



Reflective Coaxial SP2T Switch 0.8 - 20GHz



Features

- Ultra Wide Band Operation 0.8-20GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation

Typical Applications

- Wireless Infrastructure
- Military and Aerospace
- Test and Measurement

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

Description	PN: RFSP2TR0020G									
	SP2T Reflective Switch									
	Low Power Cold Switching									
Parameters	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.8-8			8-12			12-20			GHz
Insertion Loss		1.5	1.7		1.8	2.2		2.2	2.6	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Isolation	80	85		80	85		70	82		dB
Input VSWR		1.5	1.8		1.5	1.8		1.5	1.8	: 1
Output VSWR		1.5	1.8		1.5	1.8		1.5	1.8	: 1
RF Input Power (CW)			30			30			30	dBm
DC Power Dissipation		0.5			0.5			0.5		W
0.1dB Compression Point (Po.1dB)		30			30			30		dBm
IIP3		55			55			55		dBm
Switching Speed	100									ns
Weight	0.71									ounces
Impedance	50									Ω
Bias Current (+5V/-5V)	80/50									mA
Input / Output Connectors	SMA - Female									
Finishing	Gold Plating									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									



Absolute Maximum Ratings

Biassing	+5V±10%/-5V±10%
TTL Control Voltage	0~0.8V/2.8~5V

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

Ordering Information

Part No.	ECCN	Description
RFSP2TR0020G	EAR99	SP2T 0.8-20GHz PIN Diode Switch

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C (Case Temperature)
Storage Temperature		-50°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & 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	MIL-STD-883 (For Hermetically Sealed Units)



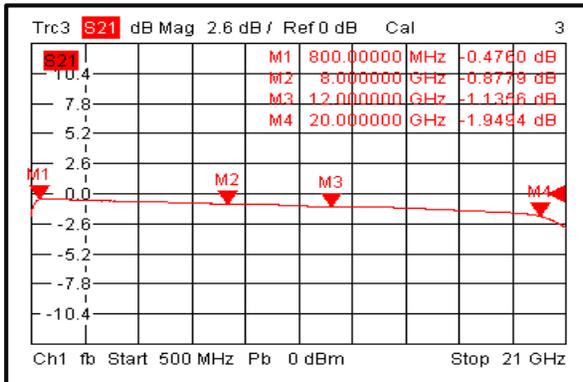
RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

