



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFSP2TA0220G

Absorptive Coaxial SP2T Switch 2 - 20GHz



Features

- Ultra Wide Band Operation 2-20GHz
- 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, $T_A = +25^{\circ}\text{C}$, $V_{dd} = +5\text{V}/-5\text{V}$, $TTL = 0 / +5\text{V}$

Description	PN: RFSP2TA0220G									
	SP2T Absorptive Switch									
	Low Power Cold Switching									
	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Parameters										
Frequency Range	2		8	8		12	12		20	GHz
Insertion Loss		1.5	1.7		1.8	2.2		2.8	3.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Isolation	70	80		70	75		60	65		dB
Input VSWR		1.6	1.8		1.6	1.8		1.6	1.8	:1
Output VSWR		1.6	1.8		1.6	1.8		1.6	1.8	:1
RF Input Power (CW)			30			30			30	dBm
DC Power Dissipation		0.4			0.4			0.4		W
0.1dB Compression Point ($P_{0.1\text{dB}}$)		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									
Finish	Gold Plating									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									

Absorptive Coaxial Single Pole Double Throw Switch 2 - 20GHz



Absolute Maximum Ratings

Biasing	+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
RFSP2TA0220G	EAR99	SP2T 2-20GHz 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	MIL-STD-883	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)



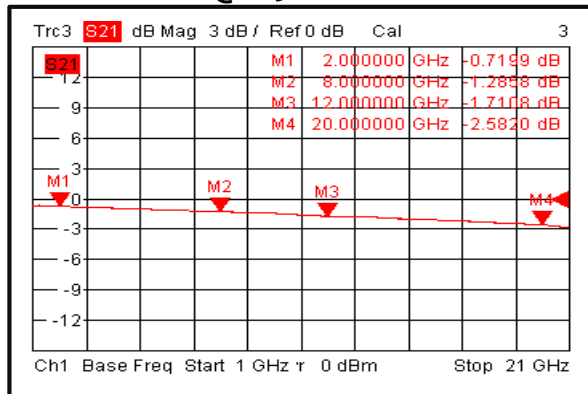
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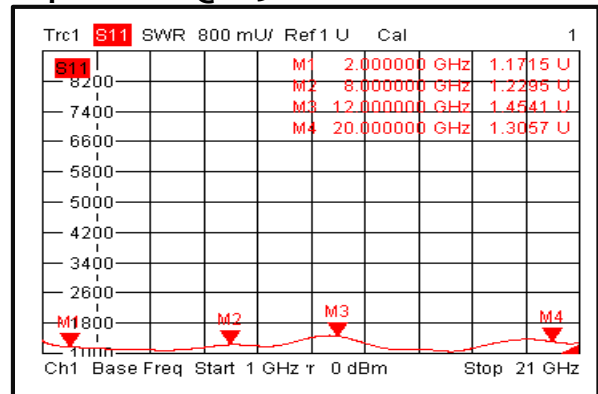
RFSP2TA0220G

