

Preliminary Wideband Power Amplifier

RWP1516100-57



Product Features

- Frequency from 1550 to 1610 MHz
- Class AB GaN HEMT Design
- Typ 100Watt CW
- 50% Efficiency at CW 100W
- 50 ohm Input / Output impedance matched
- Pb Free / RoHS Standard

Applications

- Radar-Systems
- Jamming-Systems
- Drones/UAVs Systems
- Satellite Communication



Description

RFHIC's GaN Power Amplifier Pallet is Flanged type product which includes all matching for the convenience of customers. RWP1516100-57 is wide band Amp used for up 1550 to 1610 MHz.

Electrical Specifications @ $V_{DD} = 48V$; $T_c = 45^\circ C$; $Z_s = Z_L = 50\Omega$

PARAMETER	UNIT	MIN	TYP	MAX	CONDITION
Frequency	MHz	1550		1610	-
Small Signal Gain	dB		62		@ $P_{IN} = -20dBm$
Small Signal Gain Flatness	dB		± 0.5	± 1	@ $P_{IN} = -20dBm$
Input Power (P_{IN})	dBm		-12	11	@ $P_{out} = 100W$
Output Power (P_{SAT})	W	130	150		-
1dB Gain Compression Point Output Power (P_{1dB})	dBm	49	50		-
Input Return Loss	dB		-15	-13	S11
Output Return Loss	dB		-15	-13	S22
Efficiency	%	48	50		@ $P_{out} = 100W$
Supply Voltage	V		48		
Quiescent Current (I_{DQ})	A		0.25	0.3	$V_{DD} = 48.0V$
Current Consumption (I_{DD})			4.2	4.4	@ $P_{out} = 100W$
Third Order Intercept Point	dBm	48	50		2-Tone @ 34dBm/Tone, 100kHz Spacing
Harmonics @ $P_{out} = 100W$	dBc	-25	-35		2 nd
		-40	-45		3 rd
Spurious Signals	dBc		-70		

NOTE

*Measured for the $P_{out} = 100W$, $T = 45^\circ C$, T_c (Case Temperature) = $50^\circ C$ (Temp DET, $P_{in} = 1.0V \pm 0.05$), $V_{DD} = +48V$, 50Ω system

Absolute Maximum Ratings

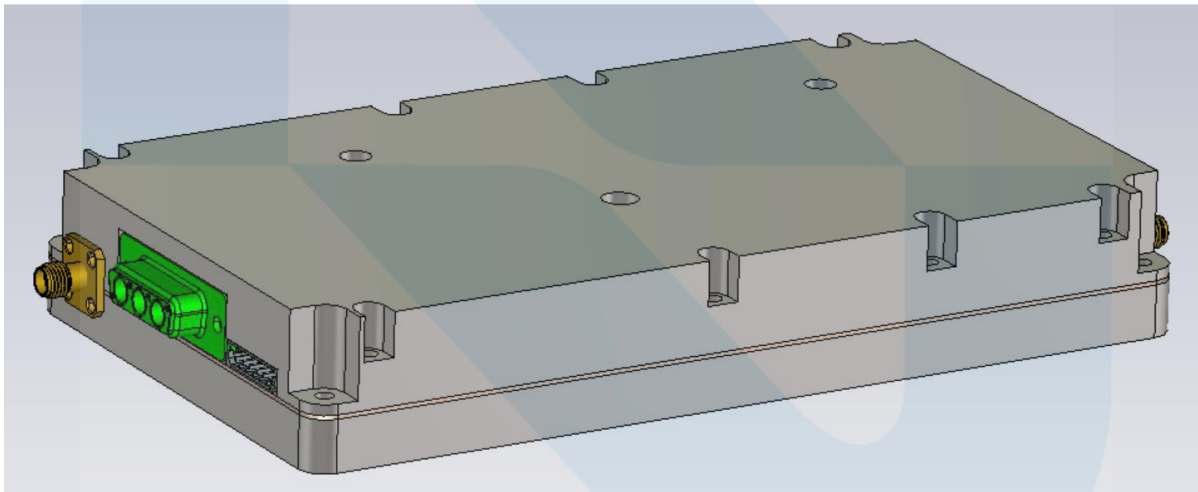
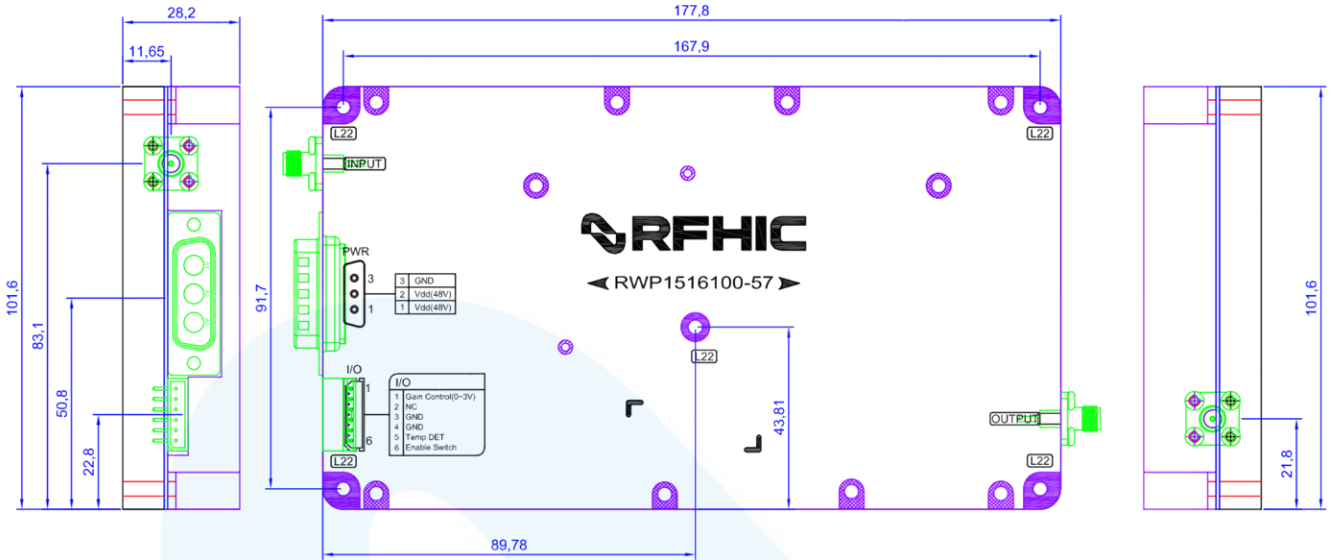
PARAMETER	UNIT	RATING
Input RF Power	dBm	0
Supply Voltage	V	50
Load Mismatch Value	-	3:1 @all load phase

