SALUKI TECHNOLOGY

P/N:SPA0P50350Z

SALUKI TECHNOLOGY INC

100W Wide Band Power Amplifier 0.5GHz~3GHz

Features

- Wide Band Power Amplifier
- Gain: 52dB Typical
- Saturated Output Power:+50dBm
- Supply Voltage: +36V
- 50 Ohm Matched

RoHS COMPLIANT

ESD

Typical Applications

- Wireless Infrastructure
- 5G communication
- Test and measurement Instrument

RF Microwave & VSAT
Fiber Optics

Parameter		Min	Typ	Max	Units
Frequency Range		0.5		3	GHz
Gain		47	52		dB
Gain Flatness			±3.0		dB
Gain Variation Over Temperature (-40℃~+60℃)			±2.0		dB
Input VSWR			1.5		: 1
Output Power for 1 dB Compression (P1dB)			47		dBm
Saturated Output Power (Psat)		47.5	50		dBm
Supply Current (Vcc=+36V)			2.3	13.5	A
Efficiency at Psat (RF Output Power / DC Power Consumption)			25		%
Ruggedness: Output Mismatch, all phase angles		VSWR = 3:1, No Device Damage			
Turn On/Off Speed (Switch Disable)	ON		100		ns
	OFF		100		ns
Turn On/Off Speed (Drain Disable)	ON		10		ms
	OFF		2.5		ms
Turn On/Off Speed (Gate Disable)	ON		25		us
	OFF		2.5		us

Weight	Net	62.4 Max. ounces	Impedance	50ohms
	Including Heat sink	171.2 Max. ounces		
Input / Output Connectors		SMA-Female / N-Female	Material	Aluminum
Finish		Nickel Plated	Package Sealing	Epoxy Sealed (Standard)
				Hermetically Sealed (Optional)

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Absolute Maximum Ratings

Operating Voltage	+40V
RF Input Power	+5dBm

Note: Maximum RF input power is set to assure safety of amplifier. Input power may be increased at own risk to achieve full power of amplifier. Please reference gain and power curves.

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

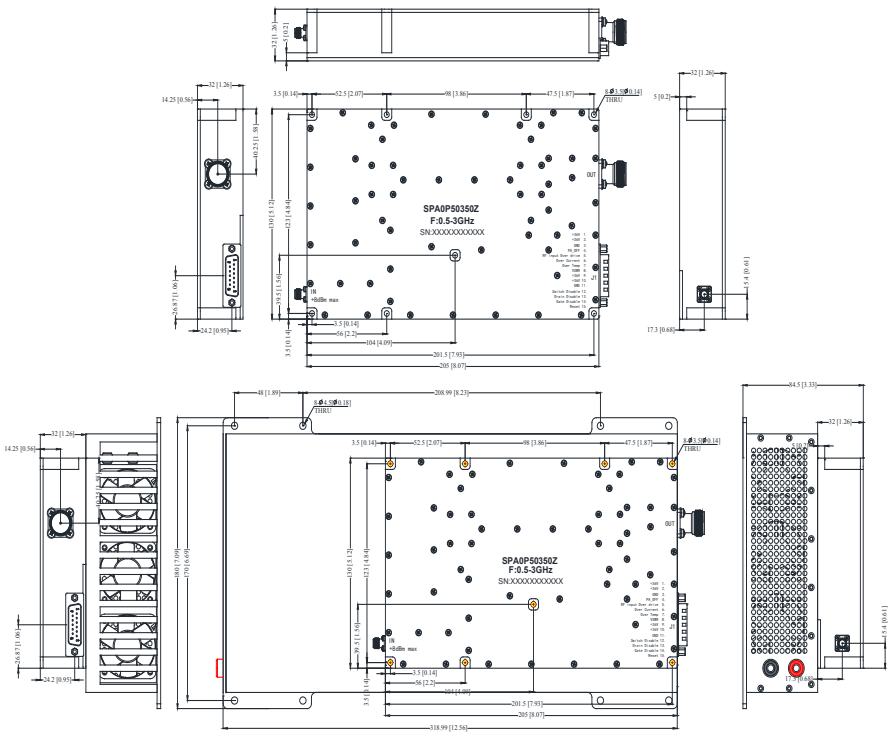
Environmental Specifications

Operational Temperature	-40℃~+60℃ (Case Temperature)
Storage Temperature	-50℃~+105℃
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 35°c, 95%RH at 40°c
Shock	20G for 11msec half sine wave,3 axis both directions

