Solid State High Power Amplifier

2.0 – 6.0 GHz, Wide Instantaneous Bandwidth, Built-in protection

Broadband Series: PA1016

FEATURES

Class AB linear GaN design
2.0 – 6.0 GHz
Supports all modulation standards
35 Watt output power
46 dB gain
32 Volt operation

Fully protected – load VSWR, input overdrive, over/under supply voltage, overcurrent

Available as a module or rack mounted

APPLICATIONS

Public safety or military communication
Broadband jamming
LTE laboratory test

Clear communication. Anywhere. Any time.

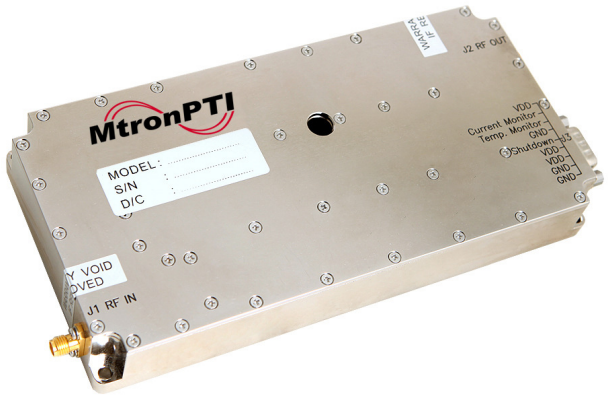
Software defined radios need broadband power.

The need to connect across town or across the battlefield couldn't be greater. As military and civilian groups move to broadband 4G LTE technology based systems, the need for wideband, linear, efficient power amplifiers grows. MtronPTI's PA1016 Solid State Power Amp meets that need with 35 Watts of CW power and better than 3.0 dB_{P-P} gain flatness across the band. With 2-tone IMD down at least -30 dBc, the PA1016 by itself or extended with digital predistortion will get the message through.

With a wide 2.0 to 6.0 GHz instantaneous bandwidth for complex modulation standards and with built in VSWR protection from accidental antenna faults, the PA1016 has 46 dB of gain and comes in a sealed case for high reliability. Designed with an emphasis on SWAP (size, weight and power) reduction, the PA1016 uses a linear GaN design with fast switching for full or half duplex operation.

MtronPTI's line of Solid State Power Amplifiers is backed by a multi-national design and manufacturing team with more than 150 years combined PA design experience. MtronPTI's continuing focus on client service ensures full program life engineering support from specification to production to next generation architecture planning.

Like all MtronPTI SSPAs, the PA1016 is available integrated with power supply, cooling and communications interface as a rack mountable unit for laboratory or fixed location applications.



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Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Comment
PASSBAND						
Operating Frequency Range	$F_{CARRIER}$	2		6	GHz	
Power Output	P_{OUT_MIN}	35			Watts	CW (Note: 1)
Power Gain		46			dB	
Power Gain Flatness				3.0	dB_{P-P}	Peak to peak across the band
Input / Output Return Loss	RL_{IN}	10			dB	Relative to 50Ω
2-Tone_Intermodulation (IMD)			-30		dBc	37 dBm / Tone, Δ = 1 MHz
Harmonics			-20		dBc	At rated P_{OUT}
Non Harmonic Spurious				-60	dBc	
Power						
Operating Voltage	V_{DD}	30		32	V_{DC}	
Current Consumption	I_{DD}			7	A	At rated P_{OUT}
Max Input Power	P_{IN_MIN}			+8	dBm	Without damage
Load VSWR Protection			∞ : 1			
Turn On / Off Speed				5	µSec	

Note 1: Output power over 2.0-2.2 GHz range might be lower than rated.

