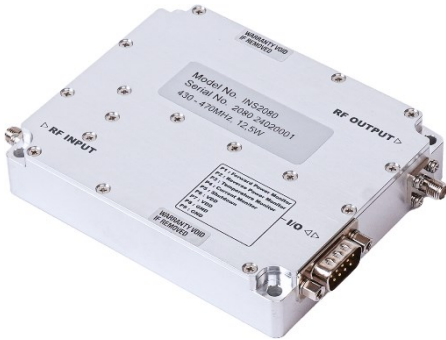


INS2080

430-470MHz 12.5W Power Amplifier



Description

The Model INS2080 is designed for band specific applications. This high power, class AB solid state amplifier utilizes LDMOS power devices to offer excellent efficiency and linearity characteristics from 430 to 470MHz. Inspower's ISO9001 quality management system assures consistent performance and highest reliability.

Product Features

- 50Ω RF impedance, Fully Integrated Matching
- 12.5W Minimum Saturated Output Power
- Single Supply Operation: Nominally 28V
- Built-in monitoring functions
- Built-in Output Isolator

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

Symbol	Parameter	Unit	Min.	Typ.	Max.
BW	Frequency of Operation	MHz	430		470
P _{SAT}	Power Output Saturated	Watt	12.5	20	
G _p	Power Gain	dB	41		
P _{IN}	Input Power for Rated P _{SAT}	dBm			0
ΔG _{SS}	Small Signal Gain Flatness	dB			±1.0
ΔG _p	Power Gain Flatness	dB			±1.0
S11	Input VSWR				1.5:1
S22	Output VSWR				1.5:1
VDC	Operation Voltage	V	26	28	30
I _{DD}	Current Consumption @ Pout=12.5Watt	A		1.3	1.5

Mechanical Specifications

Parameters	Value	Unit
Dimensions (W x D x H)	110 * 90 * 22	mm
RF Connector Input/output	SMA Female	
DC & I/O Connectors	D-Sub 9Pin Male	
Weight	0.5	Kg
Cooling	External Heat-Sink	

Environmental Specifications

Parameters	Specifications	Remark
Operating Case Temperature Range	-30°C to + 80 °C	Hottest Point
Storage Temperature Range	-40°C to +85°C	
Operating Humidity	95% non-Condensing	

Protection

Item	Specifications	Remark
Max RF Input Power	+10dBm Max	
Load VSWR	∞; 1	

I/O Interface (D-sub 9pin Male)

Pin No	Pin Description	Specifications
1	Forward Power Monitor	RMS Detector Vout=2V±0.05V@41dBm, Slope: 50mV/dB
2	Reverse Power Monitor	RMS Detector Vout=2V±0.05V@41dBm, Slope: 50mV/dB
3	Temp Monitor	Vout=10mV/°C×Temp+500mV
4	Current Monitor	Analog Voltage Relative to IDD @ 25mV/100mA
5	Shutdown	Enable: TTL "0" or Open Disable: TTL "1" = 3.3-5V
6	VDD	+28VDC
7	VDD	+28VDC
8	GND	GND
9	GND	GND