Outline Drawing:

All Dimensions in mm (inches)
Housing Tolerances ±0.5 (0.02)

DB15 cable is configured for power connection port Cable.
Heat Sink required during operation (Sold Separately)



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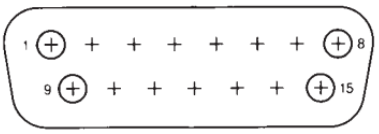
User Control Connector (Rear Panel)

Male D-Sub is on the housing
The mating Female part number: 172-E15-203R001



Pin #	Name	Function	Initial State	Description	Applied
1,2, 9,10	VDD	Power Supply	+36V	+36V DC Supply Voltage	Yes
3,11	GND	Ground	GND	Ground	Yes
4	PA_OFF	Indicator	LOW	Amplifier working state, high level is off	Yes
5	RF Input Over Drive	Indicator	LOW	Pin will be latched to logic HIGH when input signal is over limit	Yes
6	Over Current	Indicator	LOW	Pin will be latched to logic HIGH when drain current limit is reached or current imbalance	Yes
7	Over Temp	Indicator	LOW	Pin will be latched to logic HIGH when amplifier is driven over temperature	Yes
8	VSWR	Indicator	LOW	Pin will be latched to logic HIGH when output reflection is over limit	Yes
12	Switch Disable	Control	LOW	Applying logic HIGH disconnect RF signal of amplifiers	Yes
13	Drain Disable	Control	LOW	Applying logic HIGH disable drains of amplifiers	Yes
14	Gate Disable	Control	LOW	Applying logic HIGH disable gates of amplifiers	Yes
15	Reset	Control	HIGH	Resets PA when logic LOW is applied and released	Yes

Notes:
- HIGH/LOW voltages are standard TTL signals 0.0V-0.8V = LOW. 2.8V-5V = HIGH. Input current is 10uA.
- Matching connector and cable will be shipped with the product.
- Applied=Yes means the feature is included. Applied=No means the feature is not included with this model.
- Indicator output signals can source 24mA.

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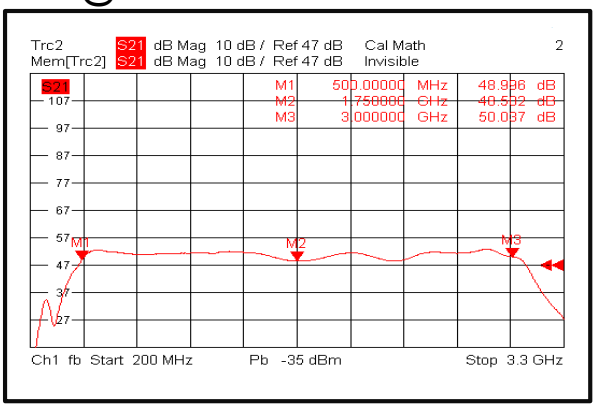
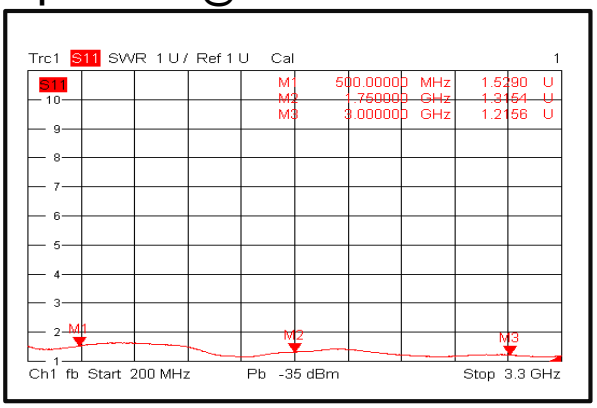
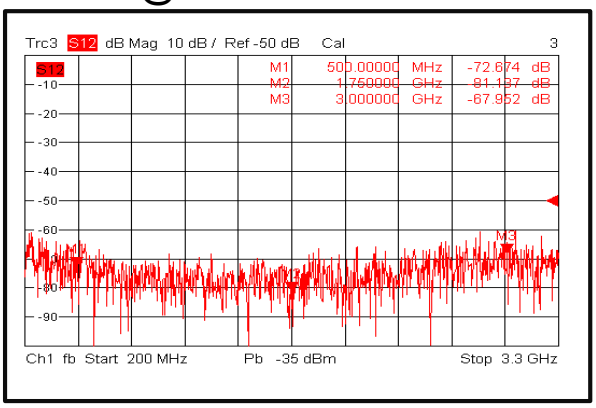
Gain@+25℃



