

Reflective Coaxial SPST Switch 0.5GHz-4GHz



Product Description

RFSPSTR0004G is a reflective coaxial single pole single throw switch with a frequency range of 0.5 to 4GHz.

The maximum power input of this switch is 30dBm. The insertion loss is 0.7dB with a typical isolation of 85dB.

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

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

Features

- TTL compatible driver included
- Fast Switching Speed
- Low Power Cold Switching
- Insertion Loss 0.7dB
- Isolation 85dB 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/-5V, TTL = 0 / +5V

Parameter	Min	Typ	Max	Units
Frequency Range		0.5 - 4		GHz
Insertion Loss		1.0	1.5	dB
Insertion Loss Temperature Coefficient		0.003		dB/ °C
Isolation (J0→J1)	80	85		dB
Input VSWR		1.2	1.5	: 1
Output VSWR		1.2	1.5	: 1
RF Input Power (CW)			30	dBm
DC Power Dissipation		0.3		W
IIP3		45		dBm
Switching Speed			100	ns
Bias Current (+5V/-5V)		80/50 Max.		mA
Weight		0.03 Max.		lbs
Impedance		50		Ω
Input / Output Connectors	SMA-Female(Input) – SMA-Female(Output)			
Package	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

* J0: Absorptive Port J1: Reflective port

Absolute Maximum Ratings

Parameter	Rating
Biasing	+5V±10%/-5V±10%

* TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

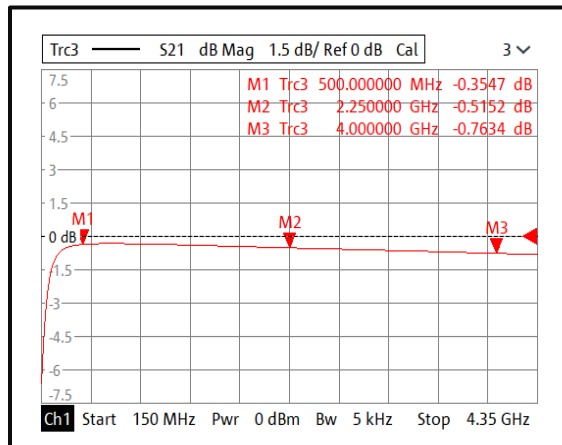
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (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 +85°C 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)

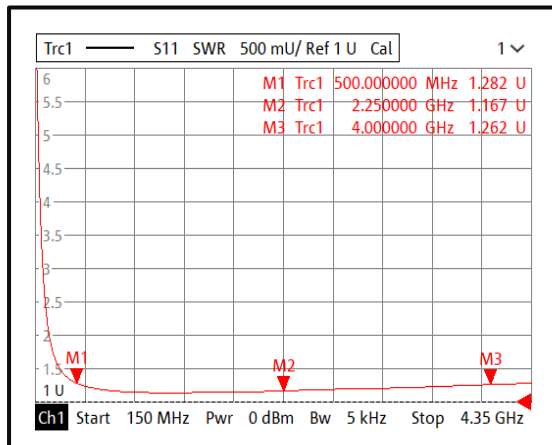
** For vibration testing details please see additional information section.

