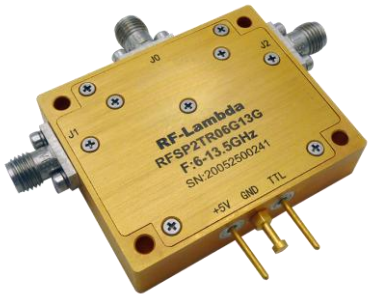
Reflective Coaxial SP2T Switch
6GHz-13.5GHz



Product Description

RFSP2TR06G13G is a reflective coaxial single pole double throw switch with a frequency range of 6 to 13.5GHz.

The maximum power input of this switch is 20W. The insertion loss is 1.2dB with a typical isolation of 55dB.

The product features fast switching speed, low insertion loss and high isolation.

The working temperature of this product is between - 40℃ and + 85℃

Features

- TTL compatible driver included
- Fast Switching Speed
- High Power Cold Switching
- Insertion Loss 1.2dB Typical
- Isolation 55dB Typical
- 50 Ohm Matched

Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Electrical Specifications(TA = +25°C), Vdd = +5V, TTL = 0 / +5V

Parameter		Min	Typ	Max	Units
Frequency Range			6-13.5		GHz
Insertion Loss (Small Signal)			1.2	1.8	dB
Insertion Loss Temperature Coefficient			0.003		dB/ °C
Isolation		50	55		dB
Input VSWR			1.5	2.0	: 1
Output VSWR			1.5	2.0	: 1
RF Input Power (CW)				20	W
Maximum RF Input Power (Pulsed, 10% Duty Cycle, 10us pulse width)				250	W
DC Power Dissipation			1		W
IIP3			43		dbm
Switching Speed			350	500	ns
Bias Current (+5V)			200 Max.		mA
Weight	Net		0.25 Max.		lbs
	Including Heat Sink		0.44 Max.		
Impedance			50		Ω
Input / Output Connectors			SMA-Female(Input) – SMA-Female(Output)		
Package			Epoxy Sealed (Standard)		
			Hermetically Sealed (Optional)		

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Absolute Maximum Ratings

Parameter	Rating
Biasing	+5V±10%

Notes:
1. TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.
2. Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could be damaged.

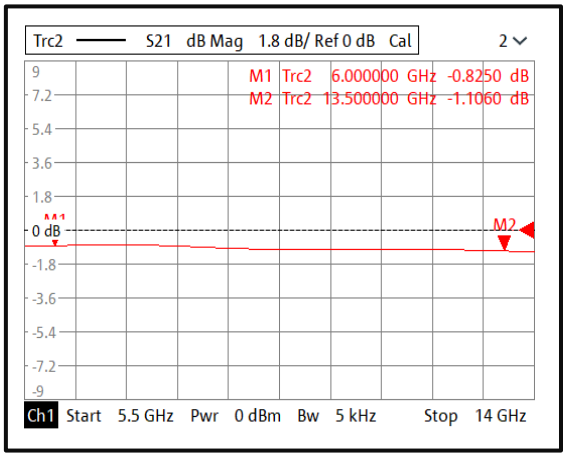
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC → +85ºC (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85ºC for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

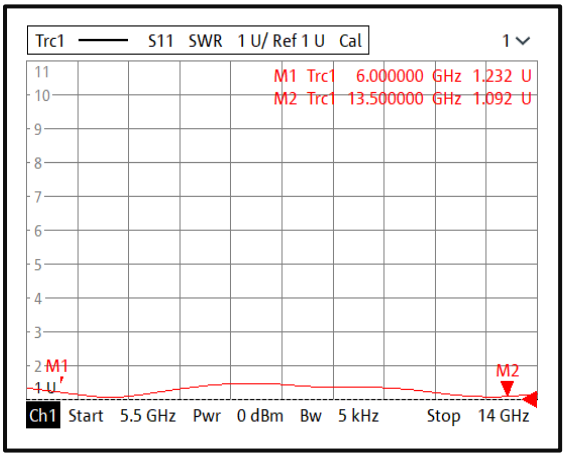
** For vibration testing details please see additional information section.