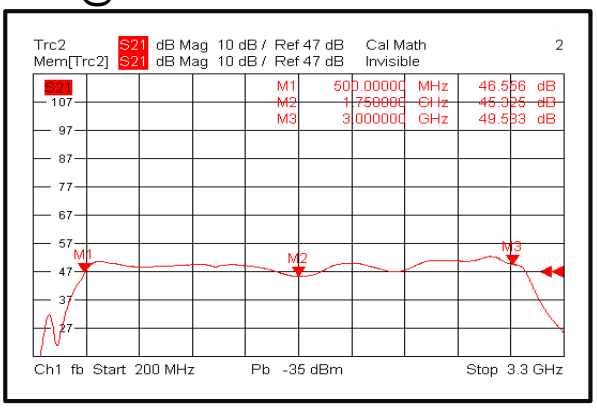
Input VSWR @+25℃



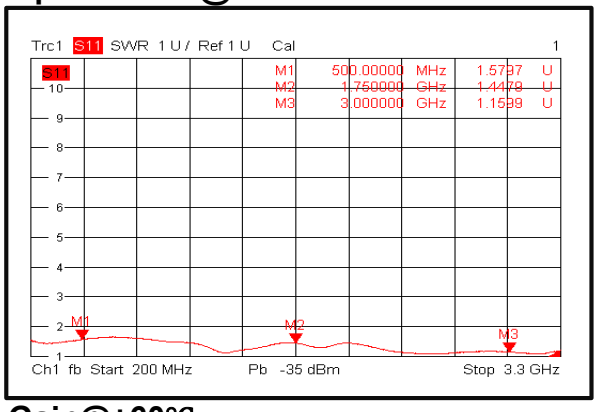
Isolation@+25℃



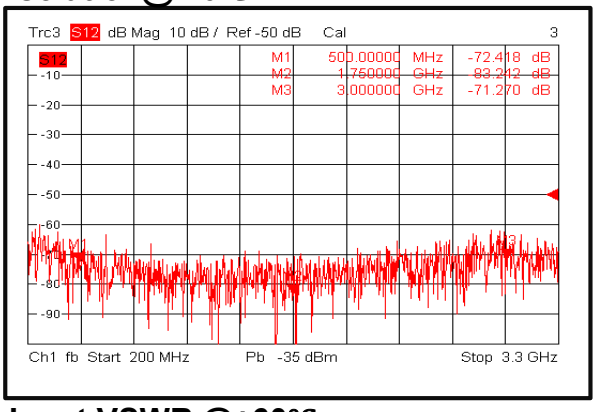
Gain@-40℃



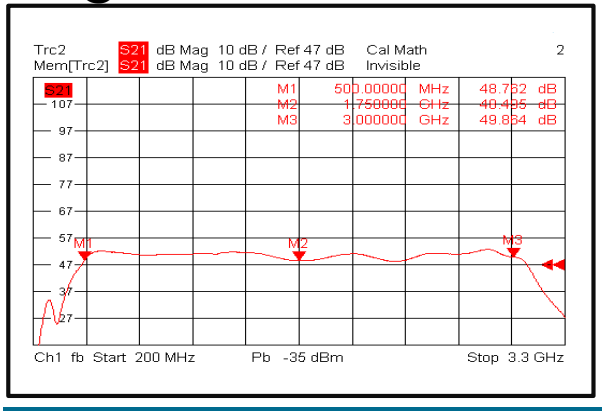
Input VSWR @-40℃



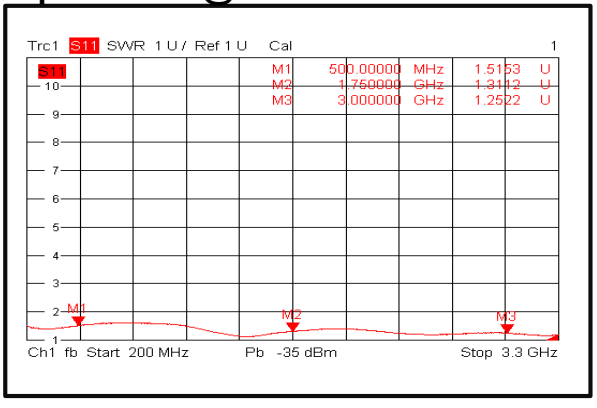
Isolation@-40℃



Gain@+60℃



Input VSWR @+60℃



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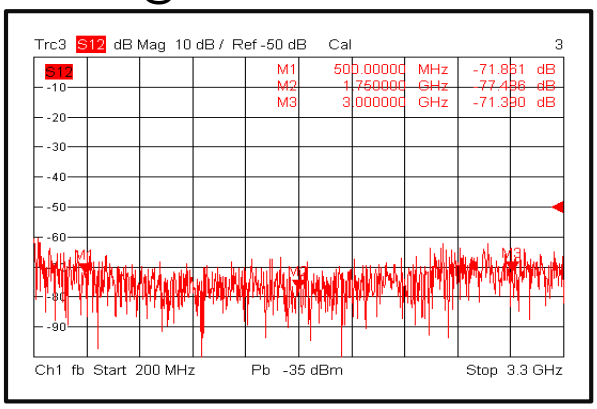
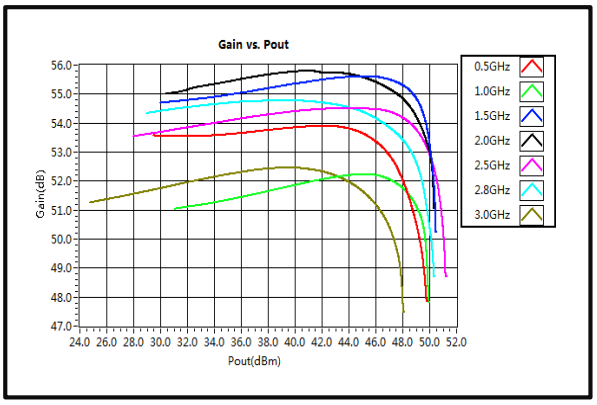
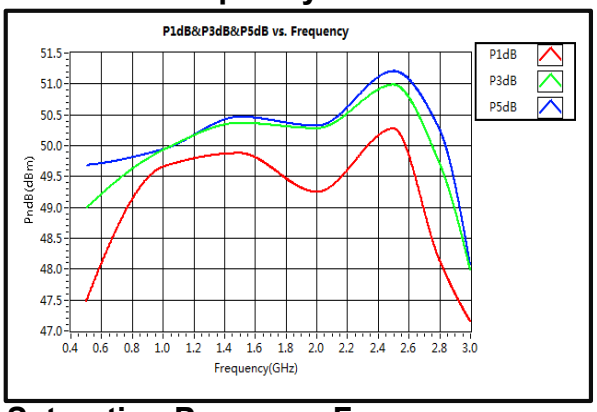
Isolation@+60℃



