

INS3004

20-530MHz 12W Broadband High Power Amplifier

Description

The Model INS3004 is a high power, class AB solid state amplifier which utilizes the latest GaN Technology to offer broadband performance from 20 to 530MHz. Inspower's ISO9001 quality management system assure consistent performance and highest reliability.

Product Features

- Instantaneous ultra-broadband 20MHz to 530MHz
- 13W P_{SAT} Minimum
- 50 Ω RF impedance, Fully Integrated Matching
- High reliability and ruggedness , and High Efficiency



Electrical specifications

Symbol	Parameter	Unit	Min.	Typ.	Max.
BW	Operating Frequency	MHz	20		530
P _{SAT}	Power Output CW	W	13		
P _{1dB}	Pout @ 1dB Gain Compression Point	W		12	
G _{1dB}	Power Gain @ 1dB Gain Compression Point	dB	42		
ΔG	Small Signal Gain Flatness	dB			±2.0
P _{IN}	Input Power for Rated Psat	dBm		0	
S11	Input Return Loss	dB			-10
NF	Noise Figure	dB			10
IP3	Third Order Intercept Point 2- Tones, Pout = 27 dBm/Tone, Δ=100KHz	dBm		49	
Spur	Spurious Signal	dBc		-70	-60
H	2 nd Harmonics @ 13W	dBc		-25	
	3 rd Harmonics @ 13W	dBc		-12	
V _{DC}	Operation Voltage	Volt	26.0	28.0	30.0
I _{psat}	Current Consumption @ 13W	Amp			1
T _{ON/OFF}	Turn-On/Off Switching Time	uSec			10
Att	Switching Attenuation	dB			-50

Mechanical Specification

Parameters	Value	Unit
Dimensions (W x D x H)	85 x 85 x 26	mm
RF Connector Input/output	SMA Female	-
DC Connector	D-sub 9-Pin, Male	-
Weight	300	gram
Cooling	External Heat-sink	-

Environmental Characteristics

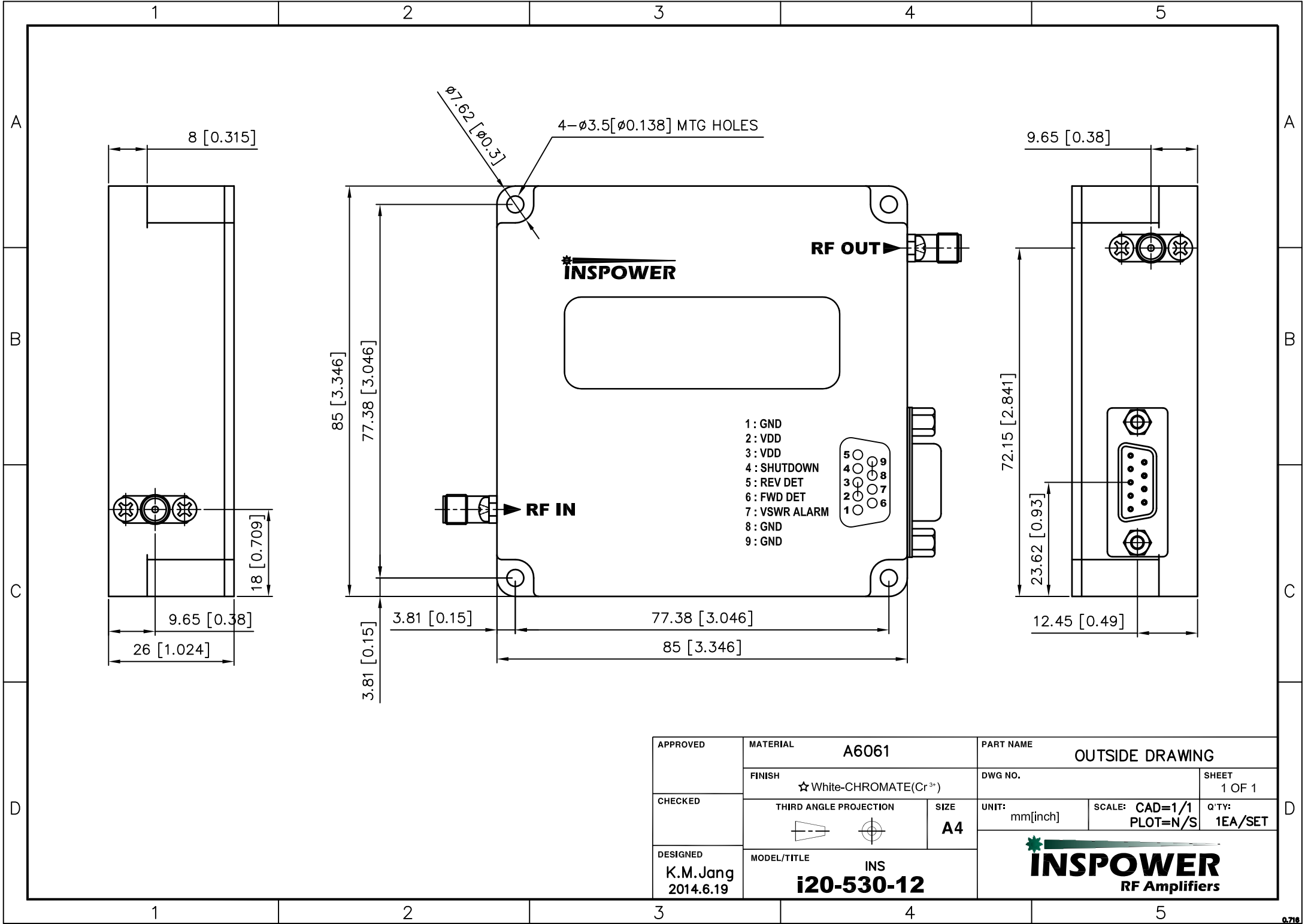
Symbol	Parameter	Specifications	Remark
Tc	Operating Base plate Temperature	-40°C to +80°C	
Tstg	Storage Temperature	-40°C to +85°C	

Survivability

Item		Specifications for Activation
Input Overdrive	P_{oo}	+10dBm
VSWR Handling@Psat	ψ	4:1 @all Frequencies, all phase, all temperatures for infinite time
		10:1 @all Frequencies, all phase, all temperatures for 10msec
Thermal Shutdown	T_{OL}	Above +85°C Shutdown, Below +70°C Recovery

Interface Connector (D-sub 9pin, Male)

Pin No	Pin Description	Specifications
1	GND	Ground
2	VDD	+28vdc
3	VDD	+28vdc
4	Shutdown	Amplifier Enable: TTL "Low" (Logic 0) or Open Amplifier Disable: TTL "High" (Logic 1=3.3-5V)
5	Reverse Power Detector	RMS Detector Vout=1.2V±0.1V @ 41dBm, Slope: 31mV/dB
6	Forward Power Detector	RMS Detector Vout=1.2V±0.1V @ 41dBm, Slope: 31mV/dB
7	VSWR Alarm	when VSWR 10:1 reached this pin will change state to 3.3V
8	GND	Ground
9	GND	Ground



APPROVED	MATERIAL	A6061		PART NAME		OUTSIDE DRAWING	
	FINISH	☆ White-CHROMATE(Cr ³⁺)		DWG NO.	SHEET 1 OF 1		
CHECKED	THIRD ANGLE PROJECTION			SIZE	A4		
	DESIGNED	K.M.Jang 2014.6.19		MODEL/TITLE	INS i20-530-12		
				UNIT:	mm[inch]	SCALE: CAD=1/1 PLOT=N/S	Q'TY: 1EA/SET
				 INSPOWER RF Amplifiers			