HD31590
SOLID STATE HIGH POWER AMPLIFIER

FEATURES

Class AB linear GaN design
Suitable for high power S-Band pulse applications
Built in fast pulse modulator
Built-in monitoring and protection circuits
High reliability and ruggedness
Built-in isolator



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

Parameter	Specification			Notes
Operating Frequency Range	2.7 - 3.1 GHz			
Peak Output Power	1000 Watt Min			
Pulse Characteristics	**Width (tp)**	**Duty (δ)**	**Droop**	
	100 µS Max	20 % Max	0.5 dB Typ	Max rating
Rise / Fall Time	<75 nS Typ			Nominal Peak Power (Time measured between 10% and 90% of output)
Switching Delay Time (Td)	200 nS Typ			
Power Gain	60 - 64 dB Nom			
Power Gain Flatness	2.0 dB p-p Max			
Input / Output Return Loss	-12 dB Max			Relative to 50 Ohm
Harmonics	-40 dBc Typ			At rated Pout
Spurious	-65 dBc Max			Non-harmonics
Operating Voltage	50 VDC Nom			Requires 10KuF Ext. Cap
Current Consumption [1]	14 Amp Ave Typ / 20 Amp Max			δ = 20%, PW 200µS
Input Power Protection	+5 dBm Max			<10 Sec without damage
Load VSWR Protection	5: 1 Max @ 20% / ∞ : 1 @ 1-10%			
Pulse Trigger / Modulator Speed	1 µS Max			

ENVIRONMENTAL CHARACTERISTICS

Parameter	Specification	Notes
Operating Case Temperature	-20 to +75°C	
Storage Temperature	-40 to +85 °C	
Relative Humidity	95 % Max	Non-condensing

MECHANICAL SPECIFICATIONS

Parameter	Specification	Notes
Dimensions	365 x 250 x 43 mm	
Weight	6.65 Kg.	Outline drawing
RF Connectors In/Out	SMA female / Type-N female	
DC Power / Interface Connector	7-Pin Hybrid D-Sub	
Cooling	External Heatsink	Forced air required

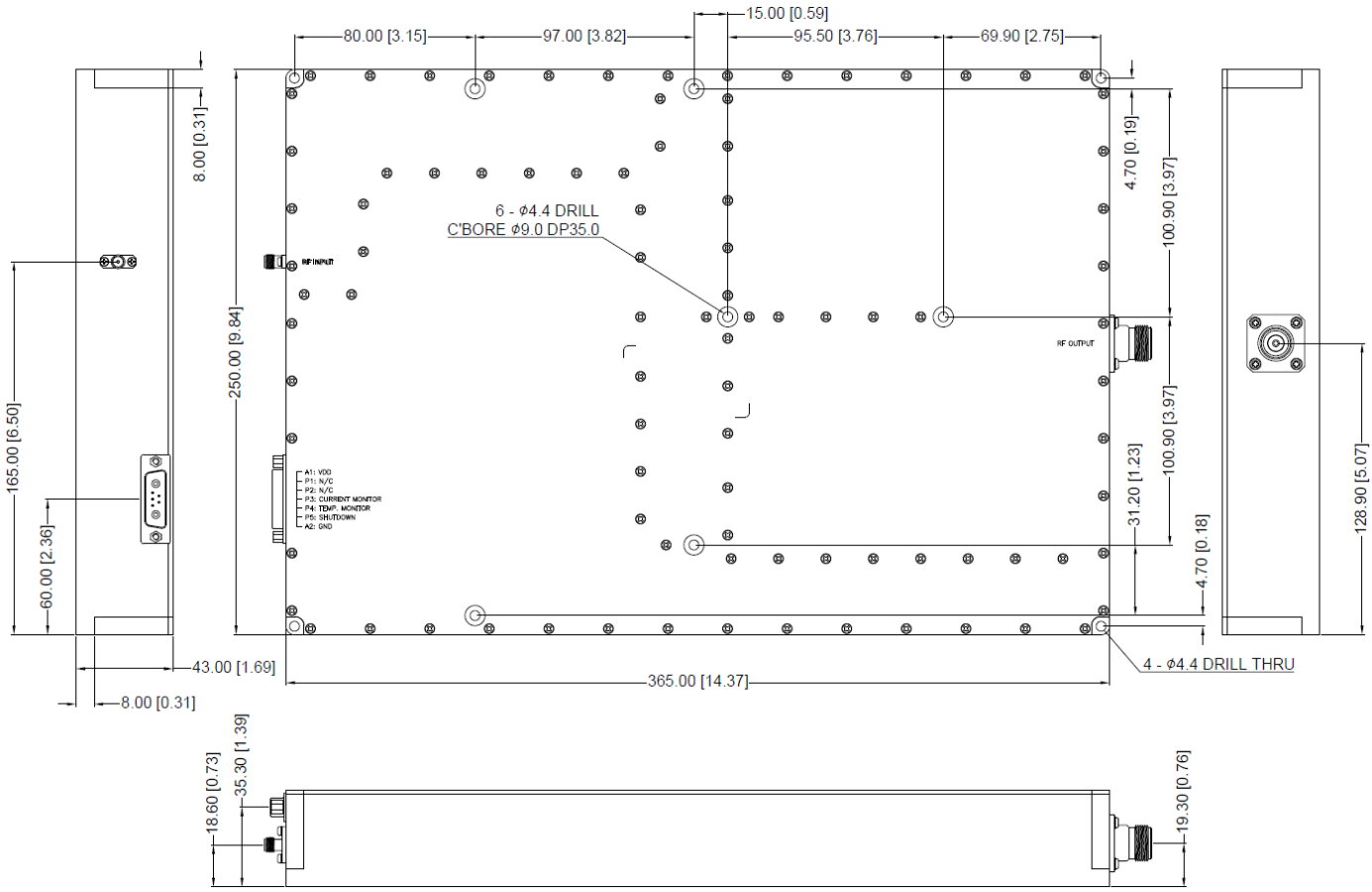
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PIN ASSIGNMENT

Pin	Function	Test Results
1	N/C	N/C
2	PULSE TRIGGER	Pulse Enable = TTL “High"(<3.2V) - Pulse Disable = Open or TTL “Low” (0V)
3	CURRENT MONITOR: I_D @ 80mV/100mA	i.e. 72mV @ Idq = 0.921A
4	TEMP. MONITOR: 10mV/°C + 500mV	i.e. 0.802V@ Room temp = 30.2°C
5	SHUTDOWN	Enable = Open or TTL “High"(<3.2V) - Disable = TTL “Low” (0V)
A1	VDD	+50VDC
A2	GND	Ground

OUTLINE DRAWING



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