Typical Performance Plots

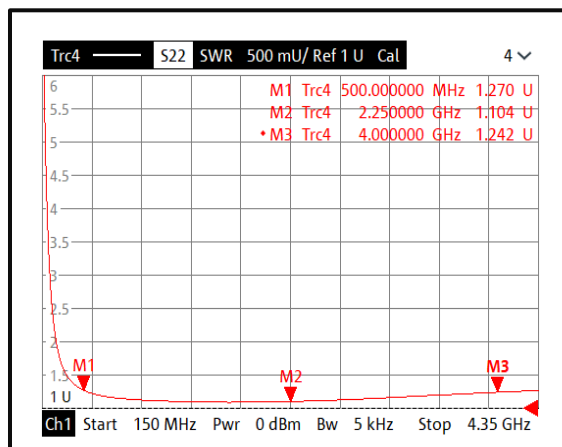
Insertion Loss @+25°C



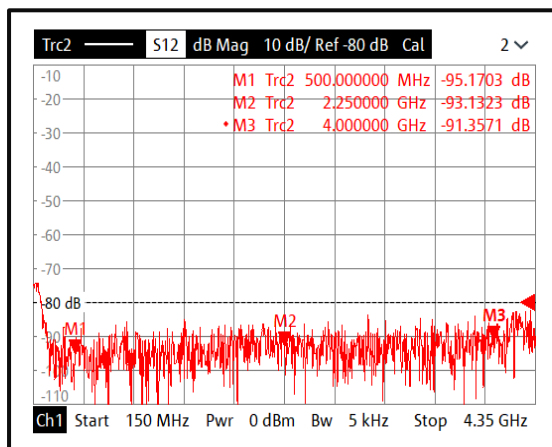
Input VSWR @+25°C



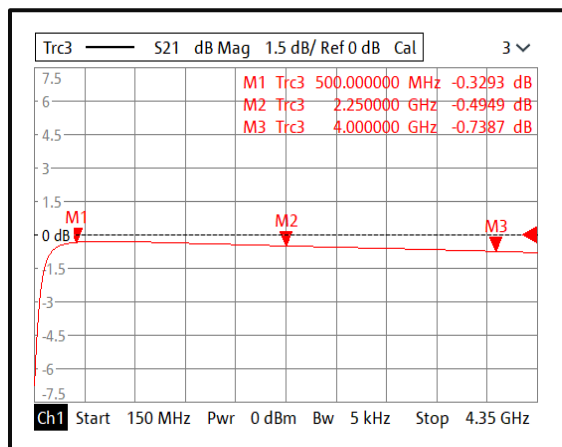
Output VSWR @+25°C



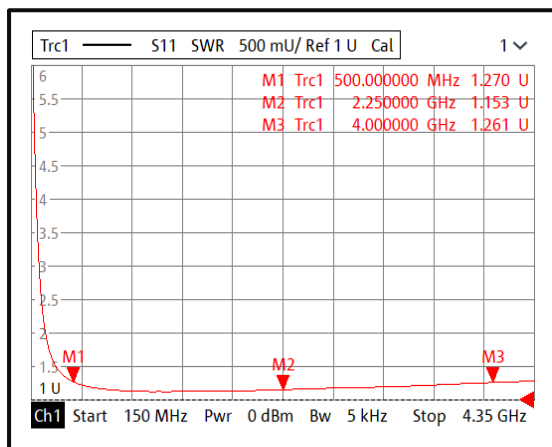
Isolation @+25°C



Insertion Loss @-40°C

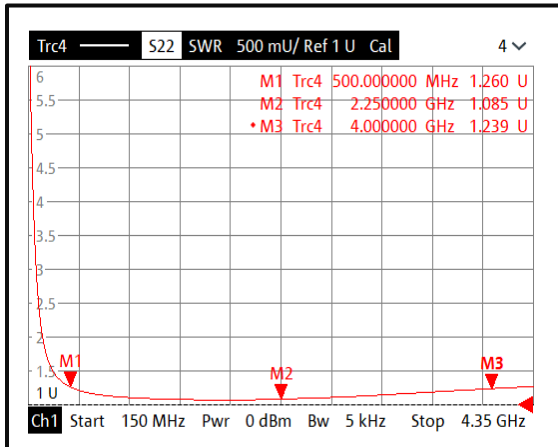


Input VSWR @-40°C

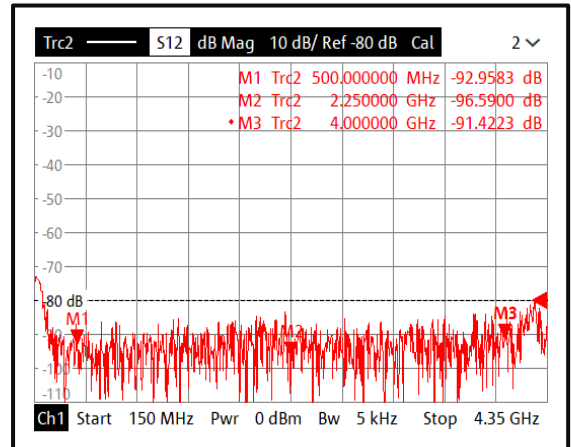


Typical Performance Plots

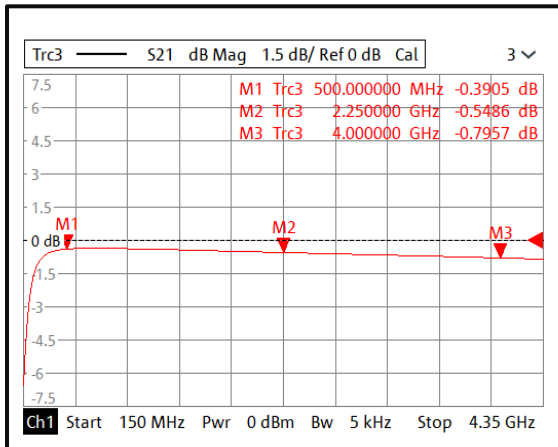
Output VSWR @-40°C



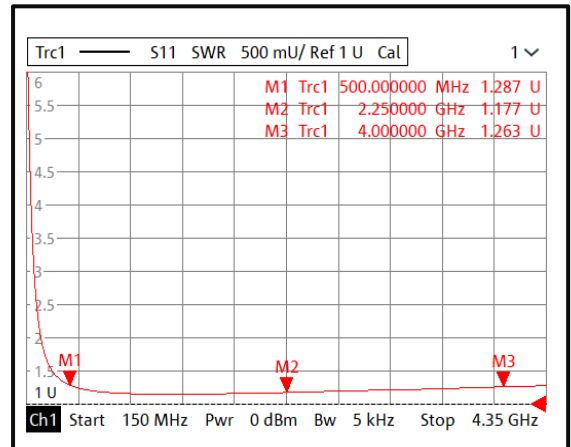
Isolation @-40°C



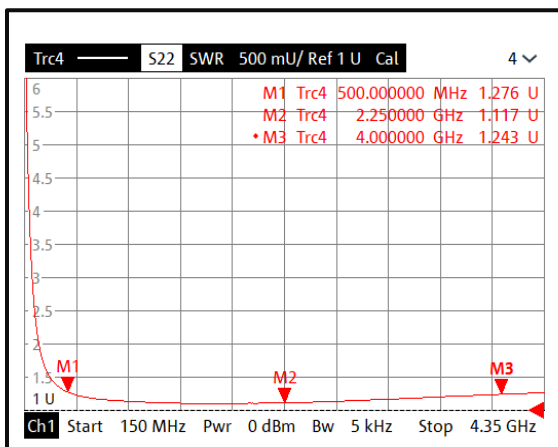
Insertion Loss @+85°C



