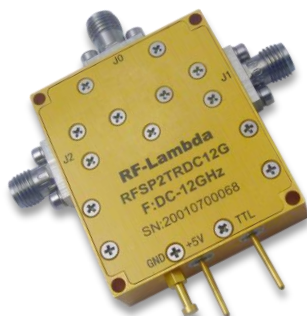


Reflective Coaxial SP2T Switch DC - 12GHz



Features

- Ultra Wide Band Operation DC-12GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation

Typical Applications

- Wireless Infrastructure
- Test and Measurement
- Military and Aerospace

Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_{dd} = +5\text{V}$, $TTL = 0 / +5\text{V}$

Description	PN: RFSP2TRDC12G						
	SP2T Reflective Switch						
	High Power Cold Switching						
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	DC-6			6-12			GHz
Insertion Loss		1.2	1.5		1.8	2.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003		dB/ $^\circ\text{C}$
Isolation	30	35		25	28		dB
Input VSWR		1.6	1.8		1.6	1.8	: 1
Output VSWR		1.6	1.8		1.6	1.8	: 1
RF Input power			44			44	dBm
DC Power Dissipation		0.5			0.5		W
0.1dB Compression Point (Po.1dB)		44			44		dBm
IIP3		50			48		dBm
Switching Speed	150 Max.						ns
Weight	1.6 Max.						ounces
Impedance	50						Ω
Bias Current (+5V)	100 Max.						mA
Input / Output Connectors	SMA - Female						
Finish	Gold Plated						
Material	Aluminum						
Sealing	Hermetically Sealed (Optional)						

Notes:

1. The part does not have DC blocks however it does not require blocking capacitors. The input and output connections do not have any DC voltage and can be connected to DC ground through a short or resistive load.
2. Please note that below 100MHz the power handling capability is reduced by 6dB and the NF will increase above IL.

Absolute Maximum Ratings

Biasing Voltage	+5V±10%
-----------------	---------

Ordering Information

Part No.	Description
RFSP2TRDC12G	SP2T DC-12GHz PIN Diode Switch

Notes:

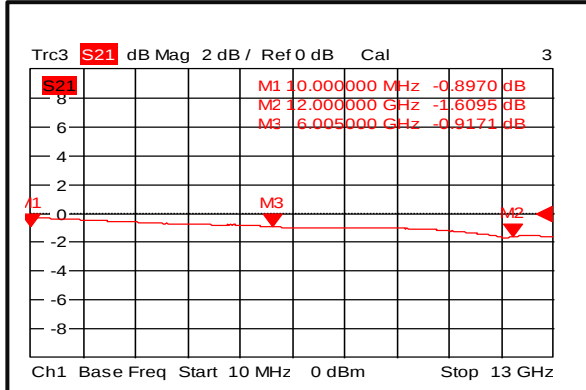
1. If the device operates in high power state, case temperature must be lower than 60°C.
2. Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could be damaged.

Environmental Specifications and Test Standards

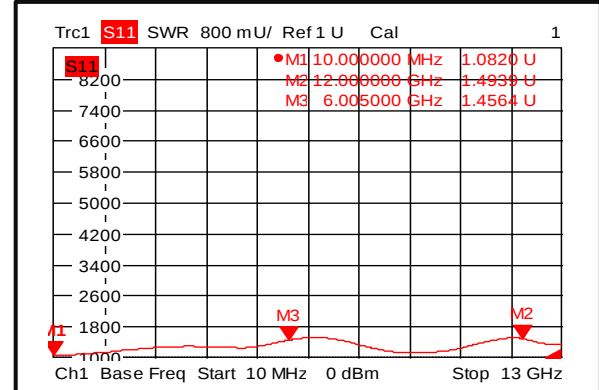
Parameter	Description
Operational Temperature	-40°C~+85°C (Case Temperature)
Storage Temperature	-50°C~+105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
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)