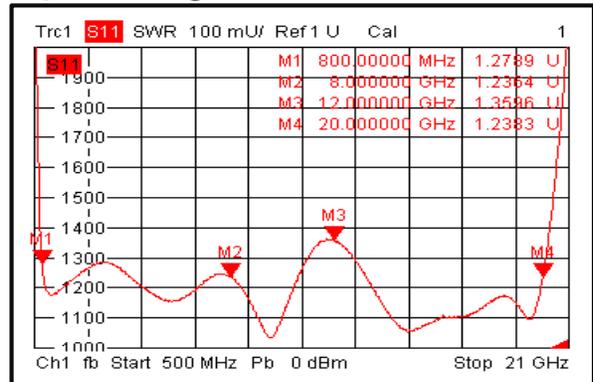
RFSP2TRO020G

Typical Performance Plots

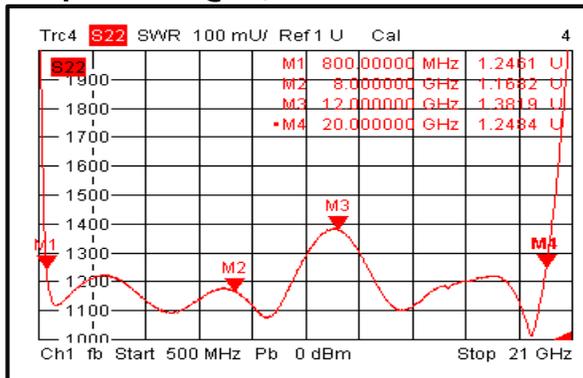
Insertion Loss@+25°C



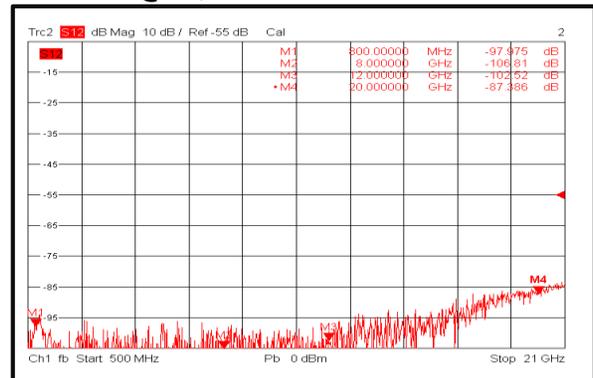
Input VSWR@+25°C



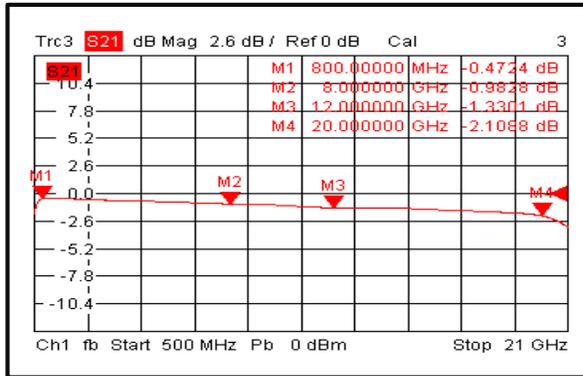
Output VSWR@+25°C



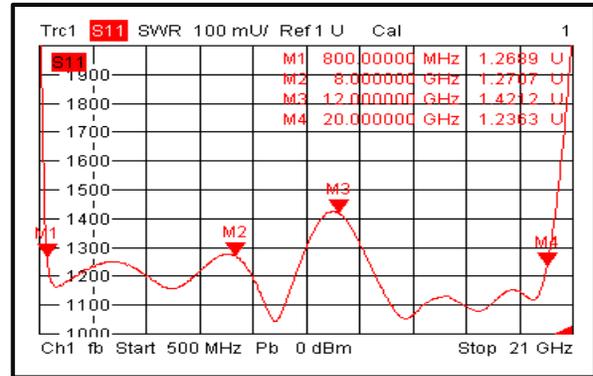
Isolation@+25°C



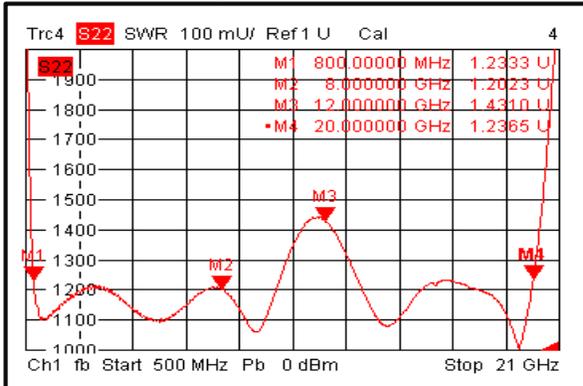
Insertion Loss@-45°C



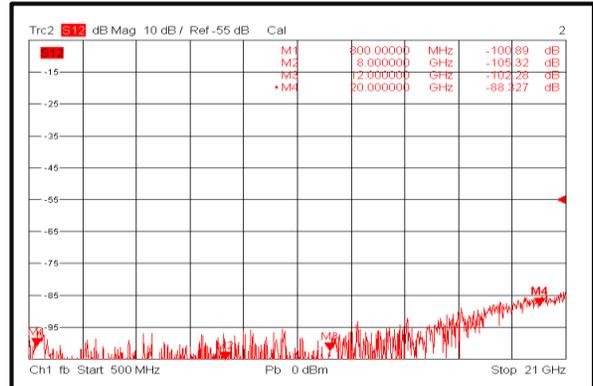
Input VSWR @-45°C



Output VSWR @-45°C



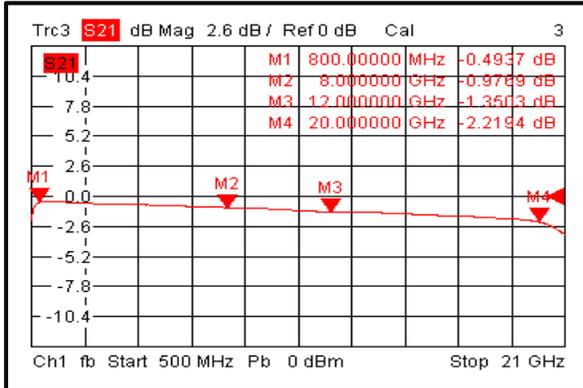
Isolation @-45°C



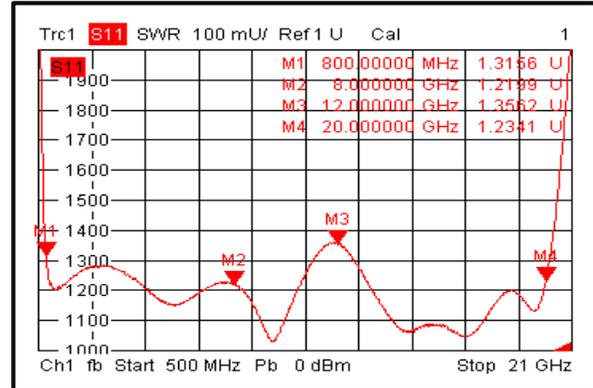
Reflective Coaxial Single Pole Double Throw Switch 0.8-20GHz