Typical Performance Plots

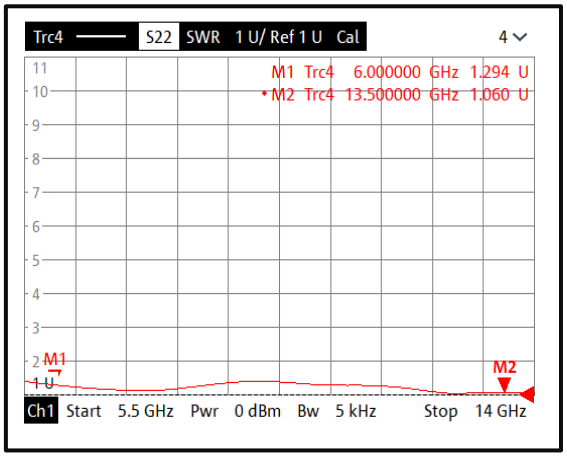
Insertion Loss @+25℃



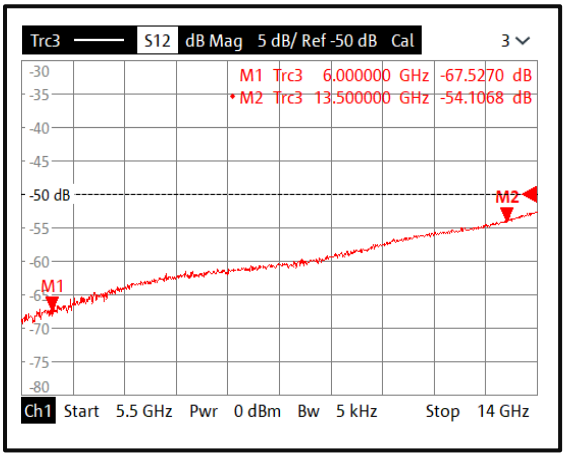
Input VSWR @+25℃



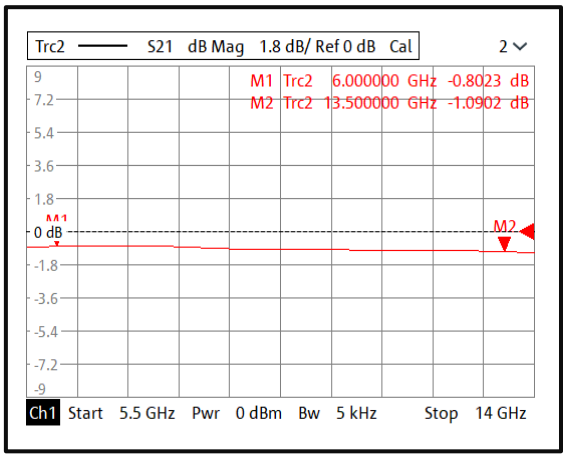
Output VSWR @+25℃



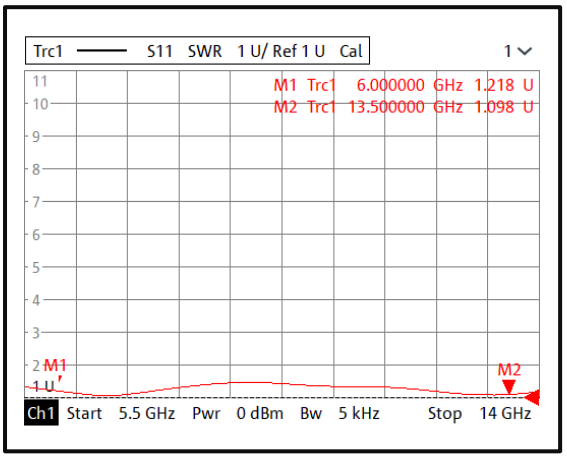
Isolation @+25℃



Insertion Loss @-40℃

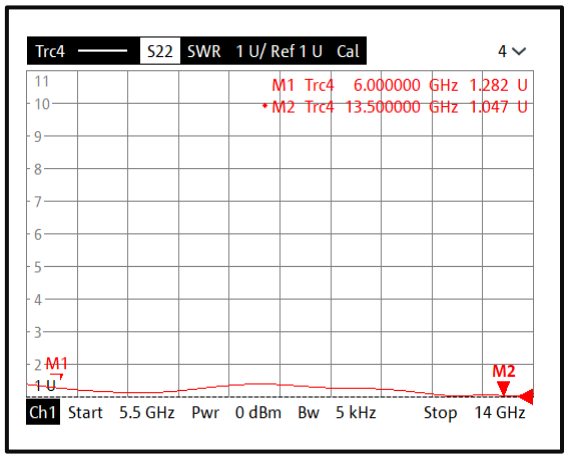


Input VSWR @-40℃

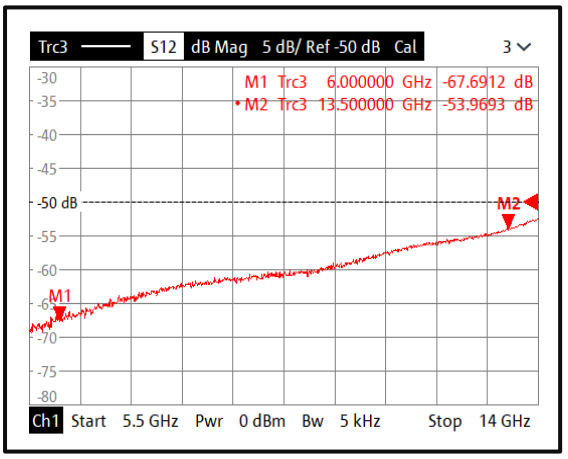


Typical Performance Plots

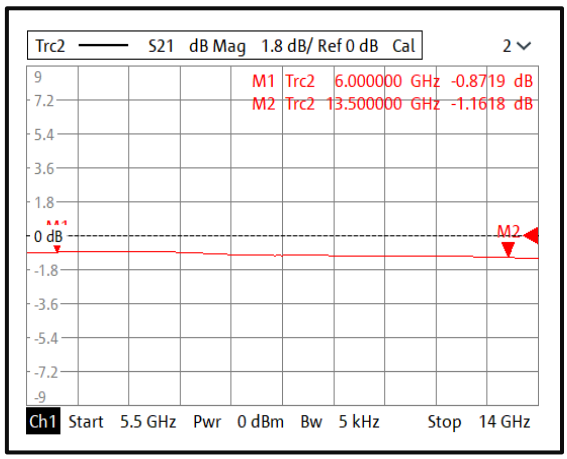
Output VSWR @-40℃



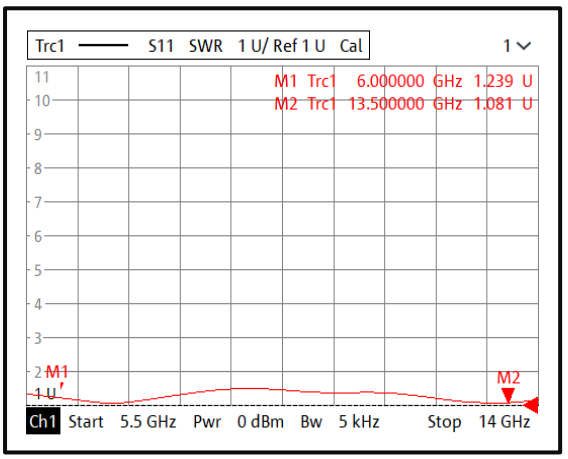
Isolation @-40℃



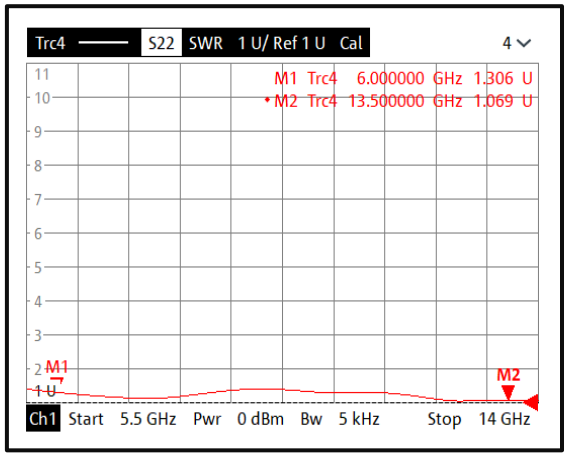