Typical Performance Plots

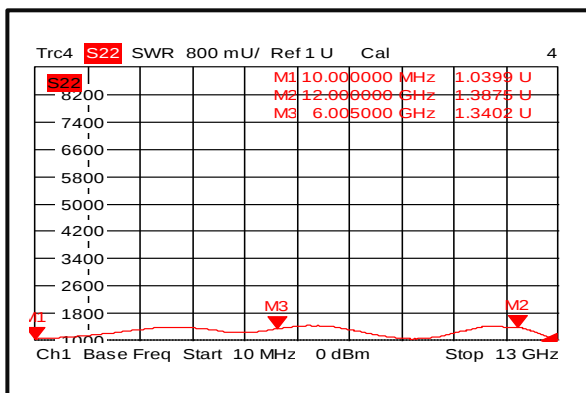
Insertion Loss @+25°C



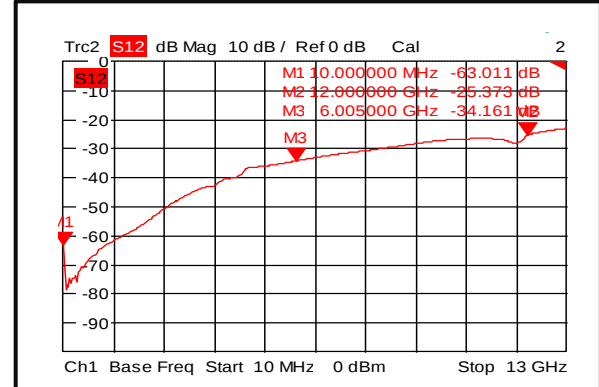
Input VSWR @+25°C



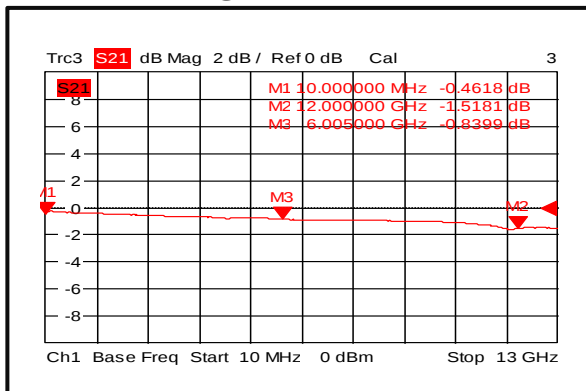
Output VSWR @+25°C



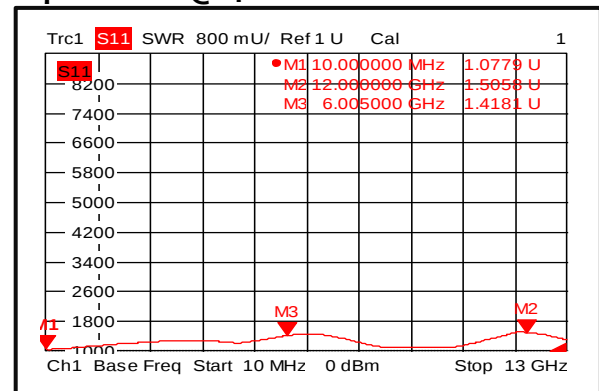
Isolation @+25°C



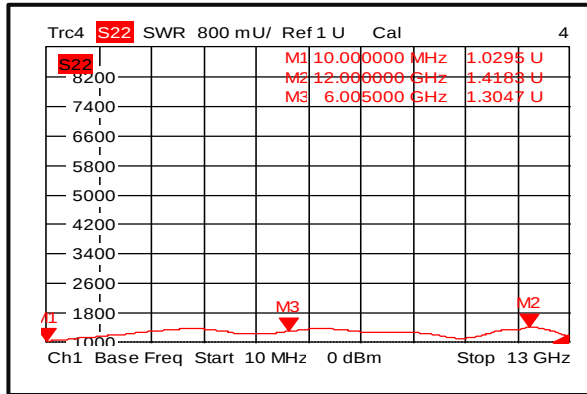
Insertion Loss @-40°C



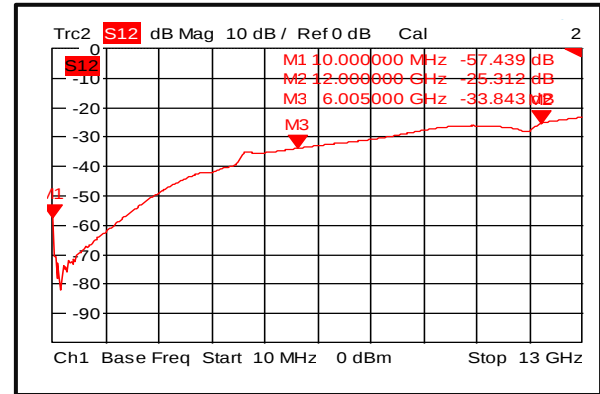
Input VSWR @-40°C



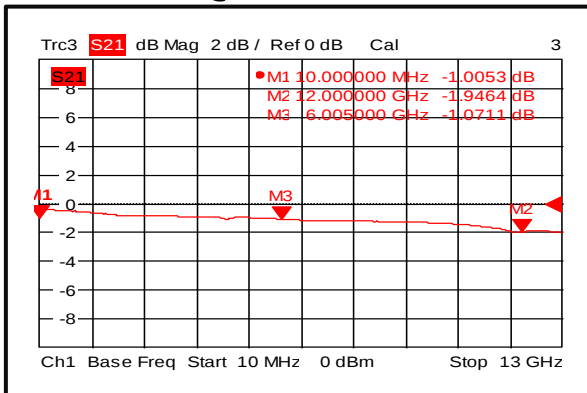
Output VSWR @-40°C