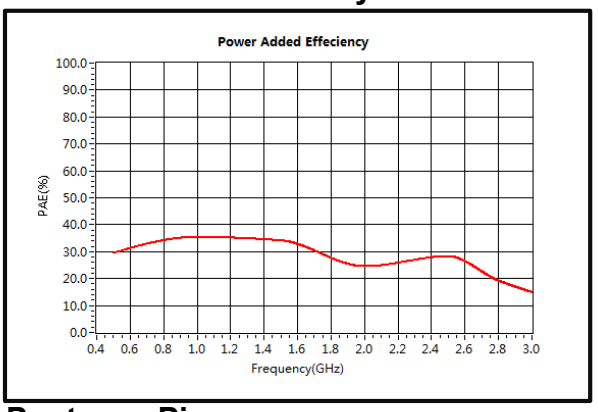
Gain vs. Output Power



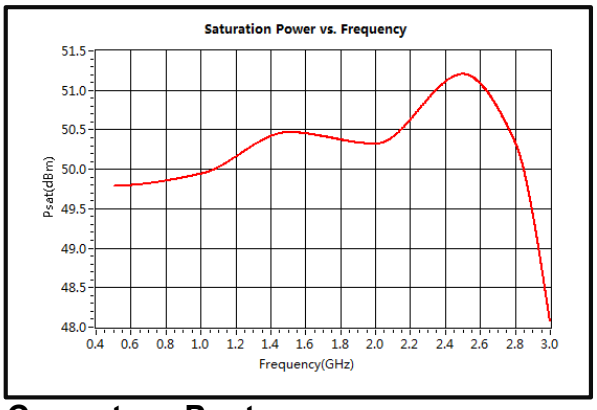
PndB vs. Frequency



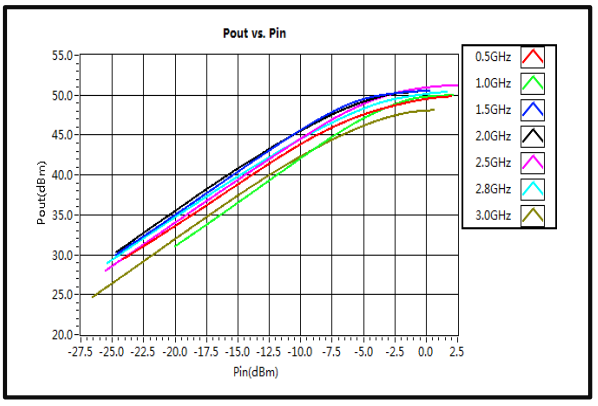
Power Added Efficiency



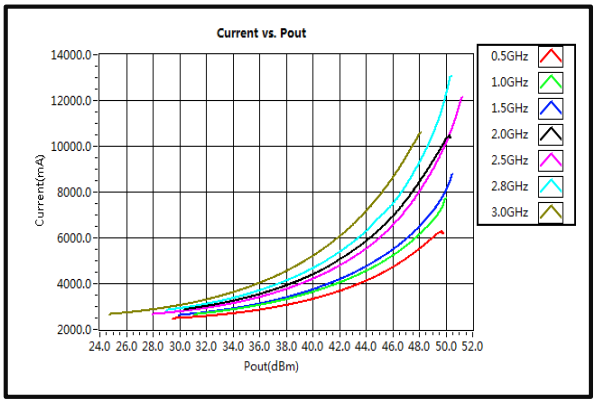
Saturation Power vs. Frequency