Typical Characteristics @ +28VDC, 25°C

Plot 1 – Small Signal & Power Gain

Top Curve: Small Signal Gain @ Pin= -20dBm

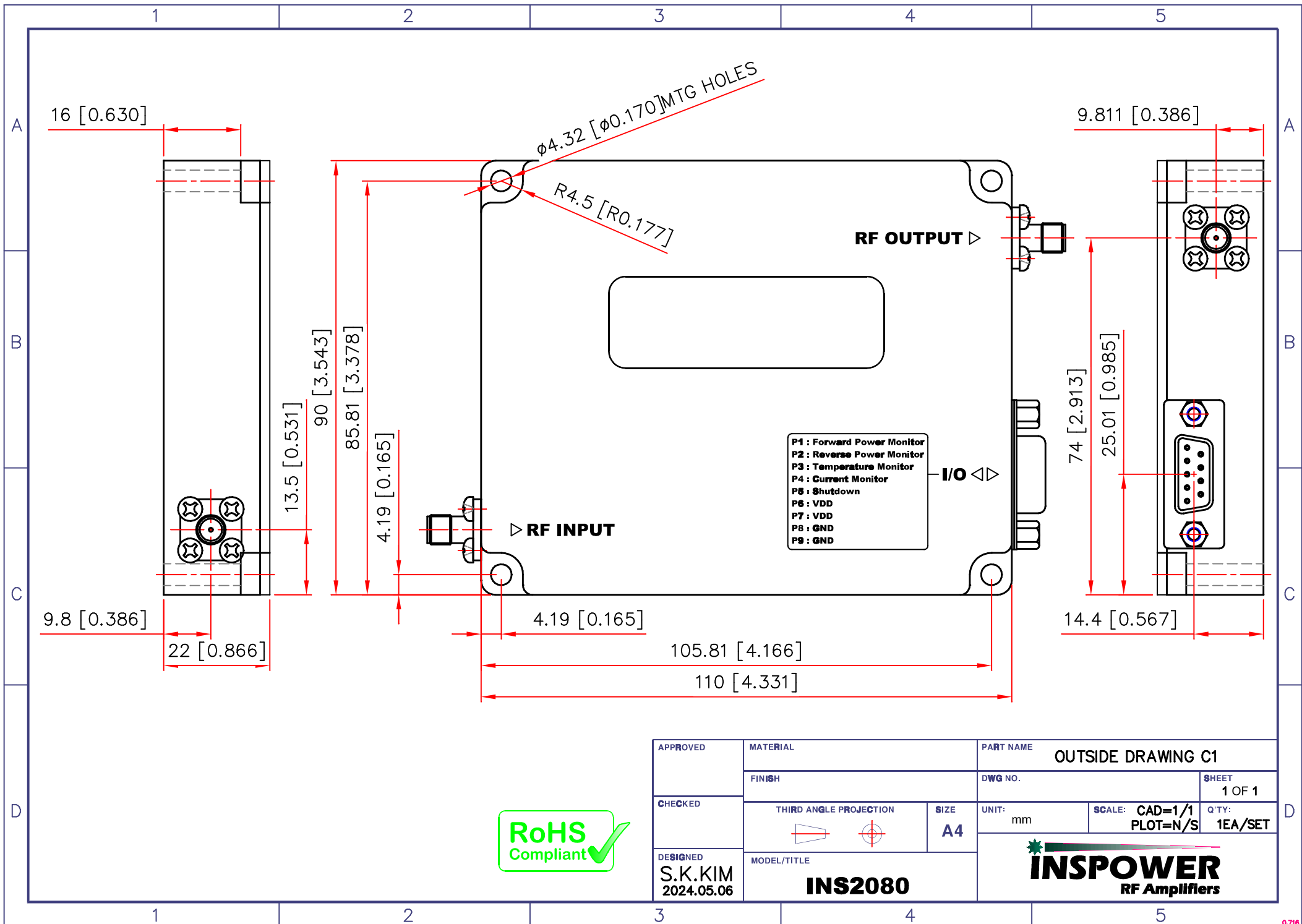
Middle Curve: Power Gain @ P_{SAT}, Pin= 0dBm

Reference: 42dB, 1dB/div

Bottom Curve: Input Return Loss

Reference: 0dB, 10dB/div





APPROVED	MATERIAL		PART NAME	
	FINISH		OUTSIDE DRAWING C1	
CHECKED	THIRD ANGLE PROJECTION		DWG NO.	SHEET
	SIZE		UNIT: mm	1 OF 1
DESIGNED	MODEL/TITLE		SCALE: CAD=1/1	Q'TY: 1EA/SET
	INS2080		PLOT=N/S	

INSPower
RF Amplifiers