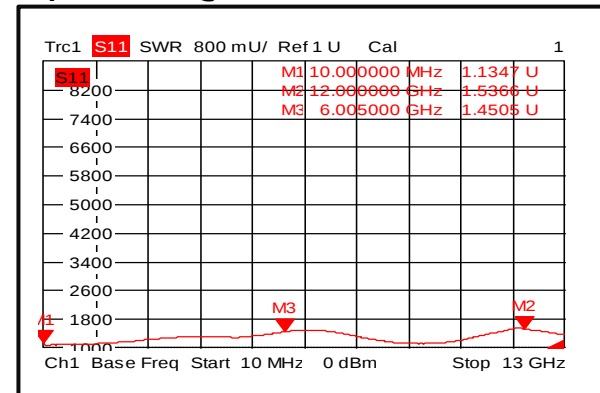
Isolation @-40°C



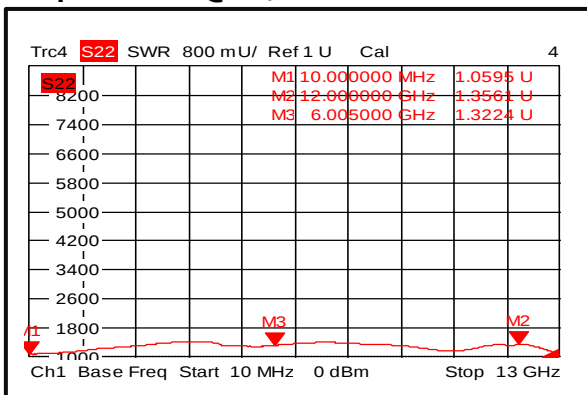
Insertion Loss @+85°C



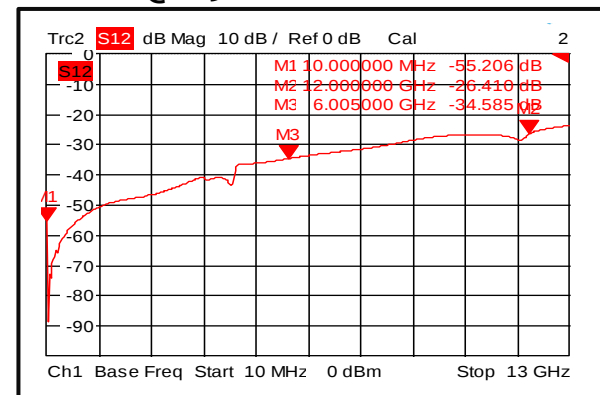
Input VSWR @+85°C



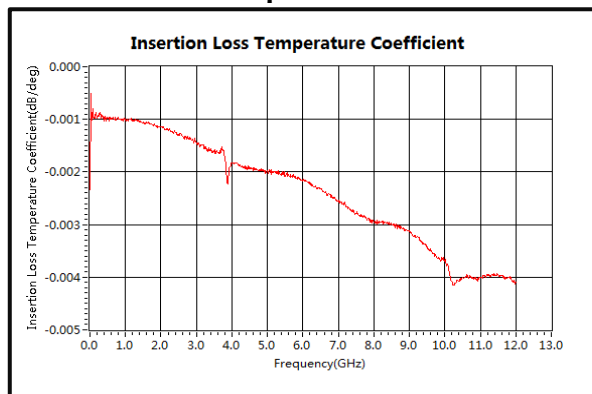
Output VSWR @+85°C



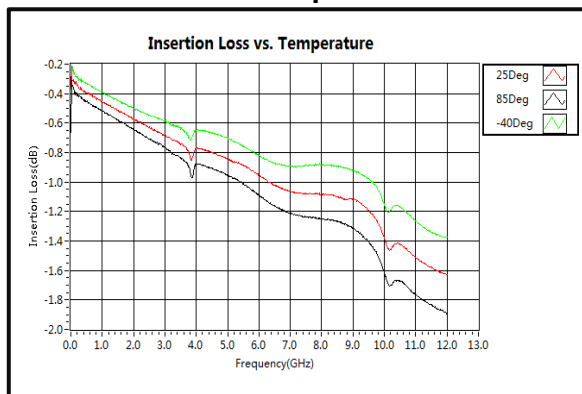
Isolation @+85°C



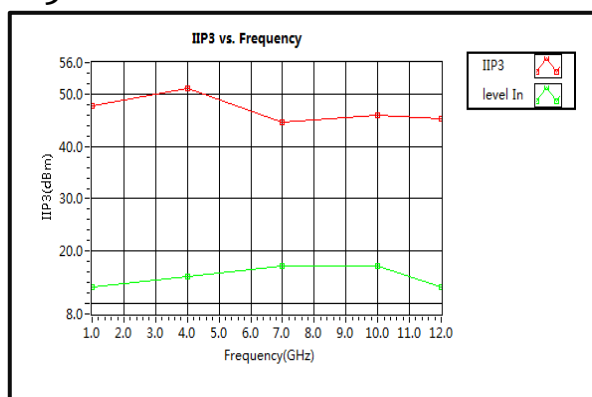
Insertion Loss Temperature Coefficient



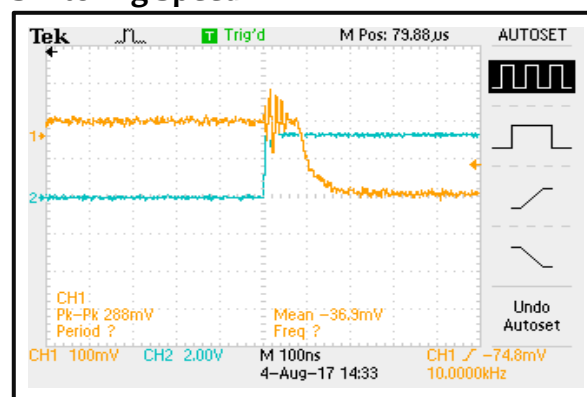
Insertion Loss vs. Temperature