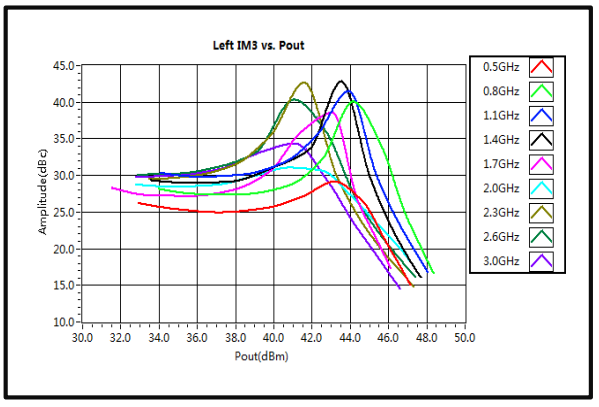
Pout vs. Pin



Current vs. Pout



Left IM3 vs. Pout



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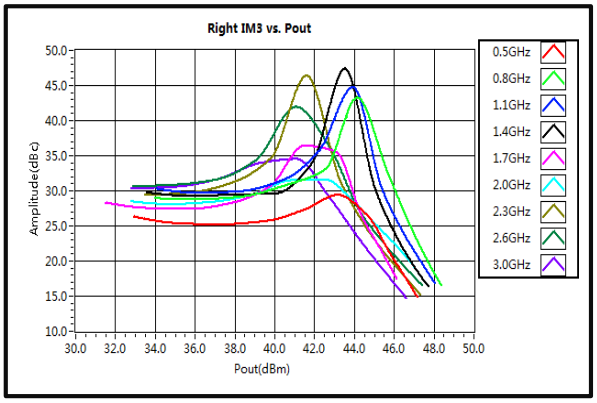
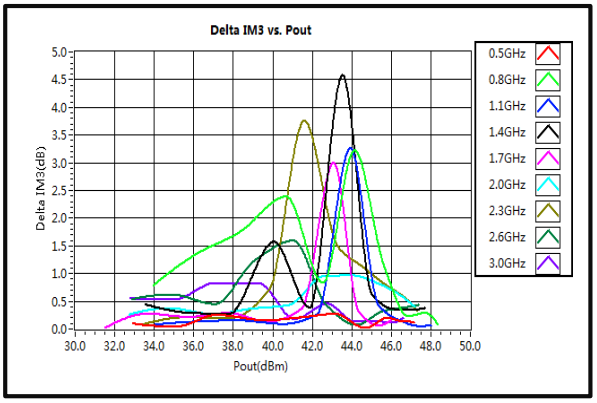
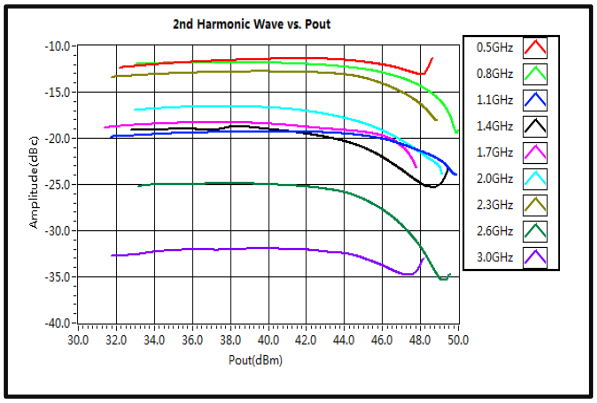
Right IM3 vs. Pout



