INS2127

1200-1400MHz 100W Power Amplifier

INSPOWER
RF Amplifiers

Description

The Model INS2127 is designed for band specific application. This high power, class AB solid state amplifier utilizes LDMOS power devices to offer excellent efficiency and linearity characteristics from 1200 to 1400MHz. Inspower's ISO9001 quality management system assures consistent performance and highest reliability.

Product Features

- 50Ω RF impedance, Fully Integrated Matching
- 100W Minimum Saturated Output Power
- Single Supply Operation: Nominally 28V
- Output VSWR Protection, High Temp Protection
- High reliability and ruggedness

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

Symbol	Parameter	Unit	Min.	Typ.	Max.
BW	Operating Frequency	MHz	1200		1400
P_{SAT}	Power Output Saturated	Watt	100		
P_{1dB}	Power Output P1dB	Watt		80	
G_{SS}	Small Signal Gain	dB	51-	53	
G_{1dB}	Power Gain	dB	50		
P_{IN}	Input Power for Rated P_{SAT}	dBm		0	3
ΔG_{SS}	Small Signal Gain Flatness	dB			±2.0
ΔG_P	Power Gain Flatness	dB			±1.0
S11	Input Return Loss	dB			-15
IMD	Third Order Intermodulation Distortion 2-Tone@ 41dBm/Tone, 2MHz Spacing	dBc		-25	-20
H	Harmonics @Pout=100W	dBc			-40
Spur	Spurious Signal	dBc		-70	-60
V_{DC}	Operation Voltage	Volt	26.0	28.0	32.0
I_{DD}	Current Consumption @Pout=100W	Amp		9	11
I_{DQ}	Quiescent Current	Amp		1.5	2
I_{SQ}	Current Consumption @Shutdown	mA			250
$T_{ON/OFF}$	Switching Time	uSec		2	5

Mechanical Specification

Parameters	Value	Limit	Unit
Dimension (W × D × H)	230 * 95 * 25.4	-	mm
RF Connector Input/output	SMA Female / N Female	-	-
DC Interface Connector	D Sub Hybrid 7W2 @ Male, 4-40 Screw	-	-
Weight	800	Max	Kg
Cooling	External Heat-sink	-	-