*Input Signal Condition : CW 1-Tone

Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	Condition
Operating Flange Temperature	°C	-30	-	+60	
Storage Temperature	°C	-40	-	+85	

Product Dimensions



* Unit: mm[inch] | Tolerance: ±0.2[.008]

Mechanical Specification

PARAMETER	Units	Value
Dimensions	mm	220 x 196 x 31.1
RF Input Connector		SMA(Female)
RF Output Connector		N-type(Female)
I/O Connector		SMAW250-06P 6pin(Male)
		3W3/D-SUB(Female)
Cooling		External Heat-Sink Required

NOTE

- Connector position and module mount holes may be subjected change.

Interface Connector

3W3 D-SUB

Pin #	Description	Specifications
1	+V _{DD}	+48V
2		
3	GND	GROUND

Terminal Connector 6Pin-Control [SMAW250-06P]

Pin #	Description	Specifications
1	Gain Control	Control Voltage : 0 ~ +3V
2	NC	
3	GND	GROUND
4		
5	Temp DET	Temp Sense(LM50, Temp=(Vout-500mV) °C/10mV)
6	Enable Switch	TTL High : Amp Enable(+5V) TTL Low : Amp Disable(+0V)

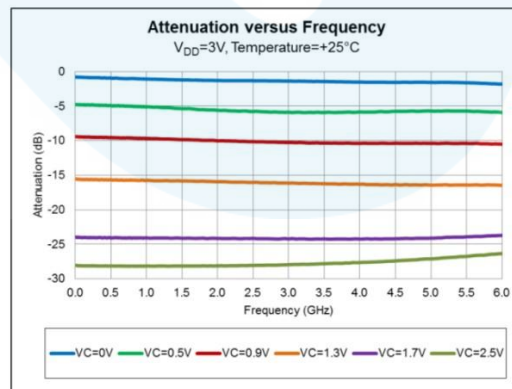
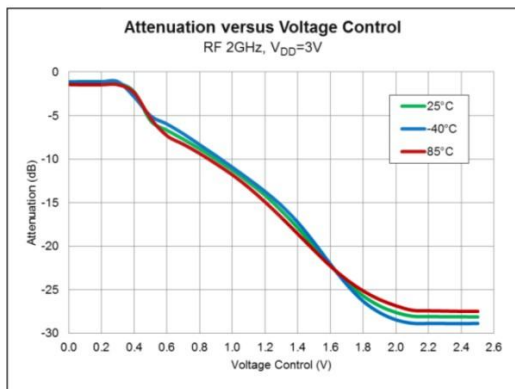
* For Mating Connector Use SMH250-06 Series.



RFSA2033

Measured Negative Attenuation Slope Performance

Note: 50Ω Application Circuit – Data includes PCB and connector losses



Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RWP1516100-57	04.29.2026	0.1	Initial Release	



Certification

This product is manufactured by a company that is certified for the AS9100D quality management system.

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