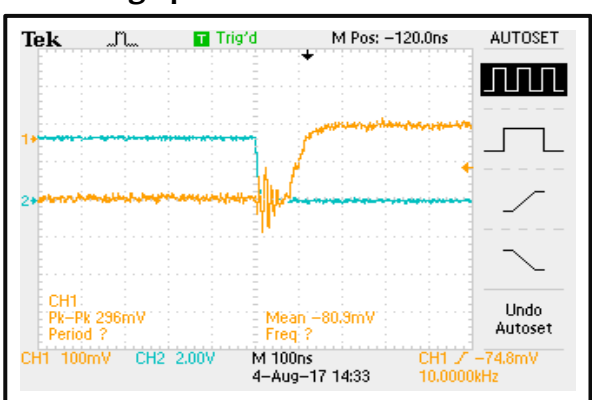
IIP3



Switching Speed



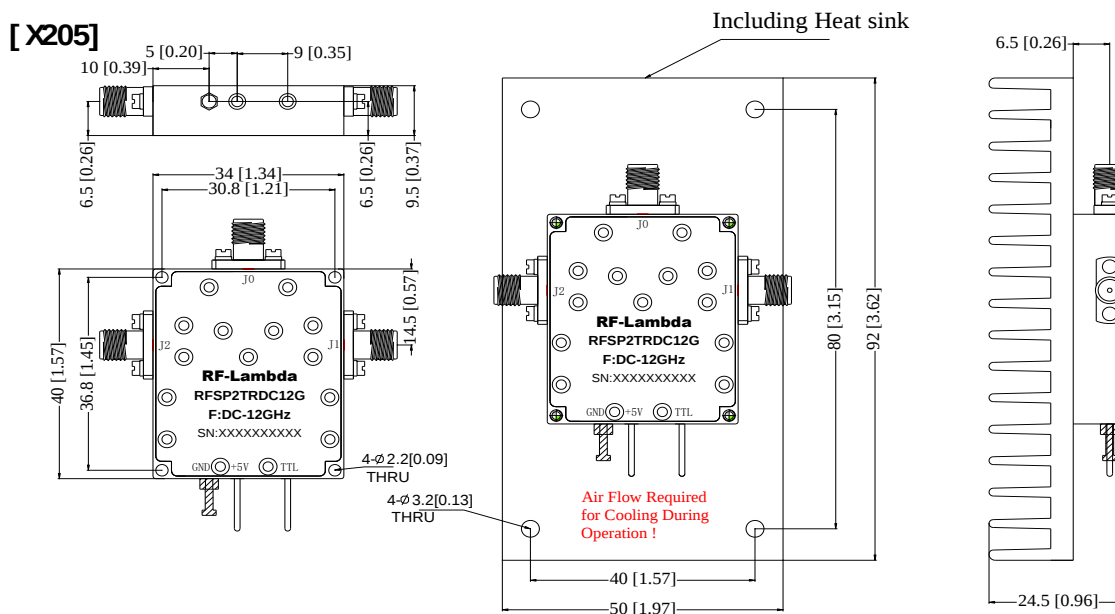
Switching Speed



Outline Drawing:

All Dimensions in mm [inches]

Housing Tolerances $\pm 0.1[0.004]$



Notes:

- Heatsink Included - Mandatory for Operation .

Truth Table

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



Important Notice

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information. RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.