Environmental & Physical

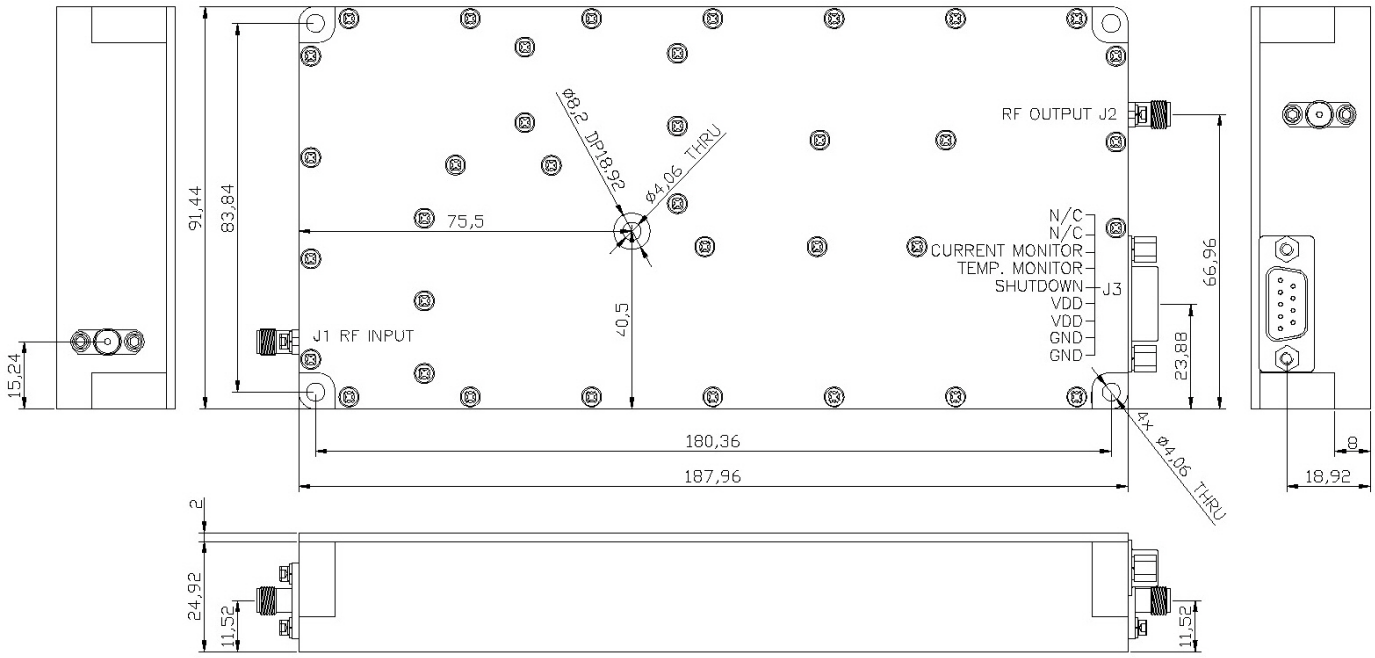
Parameter	Symbol	Min.	Typ.	Max.	Units	Comment
Operating Case Temperature	T_{OC}	-20		+75	℃	
Storage Temperature	T_{STR}	-40		+85	℃	
Relative Humidity		5		95	%	Non-condensing
Dimensions			188 x 92 x 27		mm	Excluding connectors
Weight			825		gr.	Max weight
RF Connectors IN / OUT			SMA Female			Cover Flange
DC Power / Interface Connector			9-pin D-Sub			
Cooling			External Heat Sink			Forced air required

D-Sub Connector Pin Assignments		
1	FWD	OPTION 101 – Forward power detect
2	VVA	OPTION 103 – Variable Voltage Attenuator
3	Current Sensor	I_D @ 50 mV / 100 mA typ.
4	Temperature Sensor	V_T @ 10 mV / ℃ + 500 mV typ.
5	Shutdown	TTL
6, 7	V_{DD}	32 V_{DC}
8, 9	GND	Ground

Ordering Information

Option	Function	Description
101	FWD	Forward power detect
103	VVA	Variable Voltage Attenuator

Case Outline



Revision History

Date	Rev.	Orig.	Details of Revision
20141118	A	DPD	Initial release in 2015 format

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