

### Description

The Model INS3024 is a high power, class AB solid state amplifier which utilizes LDMOS Power devices to offer broadband performance from 20 to 520MHz. Inspower's ISO9001 quality management system assure consistent performance and highest reliability.

### Product Features

- Instantaneous ultra-broadband 20MHz to 520MHz
- 120W P<sub>SAT</sub> typical
- Infinite VSWR handling at Max P<sub>SAT</sub>
- 50 Ω RF impedance, Fully Integrated Matching
- Small and Light weight
- High reliability and ruggedness , and High Efficiency



### Electrical specifications

Symbol	Parameter	Unit	Min.	Typ.	Max.
BW	Operating Frequency	MHz	20		520
P <sub>SAT</sub>	Power Output CW	W	100	120	
P <sub>1dB</sub>	Pout @ 1dB Gain Compression Point	W		80	
G <sub>1dB</sub>	Power Gain @ 1dB Gain Compression Point	dB	50		
ΔG	Small Signal Gain Flatness	dB			±3.5
P <sub>IN</sub>	Input Power for Rated Output	dBm		0	
S11	Input Return Loss	dB			-10
NF	Noise Figure@ minimum attenuation	dB		7	10
IP3	Third Order Intercept Point 2- Tones, Pout = 37dBm/Tone, Δ=100KHz	dBm		+54	
Spur	Spurious Signal	dBc		-70	-60
H	2 <sup>nd</sup> Harmonics @ 100W	dBc		-40	
	3 <sup>rd</sup> Harmonics @ 100W	dBc		-15	
V <sub>DC</sub>	Operation Voltage	Volt	26.0	28.0	30.0
I <sub>DD</sub>	Current Consumption @ 100W	Amp		10	12

### Mechanical Specification

Parameters	Value	Unit
Dimensions (W x D x H)	134.62× 63.5 × 26.67 (5.3" × 2.5" × 1.050")	mm
RF Connector Input/output	SMA Female	-
DC Connector	Feed Thru	-
Weight	0.5	Kg
Cooling	External Heat-sink	-

### Environmental Characteristics

Symbol	Parameter	Specifications	Remark
Tc	Operating Case Temperature	-40°C to +85°C	
Tstg	Storage Temperature	-40°C to +85°C	
RH	Relative Humidity	95% (non-Condensing)	

### Survivability

Item	Specifications for Activation	Remark
Input Overdrive	+10dBm	Max
Load VSWR	∞ : 1	
Thermal Shutdown	95±5 °C , Automatic recovery at 75±5 °C	

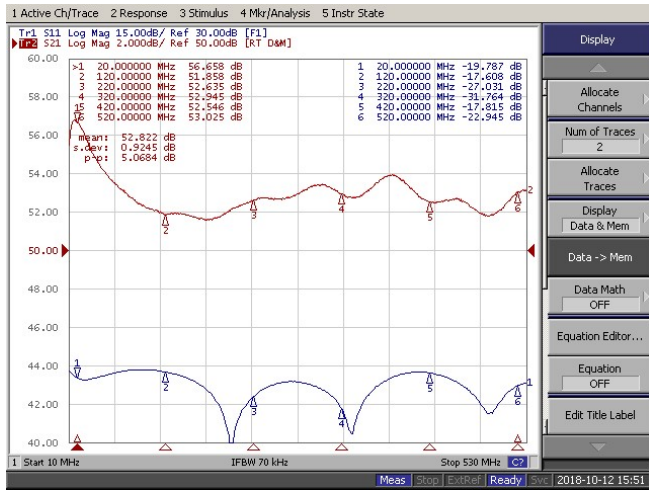
### Interface Connector (Feed Thru)

Pin No	Pin Description	Specifications
FT1	+VDD	+28 VDC
FT2	Shutdown	Amplifier Enable: TTL "Low" (Logic ) or Open Amplifier Disable: TTL "High" (Logic 1)
GT1	GND	Ground Turret
GT2	GND	Ground Turret

### Typical Characteristics

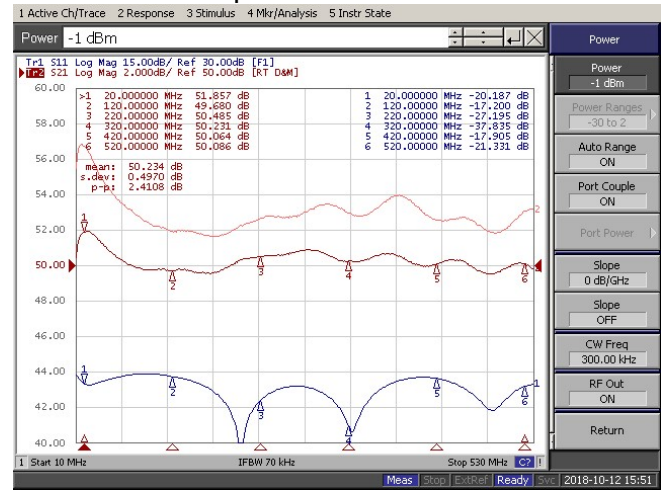
**Plot 1**

Top Curve: Small Signal Gain @ Pin=-20dBm  
Bottom Curve: Input Return Loss



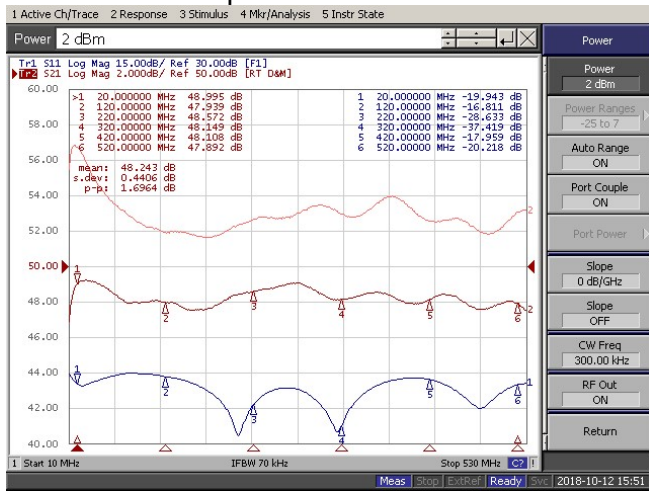
**Plot 2**

Top Curve: Small Signal Gain @ Pin=-20dBm  
Middle Curve: Power Gain @ P1dB, Pin=-1dBm  
Bottom Curve: Input Return Loss



**Plot 3**

Top Curve: Small Signal Gain @ Pin=-20dBm  
Middle Curve: Power Gain @ P<sub>SAT</sub>, Pin=2dBm  
Bottom Curve: Input Return Loss



**Plot 4**

Top Curve: Small Signal Gain @ Pin=-20dBm  
Middle Curve: Power Gain @ P<sub>SAT</sub>, Pin=4dBm  
Bottom Curve: Input Return Loss

