

Features

- Gain: 53dB typical
- Output power +55dBm typical
- Supply Voltage: +36V @ 18 A
- 50 Ohm Matched Input / Output
- Size: 410*230*110mm



Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Fiber Optics

RF Microwave & VSAT
Test Instrument

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.7		2.7	GHz
Gain	53	55		dB
Gain Flatness		±2.5		dB
Gain Variation Over Temperature(-45 ~ +85)		±2.5		dB
Input Return Loss		15		dB
Output 1dB Compression Point (P1dB)	50	50.5		dBm
Saturated Output Power (Psat)	51	52		dBm
3rd Order Intermodulation Product(IM3)		-35		dBc
Supply Current (Idd) (Vcc=+36V)		3	18	A
Efficiency at P1dB	20	25		%
Isolation S12		-55		dB
Input Max Power(no damage)			0	dBm

Weight	504.41ounces	Impedance	50 ohms
Input / Output Connectors	Input: SMA-Female, Output: N-Female	Material	Aluminum
Finishing	Standard: Gold 40 micron; Nickel 220 micron thickness	Package Sealing	Epoxy Sealing (Standard)
	Option: Gold 80 micron; Nickel 180 micron thickness		Hermetically Sealed (Option with extra charge)

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Wide Band Power Amplifier 0.7GHz~2.7GHz

Absolute Maximum Ratings

Operating Voltage	+38V Max
RF Input Power (RFIN)	+0dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +36V biasing

Power OFF Procedure

Step 1	Turn off +36V biasing
Step 2	Remove RF connection
Step 3	Remove Ground

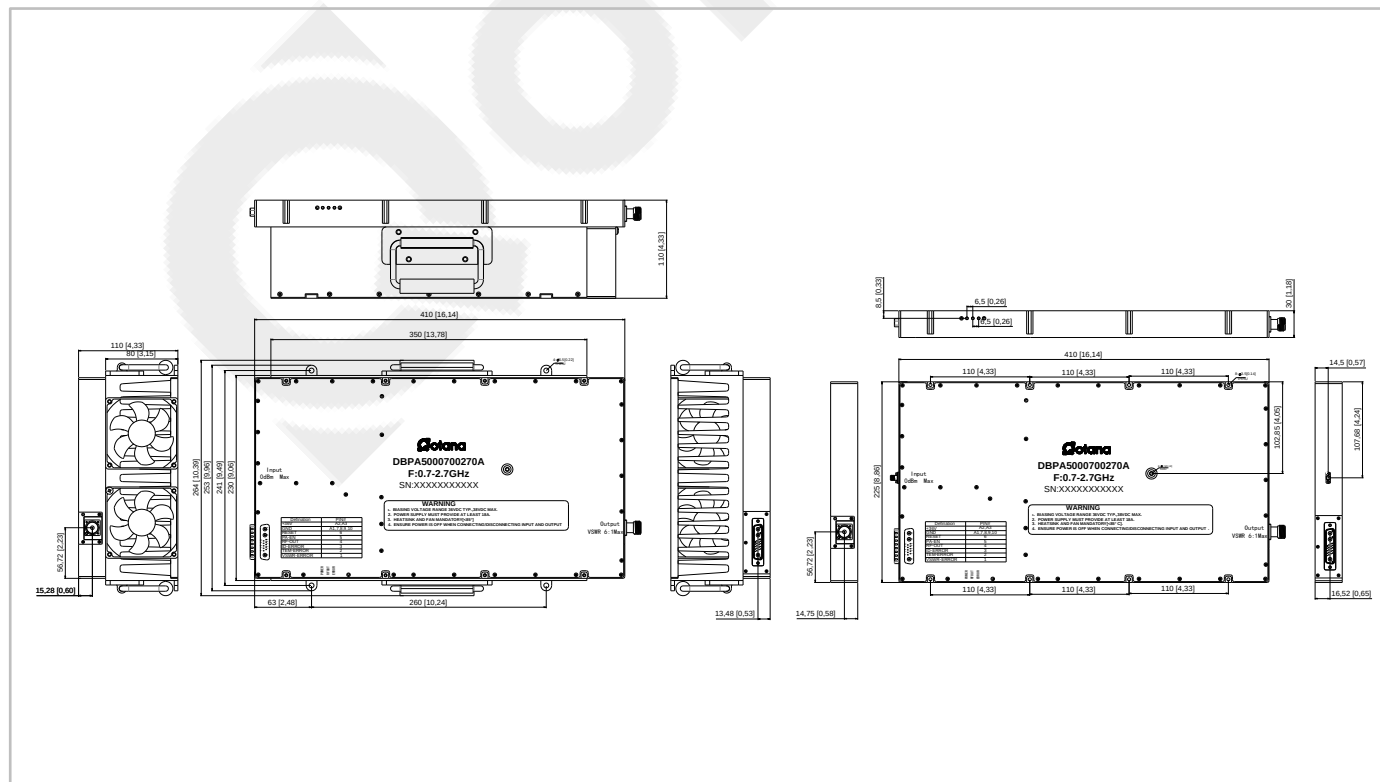
Environmental Specifications

Operational Temperature	-20°C~+40°C
Storage Temperature	-30°C~+70°C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment) 60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