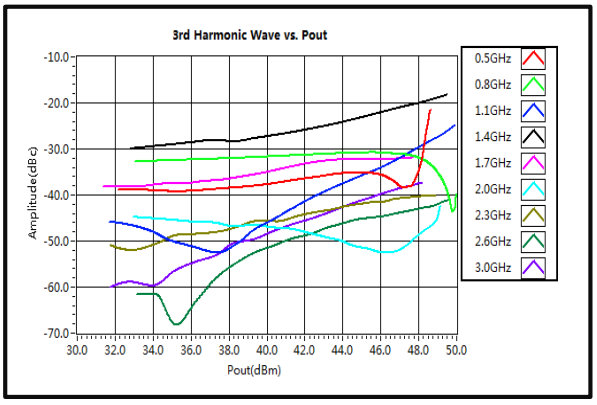
Delta IM3 vs. Pout



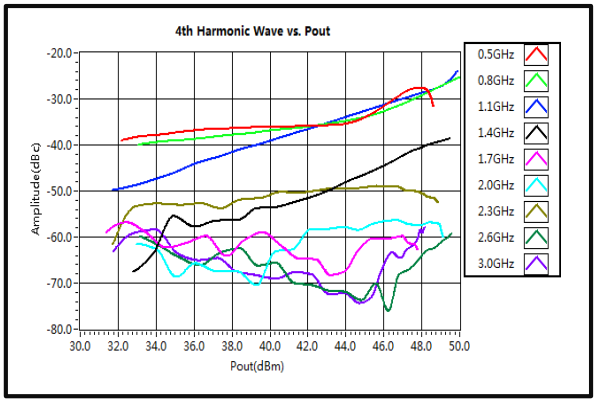
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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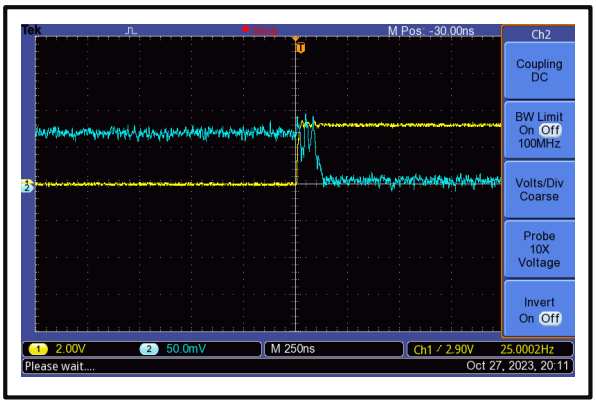
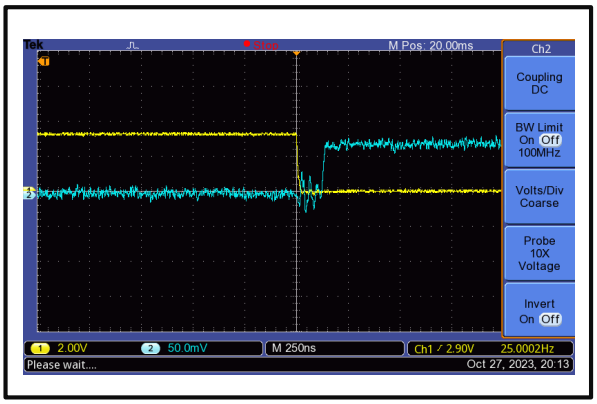
The Switching Rise Time is 100 ns @+25℃

