected power level
4	TEMP MONITOR	Analog voltage relative to Module's Temperature @ 10 mV/°C
5	GND	Ground



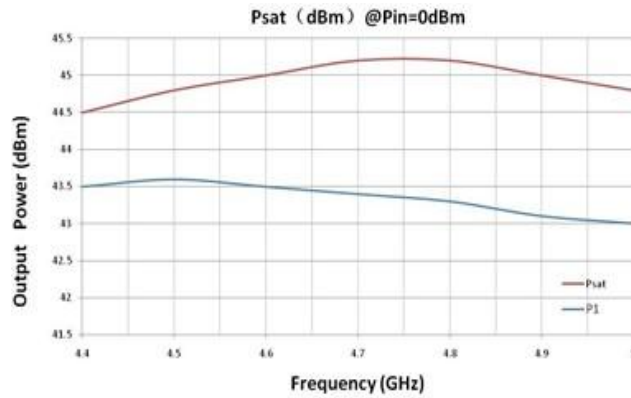
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OUTLINE DRAWING (All dimensions in mm [inch])



TYPICAL PERFORMANCE PLOTS(For reference only)



Note:
1. Adequate heatsink required.

01	OUT LINE DRAWING	--	--	--	01	
ITEM	DESIGNATION & FINAL DIMENSIONS	DRAWING NO		MATL	SURFACE TREATMENT	QTY
R&N Microwave	VERIFIED BY	PSR			03	
	CHECKED BY	RJ			02	
	DRAWN BY	ANIL	11.04.20	NSR	01	
--	NAME	SIGN	DATE	APPROVED	REV	REVISION NOTE
ALL DIMENSIONS ARE IN MM GENERAL TOLERANCE WHERE NOT SPECIFIED	PROJECTION	SIZE: A3	SCALE: NTS	TITLE:		
		MODEL NO:	Narrowband Power Amplifier Module			
MEDIUM IS:2102	DOC CODE	ISSUED ON	DWG NO:	RN-NPAM-4450-25	REV	SH 1 OF 1
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