Outline Drawing:

All Dimensions in mm (inches)

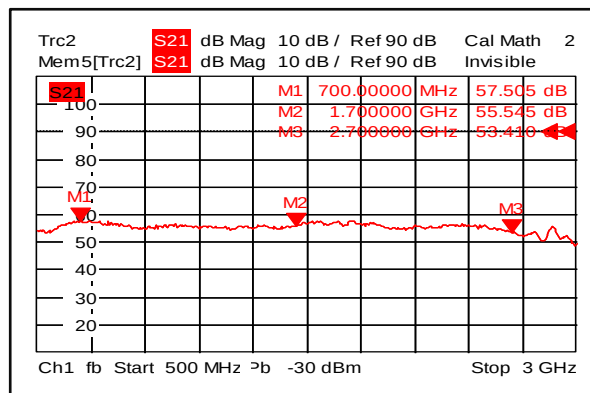
Heat Sink required during operation(Sold Separately)



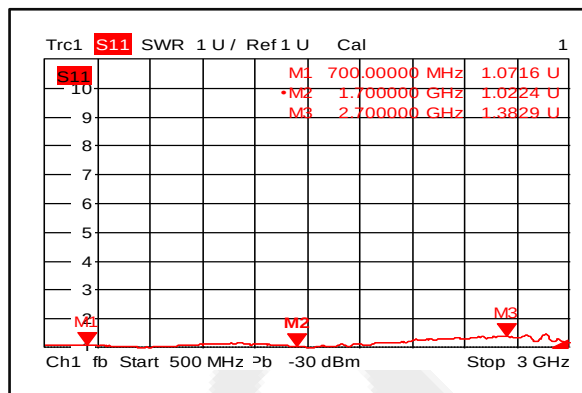
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Wide Band Power Amplifier 0.7GHz~2.7GHz