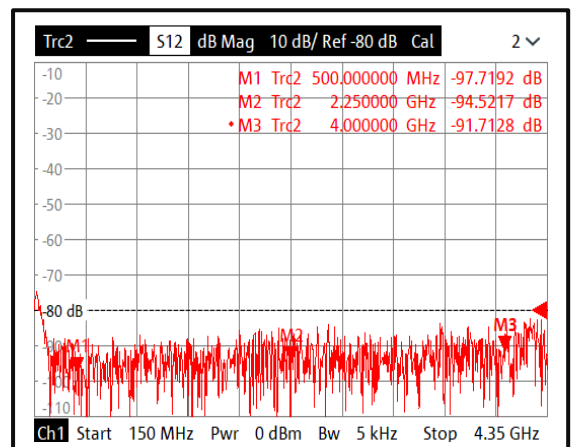
Input VSWR @+85°C



Output VSWR @+85°C

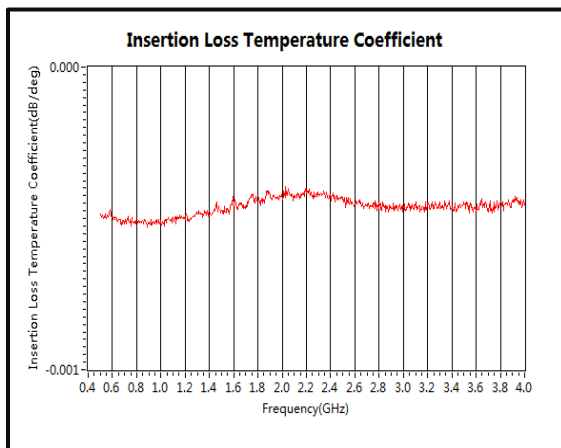


Isolation @+85°C

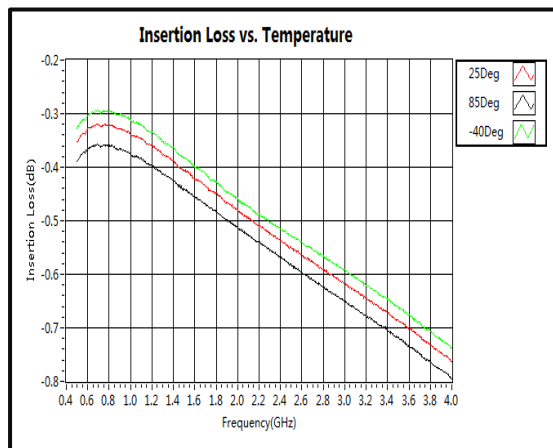


Typical Performance Plots

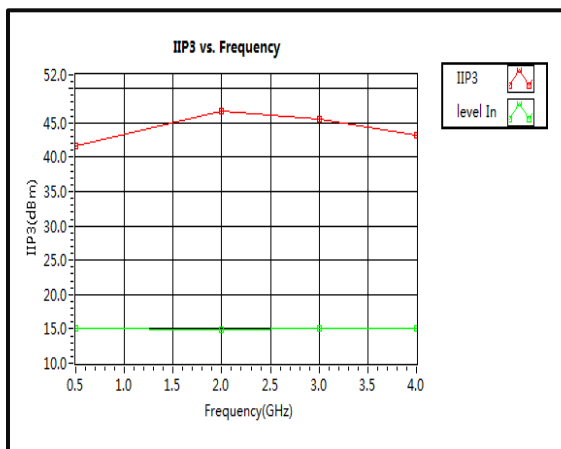
Insertion Loss Temperature Coefficient



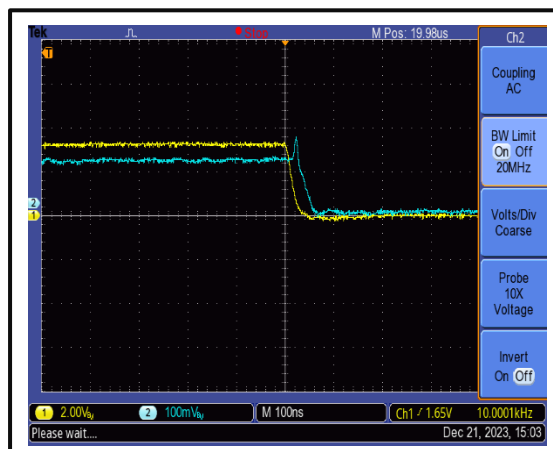
Insertion Loss vs. Temperature



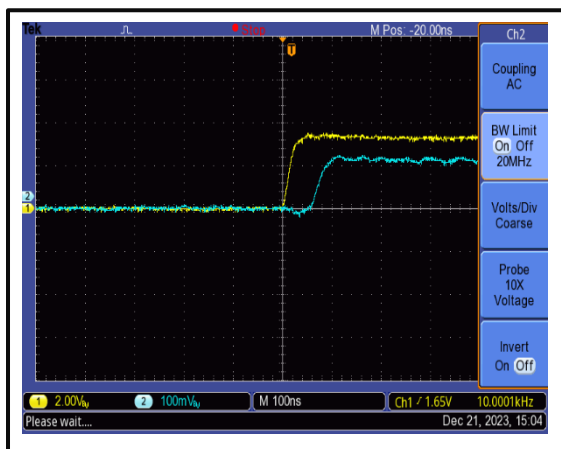
IIP3



Switching Speed

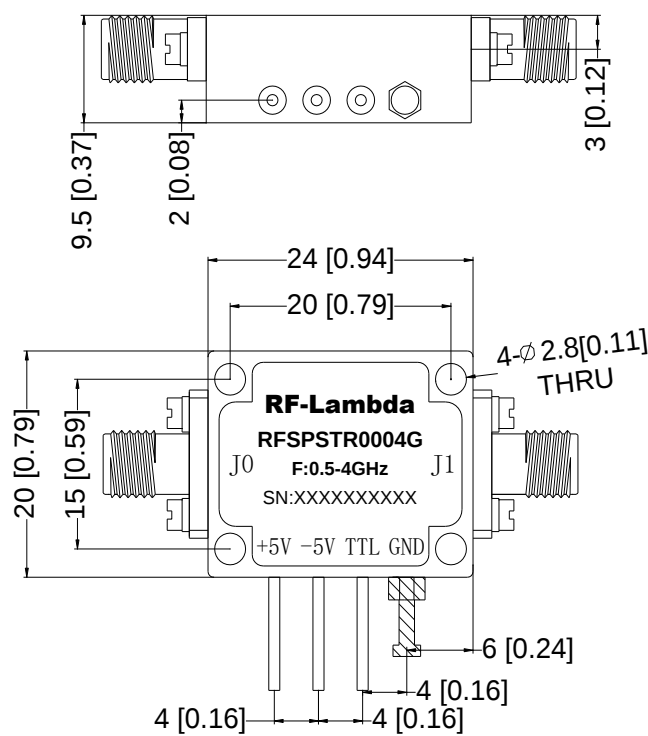


Switching Speed

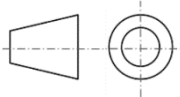


Outline Drawing

[X101]



Truth Table	
TTL Control Voltage	Low(0)=0~0.8V
THRESHOLD	High(1)=2.8~5V
Control Input TTL	State
0	OFF
1	ON
Control Pin Customization available upon request	



- Notes:
1. Package Material: Aluminum
 2. Finish: Gold Plated
 3. All dimensions are in millimeters [inches].
 4. Housing Tolerances ± 0.1 [0.004] unless otherwise specified.
 5. Standard torque wrench must be used to secure RF connectors.

Additional Information

Documentation	Webpage
ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
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
RFSPSTR0004G	Standard	0.5GHz-4GHz SPST PIN Diode Switch

Important Notice

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