INS2058

2400-2500MHz 50W Power Amplifier

Description

The Model INS2058 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 2400 to 2500MHz. Inspower's ISO9001 quality management system assures consistent performance and highest reliability.

Product Features

- 50Ω RF impedance, Fully Integrated Matching
- 40W Output at P1
- Single Supply Operation: Nominally 28V
- Built-in monitoring functions
- High reliability and ruggedness

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

Symbol	Parameter	Unit	Min.	Typ.	Max.
BW	Frequency of Operation	MHz	2400		2500
PSAT	Power Output Saturated	Watt	50	60	
P1	Power Output P1dB	Watt	40		
PG	Power Gain @ Pin=0dBm	dB	47	48	
PIN	Input Power for Rated Psat			0	
ΔGSS	Small Signal Gain Flatness	dB			±1
ΔGP	Power Gain Flatness	dB			±1
S11/S22	Input & output VSWR				1.5:1
ΔGTEMP	Gain variation with temperature	dBc		±1.0	
OIP3	Third Order Intercept Point 2- Tones, Pout = 42dBm/Tone, Δ=100KHz	dBm		55	
H	Harmonics @Pout=50W	dBc			-50
VDC	Operation Voltage	V	26	28	30
IDQ	Quiescent Current	A		0.7	1
IDD	Current Consumption @ Pout=50W	A		5	6
IDSAT	Current Consumption @ Pin=6dBm	A			9

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Mechanical Specifications

Parameters	Value	Unit
Dimensions (W x D x H)	110 x 95 x 22	mm
RF Connector Input/output	SMA Female	
DC & I/O Connector	D-Sub 9Pin Male, 4-40 screw	
Weight	0.5	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	

Survivability

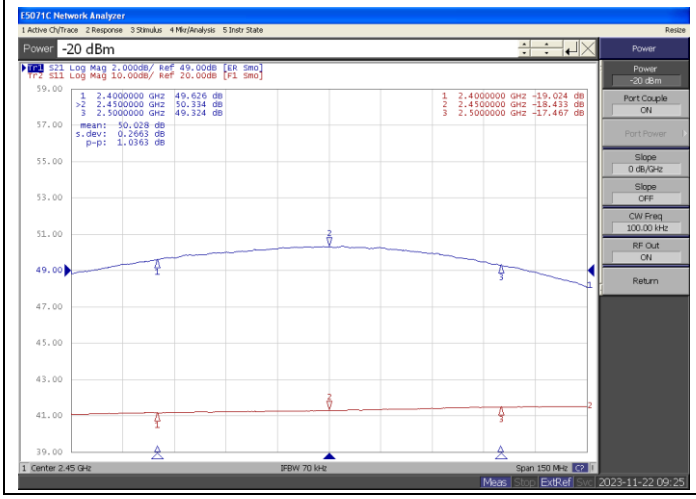
Item	Specifications	Remark
Input Overdrive	+10dBm	Max
Load VSWR	∞: 1	Nom
VSWR Alarm	When VSWR reached 6:1 (Return Loss 3dB)	

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

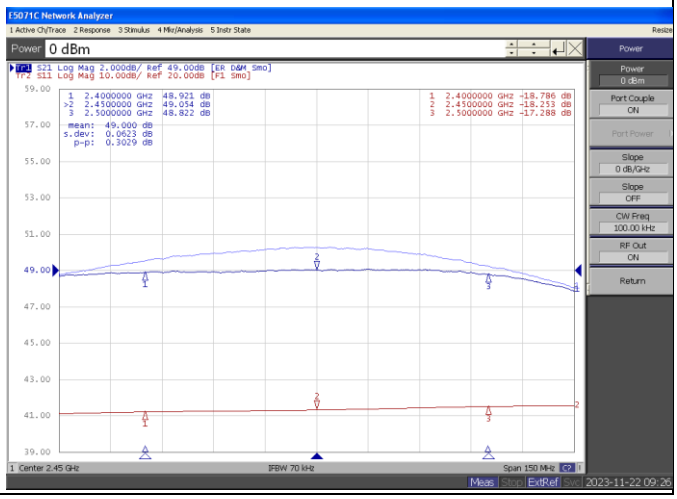
Pin No	Pin Description	Specifications
1	Temperature Monitor	VT= 0.02(V) * T(℃) +1(V), T=Case Temperature ± 5℃
2	Forward Power Monitor	Log Slope detector. Vpin2=4 ±0.1 @ CW 46dBm, slope:0.1V/dB Vpin2= 4 -(46-Pout) *0.1±0.1V
3,8	GND	GND
4	Reflect Reverse Power Monitor	Linear Slope Detector Vpin4=1.4 ± 0.1 V when Reflected Power = 45.0±1.5dBm
5	VSWR Fail alarm	Pin5 Indicates a high 5V TTL while a High VSWR Alarm occurs. Always recover the normal status when the return loss is more than 3dB.
6,7	VDD	+28V
9	Enable/Disable	Enable: Active Low (GND) Disable: High +5V or Open status *Pulled-up @ 5V with 10k ohm

