

Description

The Model INS2204 is designed for band-specific applications. This high-power, solid-state amplifier utilizes GaN power devices to offer excellent efficiency and linearity characteristics from 5150 to 5250MHz. Inspower's ISO9001 quality management system assures consistent performance and the highest reliability.

Product Features

- 50Ω RF Impedance, Fully Integrated Matching
- 100W Minimum Saturated Output Power
- Single Supply Operation: Nominally 28Vdc
- Output VSWR Protection, High Temp Protection
- High Reliability and Rugged Design

Electrical Specifications @ +28.0VDC, 25°C, 50Ω System

Symbol	Parameter	Unit	Min.	Typ.	Max.
BW	Frequency of Operation	MHz	5150		5250
P _{SAT}	Power Output Saturated	Watt	100		
P _{1dB}	Power Output P1dB	Watt		50	
G _P	Power Gain @ Pin=0dBm	dB	50		
G _{SS}	Small Signal Gain @ Pin=-20dBm	dB	53	55	
P _{IN}	Input Power for Rated Psat	dBm		0	3
ΔG _{SS}	Small Signal Gain Flatness	dB			±1.5
ΔG _P	Power Gain Flatness	dB			±1.0
S11	Input VSWR	-			1.5:1
ΔG _{TEMP}	Gain variation with temperature	dB		±1.0	
IMD	Third Order Intermodulation Distortion 2- Tone@ 40dBm/Tone, 1MHz Spacing	dBc		-20	-15
H	Harmonics @ Pout=100W	dBc		-55	-50
Spur	Spurious Signal	dBc		-70	-60
V _{DC}	Operation Voltage	Volt	26	28	30
I _{DQ}	Quiescent Current	Amp		3.5	4
I _{DD}	Current Consumption @ Pout=100W	Amp		15	20

Mechanical Specifications

Parameters	Value	Unit
Dimensions (W x D x H)	190 x 155 x 28	mm
RF Connector Input/Output	SMA Female/ N-Type Female	-
DC Interface Connector	D-Sub Hybrid 7W2@ Male, 4-40 Screw	-
Weight	1.7	Kg