Typical Performance Plots

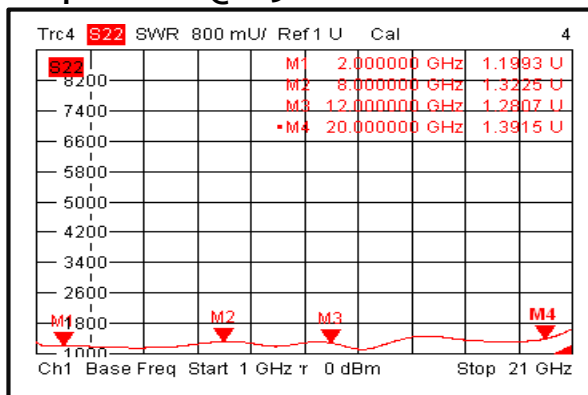
Insertion Loss @+25°C



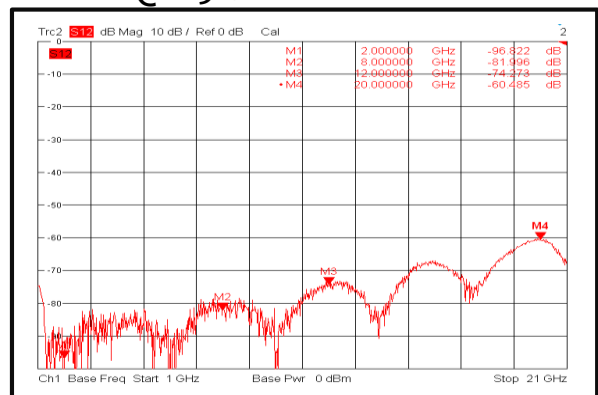
Input VSWR @+25°C



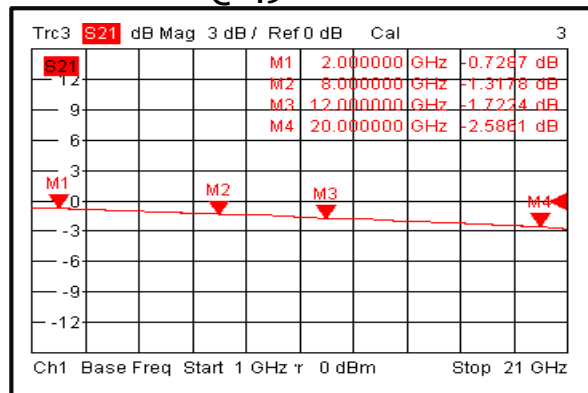
Output VSWR @+25°C



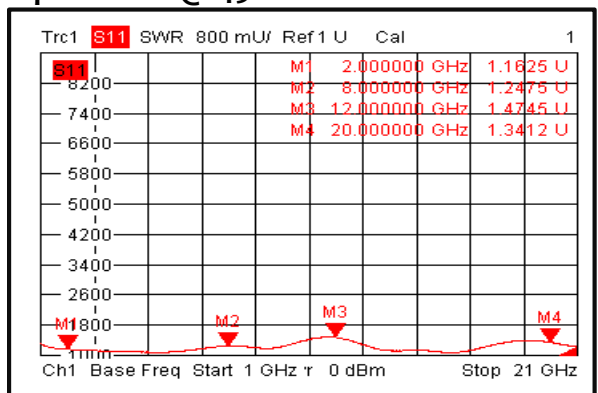
Isolation @+25°C



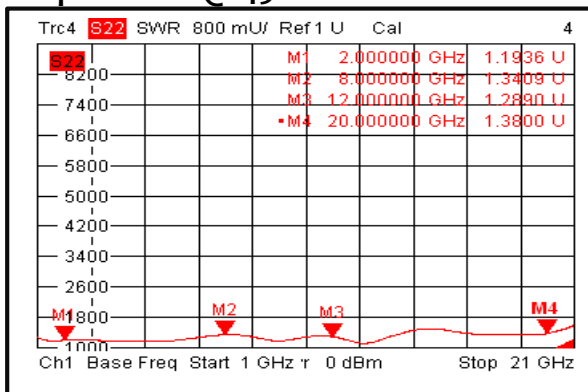
Insertion Loss @-45°C



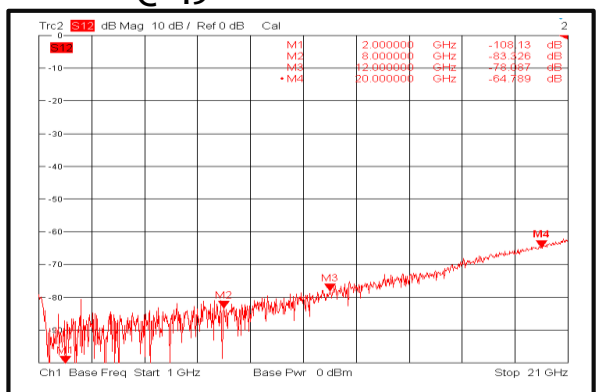
Input VSWR @-45°C



Output VSWR @-45°C



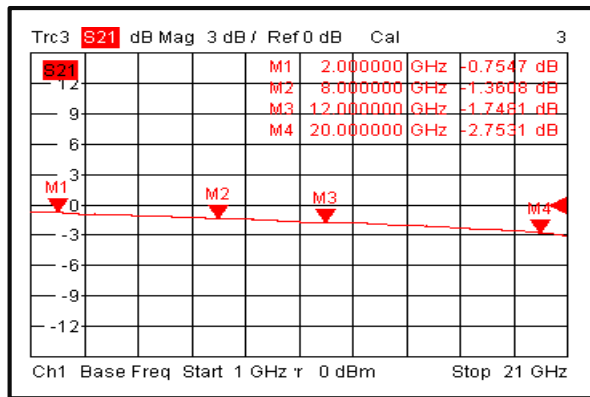
Isolation @-45°C



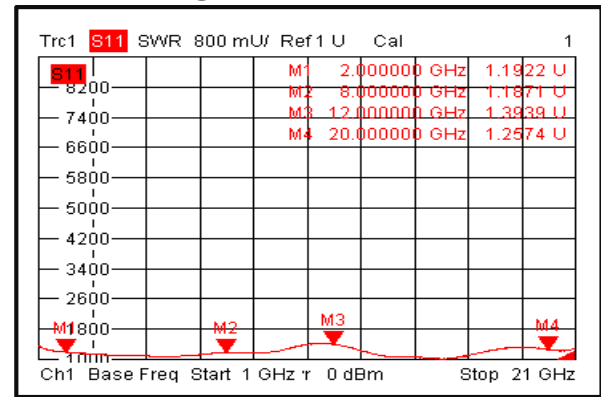
Absorptive Coaxial Single Pole Double Throw Switch 2 - 20GHz