Environmental Characteristics

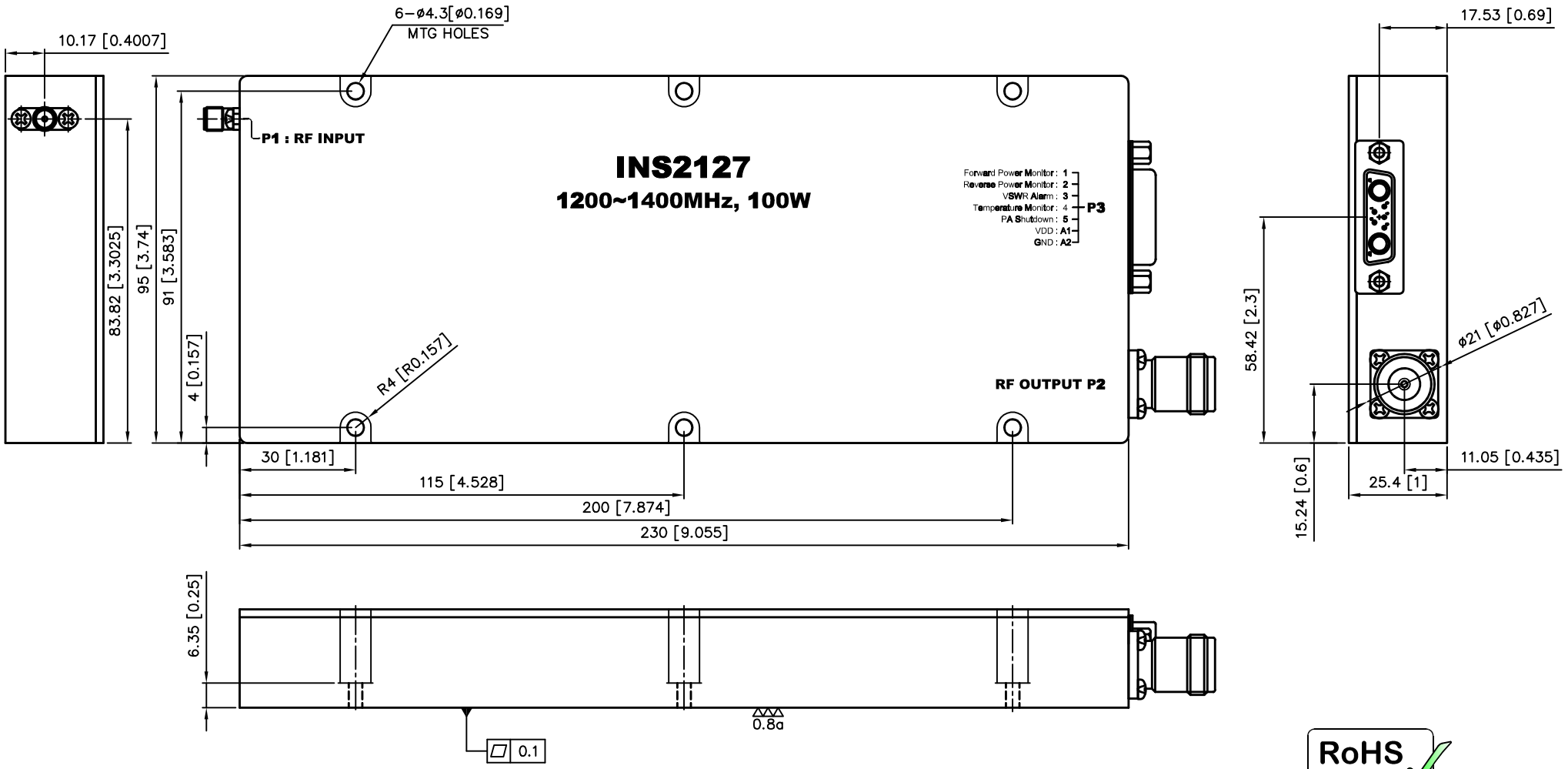
Parameters	Specifications	Remark
Operating Case Temperature Range	-40°C to +80°C	
Storage Temperature	-40°C to +85°C	
Relative Humidity non-condensing	95%	

Protection

Item	Specifications for Activation	Specifications for Recovery
Input RF drive level without damage	+5dBm Max	
VSWR Protection	Isolator included, VSWR = inf	
VSWR Shutdown	3:1 Max (R. L= 6dB)	
VSWR Shutdown Threshold	Threshold 45dBm min	
Thermal Overload	+90 °C ±5 °C Shutdown	+70 °C ±5 °C Auto-recover

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

Pin No	Pin Description	Specifications
1	Forward Power Monitor	RMS Detector Vout=2V±0.05V@50dBm, Slope: 50mV/dB
2	Reverse Power Monitor	RMS Detector Vout=2V±0.05V@50dBm, Slope: 50mV/dB
3	VSWR Fail Alarm	High +5V TTL Output when VSWR reached 3:1
4	Temperature Monitor	Vout=10mV/°C×Temp+500mV
5	PA Shutdown	Fast Switching Enabled State: TTL Low or Open, Disabled State: TTL High 3.3-5V
A1	VDD	+28VDC
A2	GND	Ground



RoHS Compliant

APPROVED	MATERIAL	PART NAME	OUTSIDE DRAWING
	FINISH	DWG NO.	SHEET 1 OF 1
CHECKED	THIRD ANGLE PROJECTION	SIZE A3	UNIT: mm[INCH] / SCALE: CAD=1/1 PLOT=N/S / Q'TY:
DESIGNED S.K.KIM 2024.01.19	MODEL/TITLE INS2127		INSPOWER RF Amplifiers