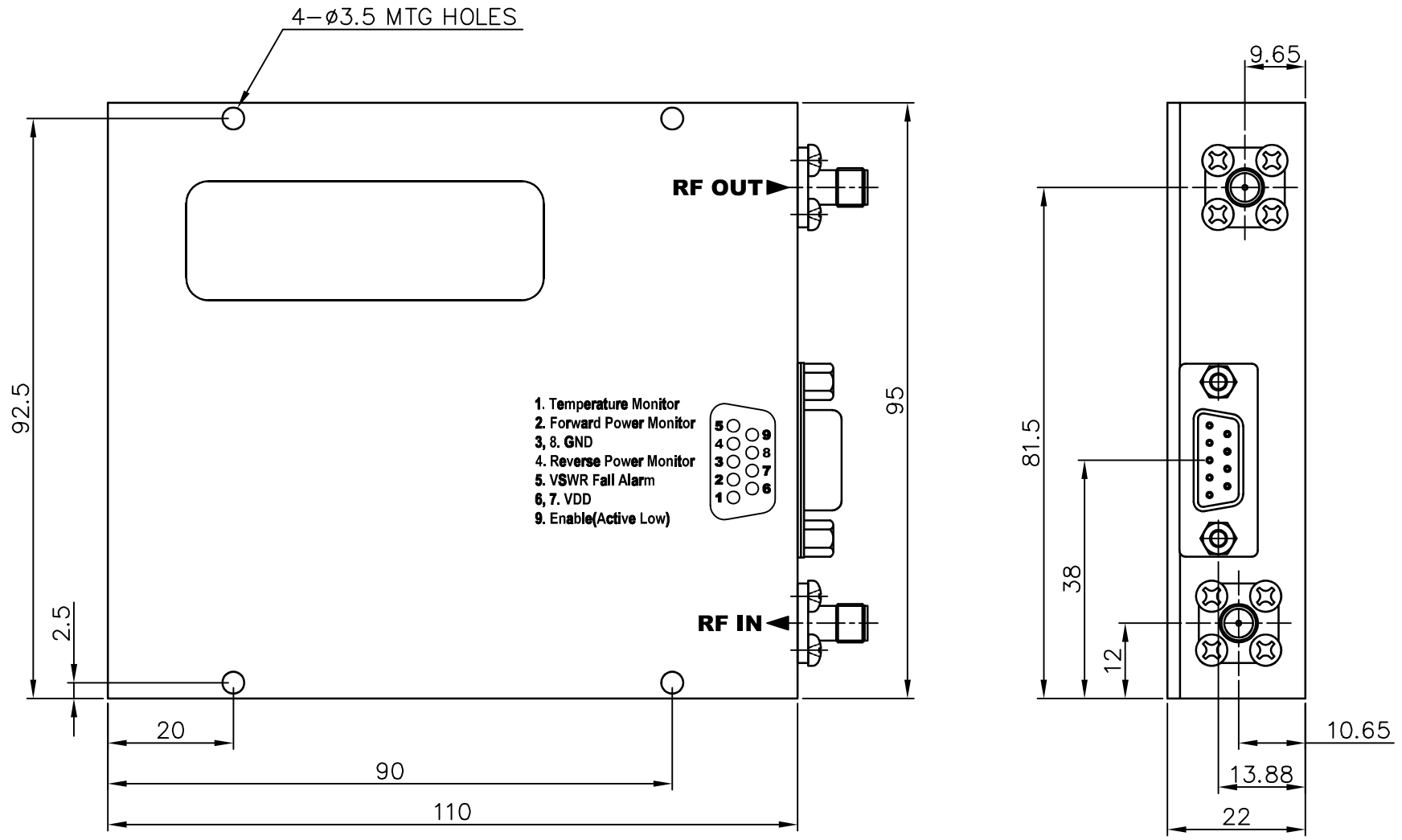
Typical Characteristics

Plot 1
Small Signal Gain @ Pin= -20dBm
Tr1: Small signal Gain, 1dB/div, Ref 49dB
Tr2: Input Return Loss, 10dB/div, Ref 20dB



Plot 2
Power Gain @ Pin= 0dBm
Top Curve: Small Signal Gain (Memory)
Tr1: Power Gain, 1dB/div, Ref 49dB
Tr2: Input Return Loss, 10dB/div, Ref 20dB





APPROVED	MATERIAL: A6061	PART NAME: OUTSIDE DRAWING	
	FINISH: ☆White-CHROMATE(Cr^{3+})	DWG NO.	SHEET: 1 OF 1
CHECKED	THIRD ANGLE PROJECTION	SIZE: A4	UNIT: mm / SCALE: CAD=1/1 PLOT=N/S / Q'TY: 1EA/SET
DESIGNED: S.K.KIM 2014.02.29	MODEL/TITLE: INS **INS2058**	INSPOWER RF Amplifiers	

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