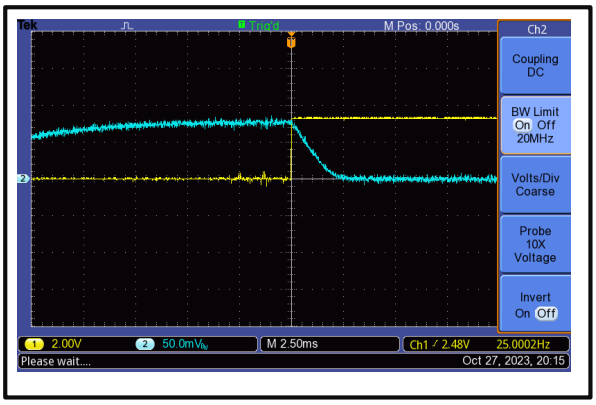


The Switching Fall Time is 100 ns @+25℃

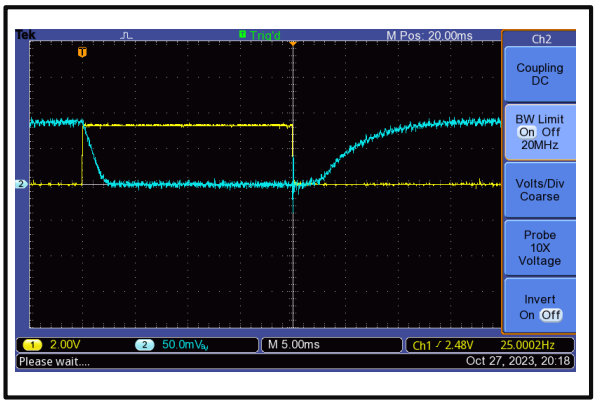


Switch control port: D-sub 15 PIN #12(RF_Switch_Off) .
The yellow curve is the switch control signal, the blue curve is RF output envelope.

The Drain-Enable Rise Time is 2.5 ms @+25℃

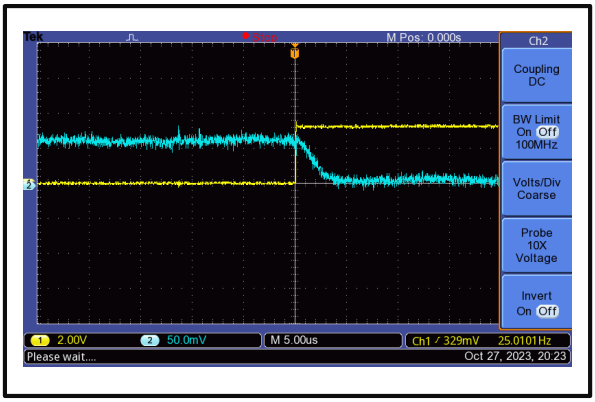


The Drain-Disable Fall Time is 10 ms @+25℃

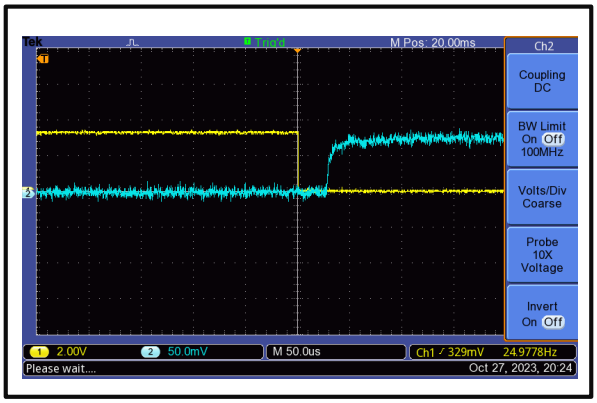


The drain control port：D-sub 15 PIN #13 (Drain _OFF).
The yellow curve is the drain control signal, the blue curve is RF output envelope.

The Gate-Enable Rise Time is 2.5 us @+25℃



The Gate-Enable Fall Time is 25 us @+25℃



The gate control port：D-sub 15 PIN #14 (GATE_OFF).
The yellow curve is the gate control signal, the blue curve is RF output envelope.