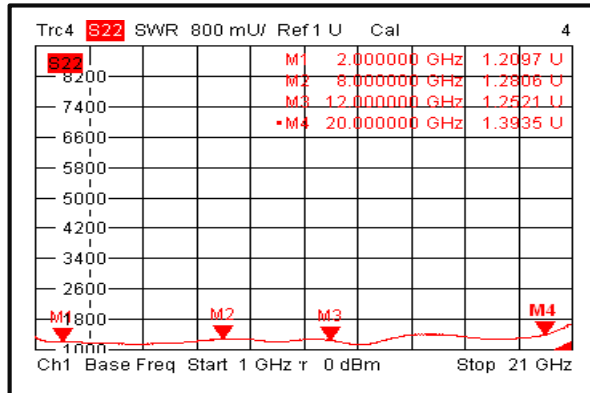
Insertion Loss @+85°C



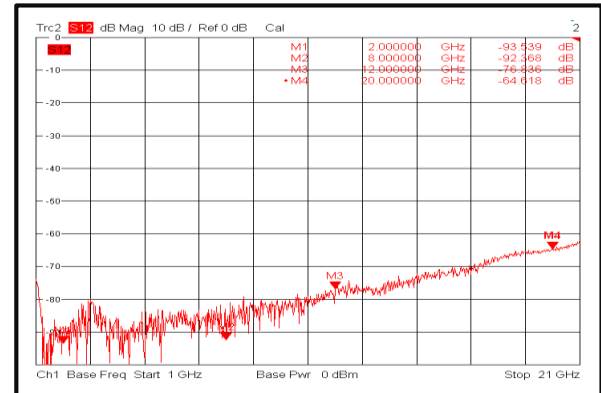
Input VSWR @+85°C



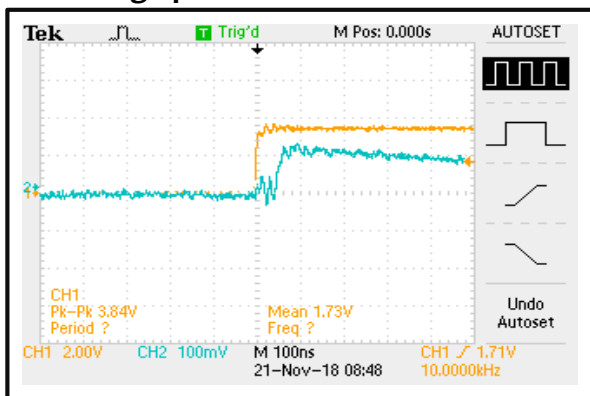
Output VSWR @+85°C



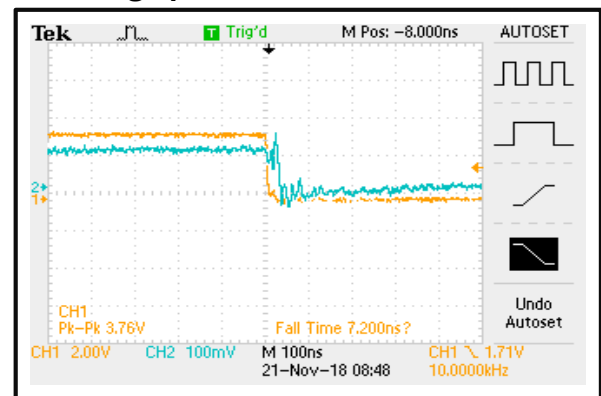
Isolation @+85°C



Switching Speed



Switching Speed

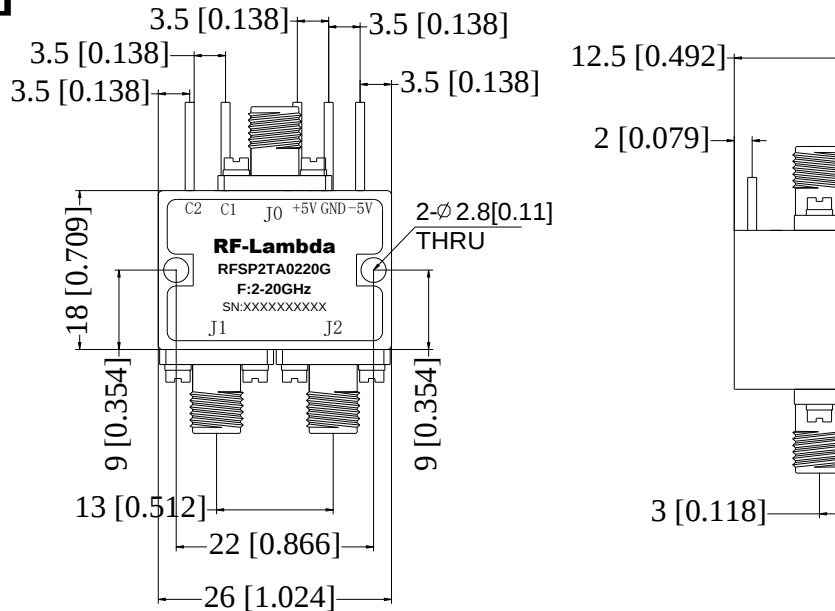




Outline Drawing:

All Dimensions in mm [inches]

X[201]



Truth Table

Control Input TTL		State
C1	C2	
1	0	J0-J1
0	1	J0-J2
0	0	OFF
1	1	OFF
Control Pin Customization available upon request		



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