Insertion Loss @+85℃



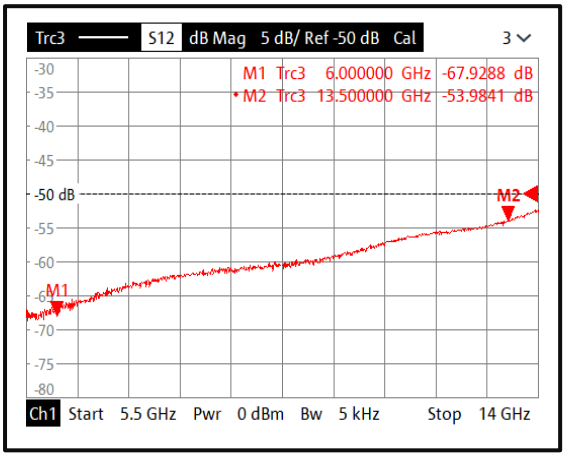
Input VSWR @+85℃



Output VSWR @+85℃

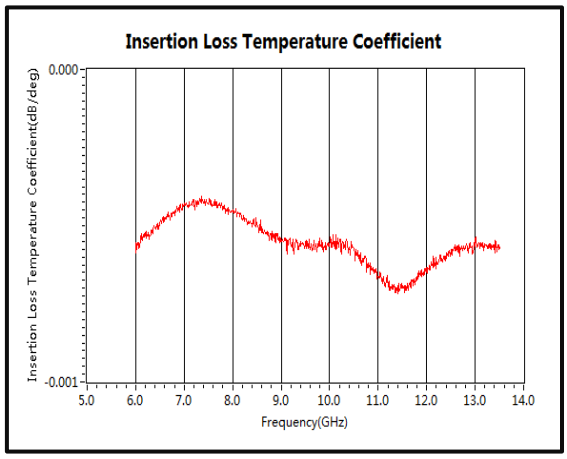


Isolation @+85℃

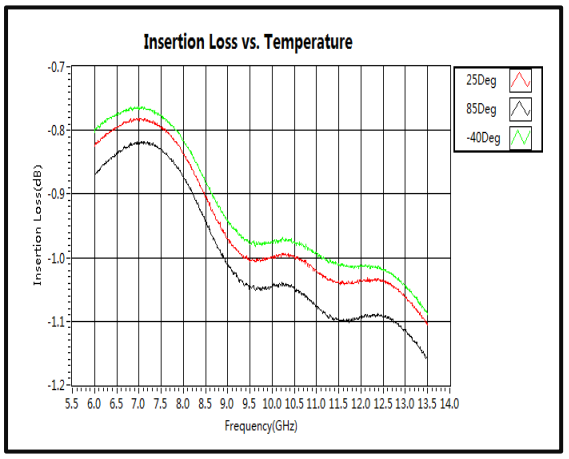


Typical Performance Plots

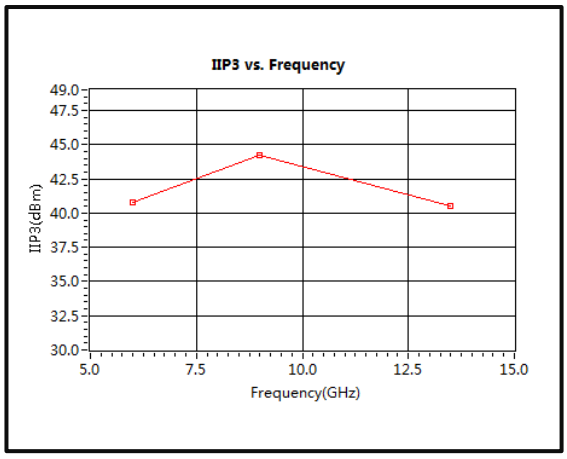
Insertion Loss Temperature Coefficient



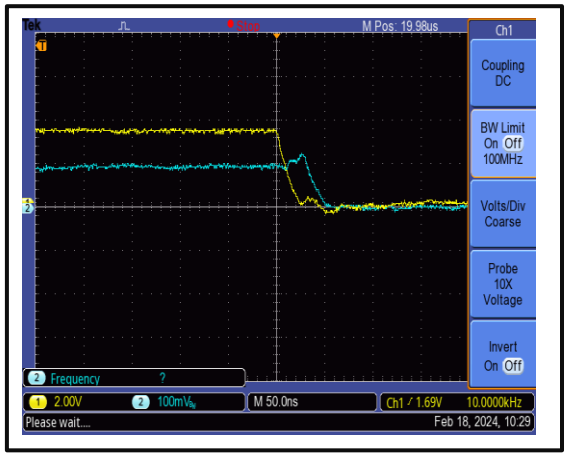
Insertion Loss vs. Temperature



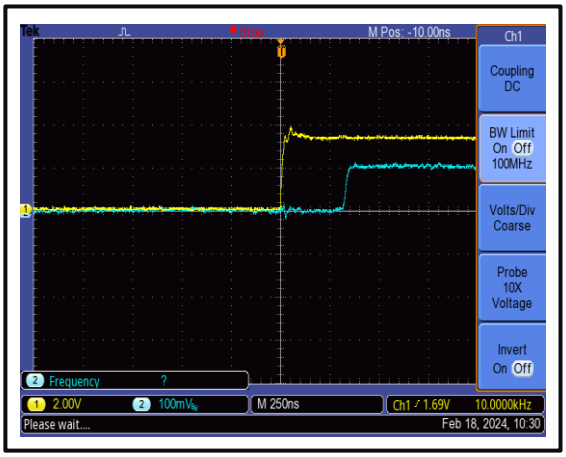
IIP3



Switching Speed

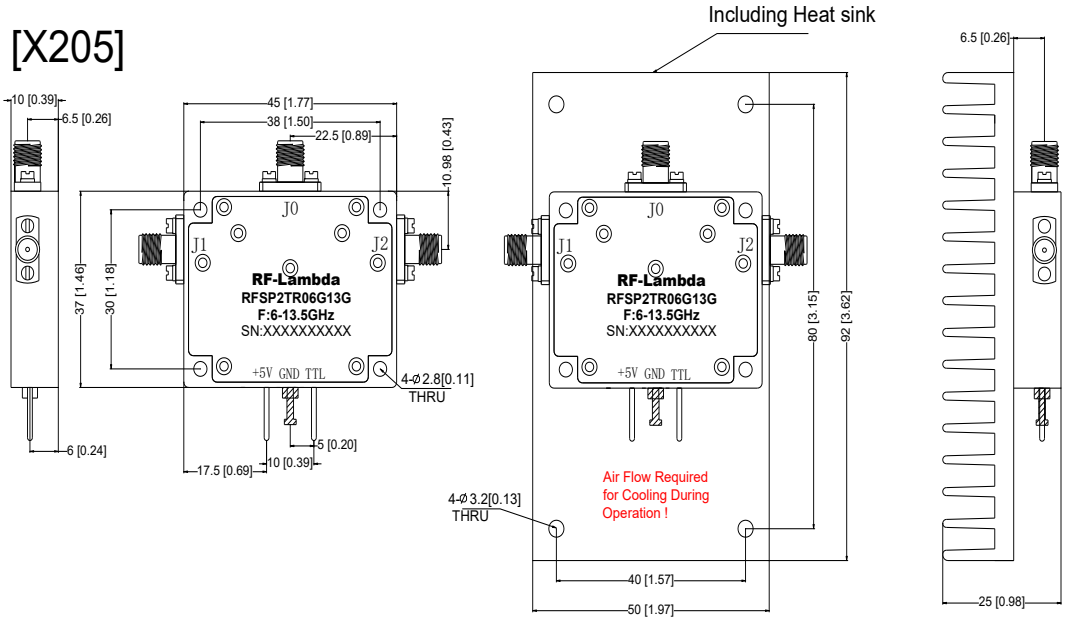


Switching Speed



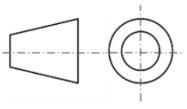
Outline Drawing

[X205]



Truth Table	
TTL Control Voltage THRESHOLD	Low(0)=0~0.8V
	High(1)=2.8~5V
Control Input TTL	Signal Path State
0	J0-J1
1	J0-J2
Control Pin	Customization available upon request

Notes:
1. Package Material: Copper
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances ±0.1 [0.004] unless otherwise specified(Excl Heat Sink).
5. Heatsink Required - Mandatory for High Power Operation .Matching heatsink is listed on our website. If customer would like to use their own cooling method, please make sure the amplifier will operate under the specs that listed in page 2 of this datasheet.
6. Standard torque wrench must be used to secure RF connectors.



Additional Information

Documentation	Webpage
ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
Heatsink Lookup Specifications	https://rflambda.com/search_heatsink.jsp
Connector Torque Specifications	https://www.rflambda.com/pdf/Torque_Specifications.pdf
Random Vibration Test Standard	https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RFSP2TR06G13G	Standard	6GHz-13.5GHz SP2T PIN Diode Switch

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