Environmental Characteristics

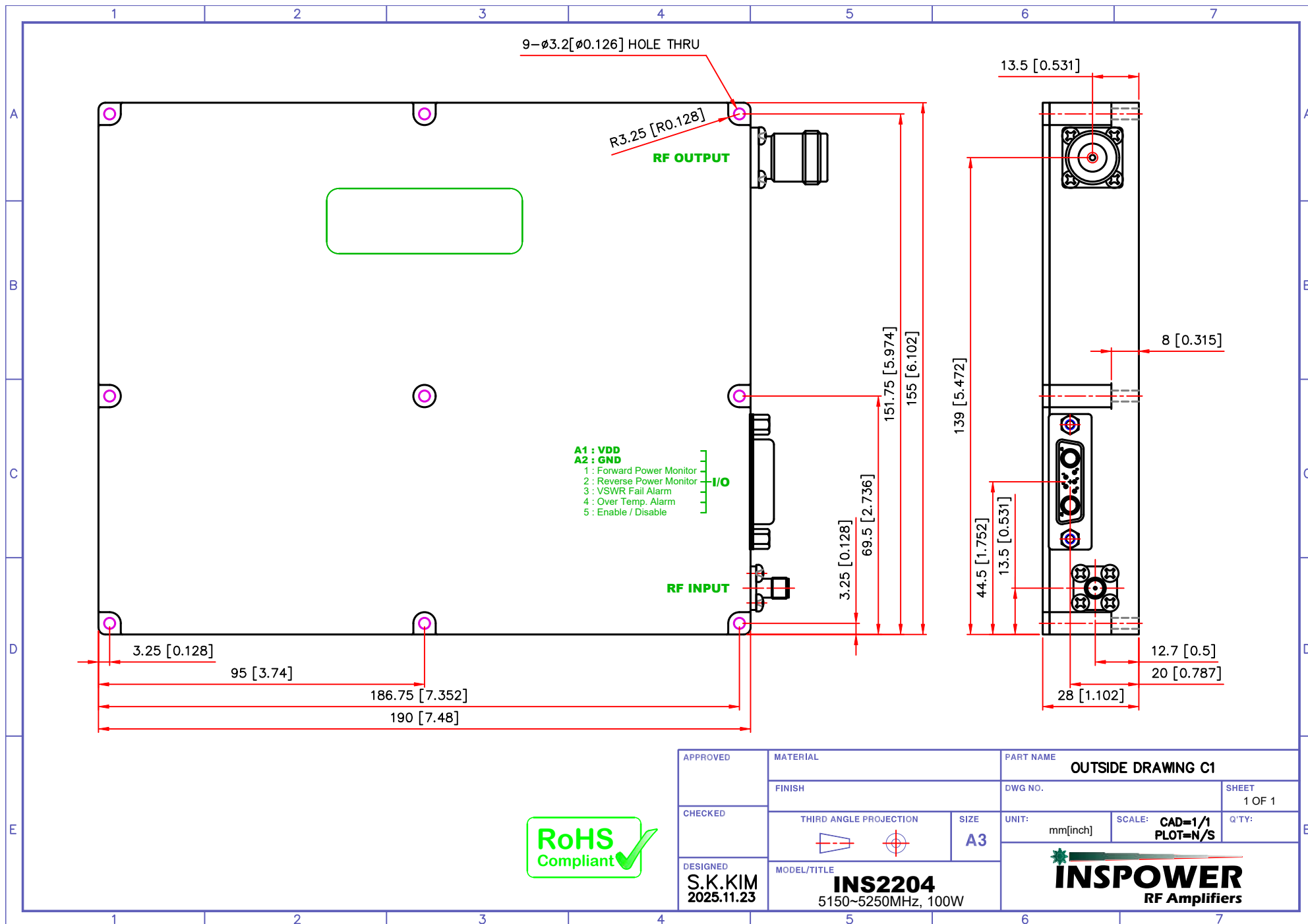
Parameters	Specifications	Remark
Operating Case Temperature Range	-30°C to +80°C	
Storage Temperature Range	-40°C to +85°C	
Operating Humidity	95% non-condensing	
Cooling	External Heat-Sink	

Protection

Item	Specifications	Remark
Input Overdrive Level	+5dBm Max	
VSWR Shutdown	3:1 Max (Return Loss = 6 dB)	
VSWR Shutdown Threshold	45dBm min	
Thermal Overload	+85 °C ±5 °C Shutdown, +65 °C ±5 °C Auto-recover	

I/O Interface (D-sub, Hybrid 7W2, Male)

Pin No	Pin Description	Specifications
1	Forward Power Monitor	RMS Detector. Vout=2.0V±0.05V@50dBm, Slope: 50mV/dB
2	Reverse Power Monitor	RMS Detector. Vout=2.0V±0.05V@50dBm, Slope: 50mV/dB
3	VSWR Fail Alarm	High +5V TTL Output when VSWR reached 3:1
4	Over Temp. Alarm	High +5V TTL Output @Case Temperature 85°C±5.0 Auto Restart @ Case Temperature 65°C±5.0
5	Enable/Disable	Enable: Active Low (GND) Disable: High +5V or Open status *Pulled-up @ 5V with 10k ohm
A1	VDD	+28VDC
A2	GND	Ground



APPROVED	MATERIAL		PART NAME	
	FINISH		OUTSIDE DRAWING C1	
CHECKED	THIRD ANGLE PROJECTION		DWG NO.	SHEET
	SIZE		UNIT:	Q'TY:
DESIGNED	MODEL/TITLE		SCALE: CAD=1/1	1 OF 1
	INS2204		PLOT=N/S	
S.K.KIM		INSPOWER		
2025.11.23		RF Amplifiers		
5150~5250MHZ, 100W				