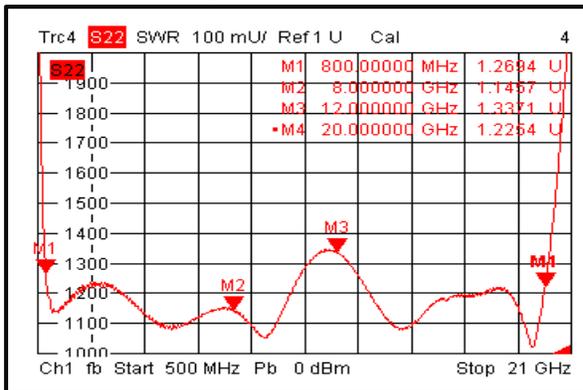
Insertion Loss@+85°C



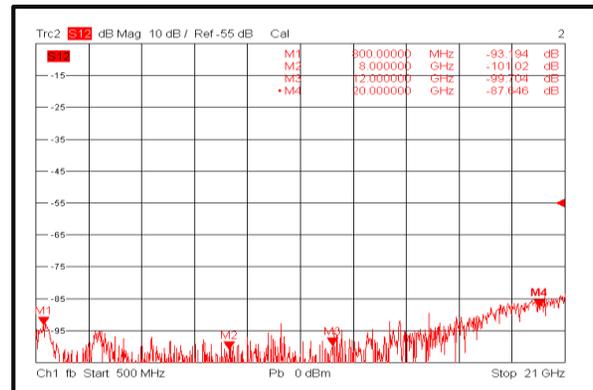
Input VSWR@+85°C



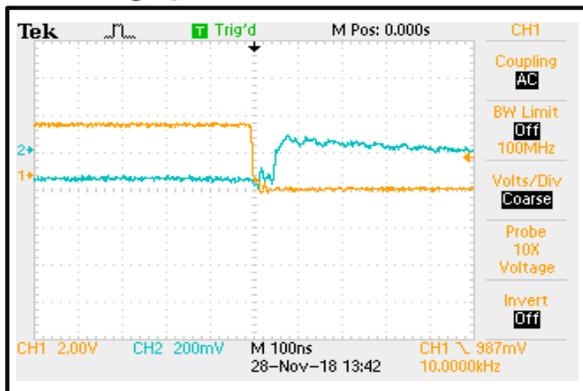
Output VSWR@+85°C



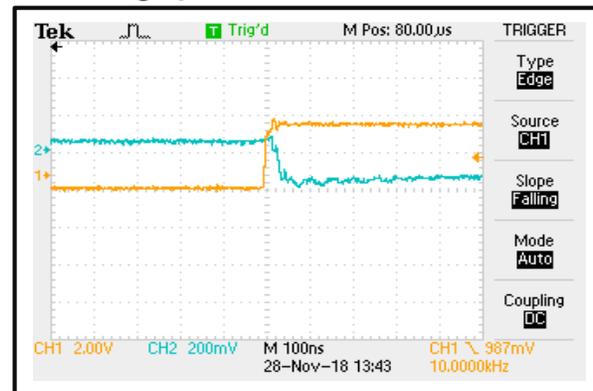
Isolation@+85°C



Switching Speed



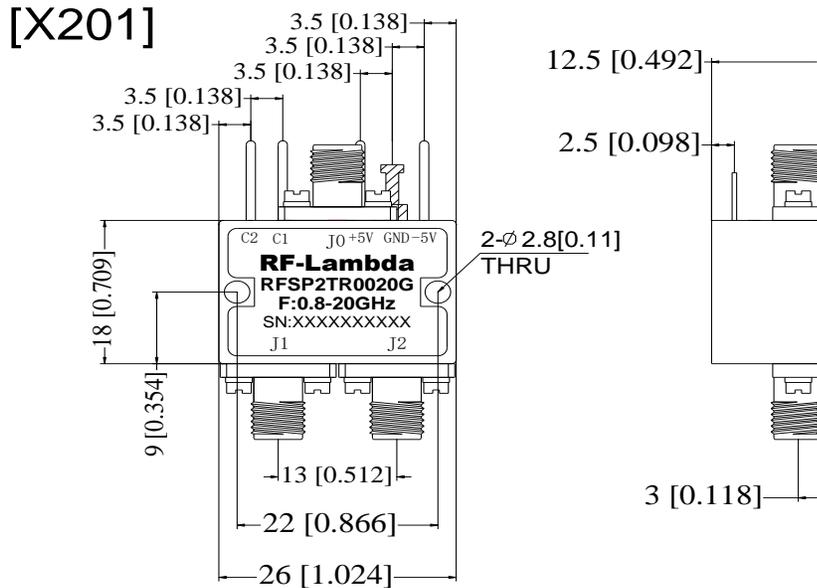
Switching Speed





Outline Drawing:

All Dimensions in mm [inches]



Truth Table

Control Input TTL		State
C1	C2	
0	1	Jo-J1
1	0	Jo-J2
0	0	OFF
1	1	OFF
Control Pin Customization available upon request		



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