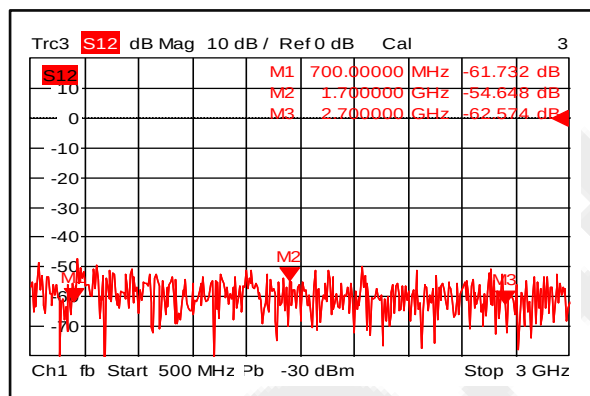
Gain



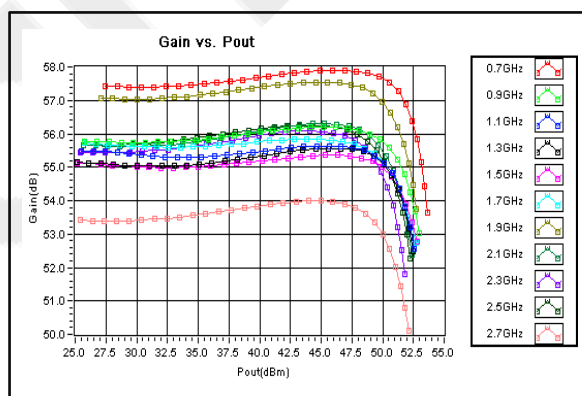
Input VSWR



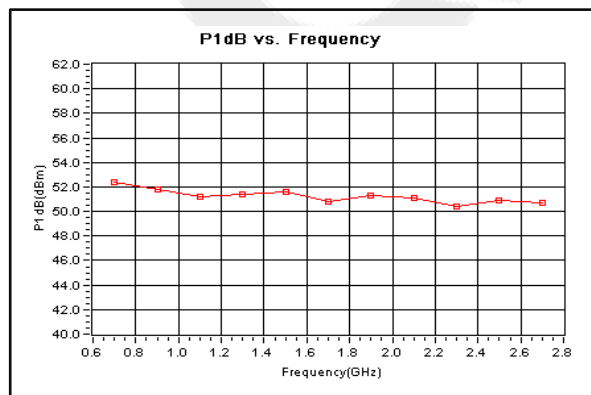
Isolation



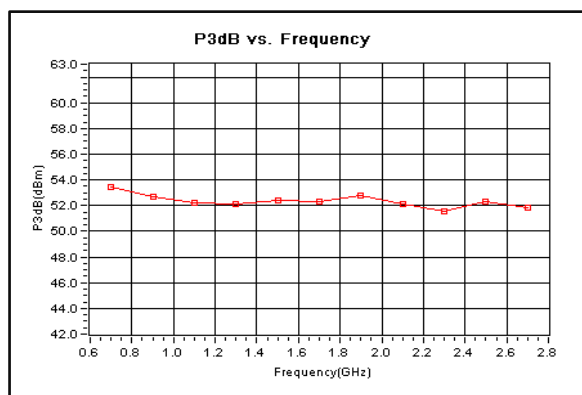
Gain vs. output power



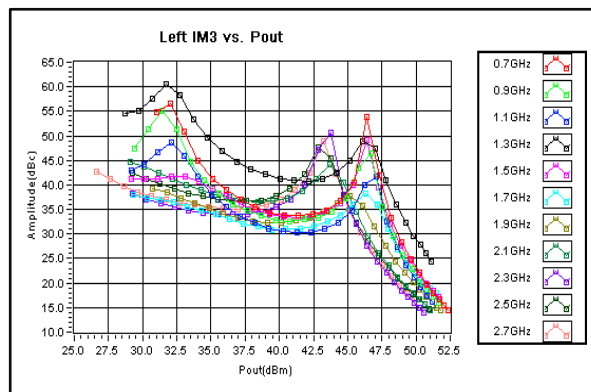
P1dB vs. Frequency



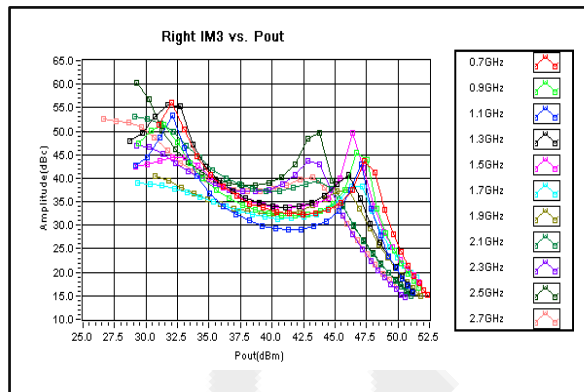
P3dB vs. Frequency



Left IM3 vs. Pout



Right IM3 vs. Pout



LED Indicator Light	
POWER	On: Internal Modules are Powered on; Off: Internal Modules are Powered off
RFOUT	On: RF output Power is higher than 2W; Off: RF output Power is lower than 2W
ERROR	On: Amplifier is in Protection State; Off: Amplifier works normally

Amplifier Ports Definitions

Pin	Parameter	Description	Specification
A2,A3	+36V	Power anode	(+36V) power is supplied through the anode
A1,7,8,9,10	GND	Power cathode	Power is supplied through the cathode
6	RESET	Reset (Input)	When the amplifier is in protection state, pull low this pin 1ms and the amplifier can be reset. If the pin is pulled low constantly, the amplifier will not have protect function until the pin is in high-level voltage(VOH) again. There is a Pull-high resistance inside the amplifier, pulling the power of this pin up to 3.3V.
5	PA-EN	Amplifier Enable (Input)	VOH(3.3V)powers the amplifier on, and Low-level voltage(VOL) shuts down the internal power of the amplifier. There is a Pull-high resistance inside the amplifier, pulling the power of this pin up to 3.3V.
4	RF-OUT	RF Signal Output Indication (Output)	If the output RF power is higher than 2W, this pin outputs VOH(3.3V); if not, outputs VOL
3	ID-ERROR	Over-Current Alarm (Output)	If the current is higher than 20A, the amplifier is in protect state, this pin outputs VOH(3.3V); if not, outputs VOL
2	TEM-ERROR	Over-temperature Alarm (Output)	If the temperature is higher than 80℃, the amplifier is in protect state, this pin outputs VOH(3.3V); if not, outputs VOL. When temperature decrease to 60℃, the amplifier is powered on automatically
1	VSWR-ERROR	Over-VSWR Alarm (Output)	If the output VSWR is bigger than 6, the amplifier is in protect state, this pin outputs VOH(3.3V); if not, outputs VOL.

Note: The Protec State means the internal power is turned off, and the current of 36V is only dozens of milliampere.

If the amplifier is in protect state because of over-current or over-VSWR, the amplifier can only work normally again by pulling low the Reset pin, or to turn off the +36V power to reset the amplifier.

If the amplifier is in protect state because of over-temperature, the amplifier will automatically work normally again when the temperature decreased to 60℃.

Fan (Model: 109P0824A201) Ports Definitions

Red wire	+24V
Black wire	GND
Yellow wire	The detection port of the fan speed, please refer to the handbook of the fan to see the using method. If the fan speed does not need to be detected, this wire can be floated. https://www.sanyodenki.com/archive/document/product/cooling/technical_material_en.pdf

Power-on sequence:

- 1, Connect the input and output connectors, ensure there's no RF signal in the input connector.
- 2, Set a DC power to +36V, connect the anode to A2,A3 pin, and the cathode to A1 pin, turn on the power supply.
- 3, Set another DC power to +24V, connect the anode to the red wire of the fan, and the cathode to the black wire, turn on the power supply.

Power-off sequence :

- 1, Turn off the RF signal supplied to the connectors.
- 2, Turn off the +36V power.
- 3, Turn off the +24V power.
- 4, Only after the 3 steps above, the input & output connectors can be removed.

Note : If the customer need not monitor the status of the amplifier, the 1,2,3,4,5,6 pin can be floated.

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