



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFSP4TA01M50G

Absorptive Coaxial SP4T Switch 0.1 - 50GHz



Features

- Ultra Wide Band Operation 0.1-50GHz
- 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, $T_A = +25^{\circ}\text{C}$, $V_{dd} = +5\text{V}/-15\text{V}$, $\text{TTL} = 0 / +5\text{V}$

Description	PN: RFSP4TA01M50G									
	SP4T Absorptive Switch									
	Low Power Cold Switching									
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1-18			18-43.5			43.5-50			GHz
Insertion Loss		3.3	4.0		5.0	6.0		5.5	6.5	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/ °C
Isolation	60	70		40	55		45	55		dB
Input VSWR		1.8	2.5		2.5	3		2	2.5	: 1
Output VSWR		1.8	2.5		2.5	3		2	2.5	: 1
RF Input Power (CW)			23			23			23	dBm
Power Dissipation		0.6			0.6			0.6		W
0.1dB Compression Point ($P_{0.1\text{dB}}$)		23			23			23		dBm
IIP3		55			50			48		dBm
Switching Speed	100									ns
Weight	1.06									ounces
Impedance	50									Ω
Bias Current (+5V/-15V)	120/50									mA
Input / Output Connectors	2.4mm-Female									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (optional)									

Absorptive Coaxial Single Pole Four Throw Switch 0.1 - 50GHz



Absolute Maximum Ratings

Biasing	+5V±10%/-15V±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
RFSP4TA01M50G	EAR99	SP4T 0.1-50GHz 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		MIL-STD-883 (For Hermetically Sealed Units)



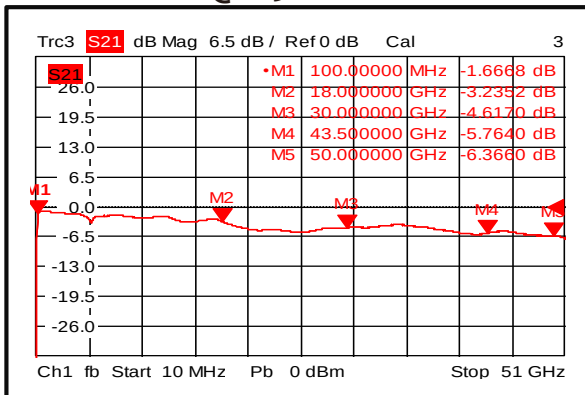
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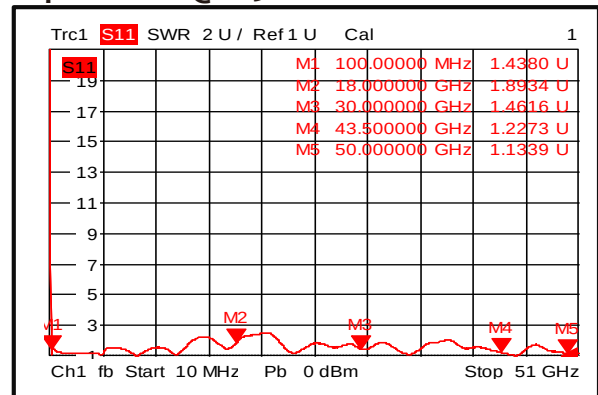
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Typical Performance Plots

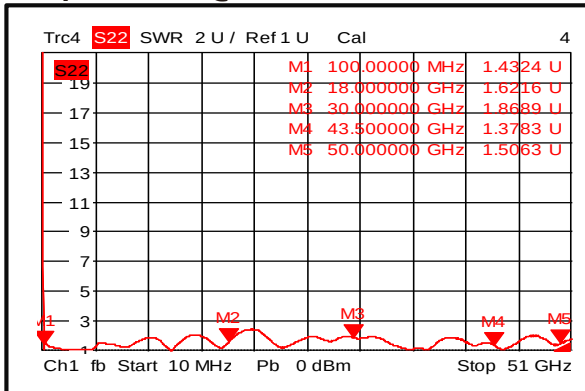
Insertion Loss @+25°C



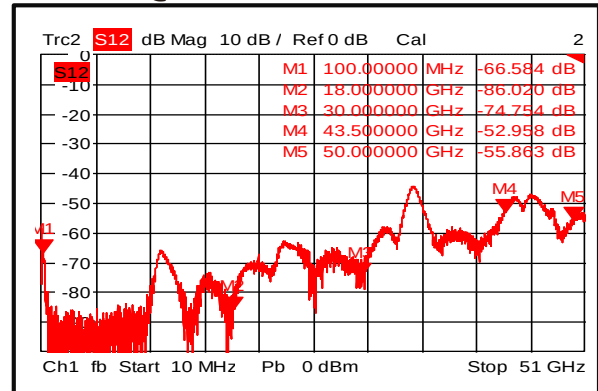
Input VSWR @+25°C



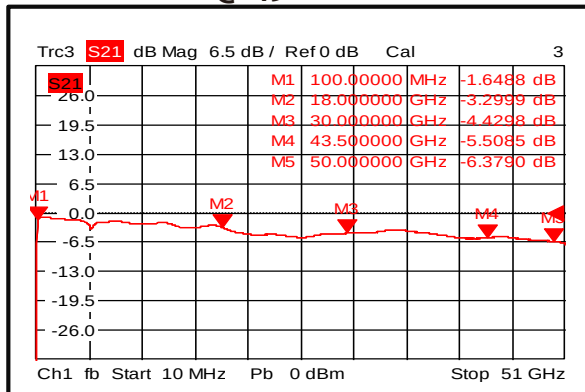
Output VSWR @+25°C



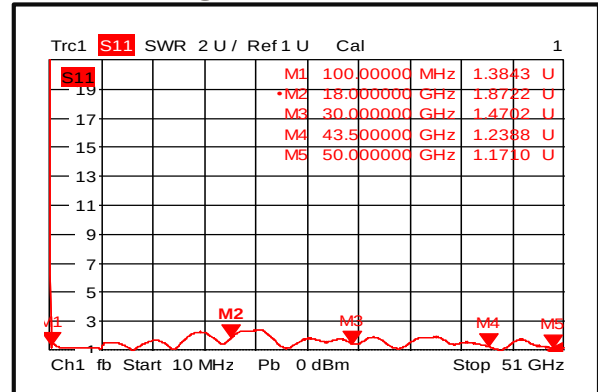
Isolation @+25°C



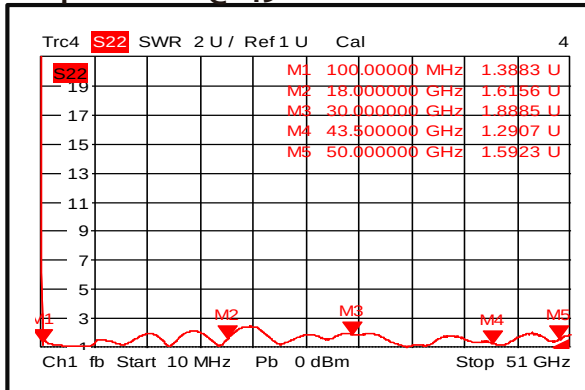
Insertion Loss @-45°C



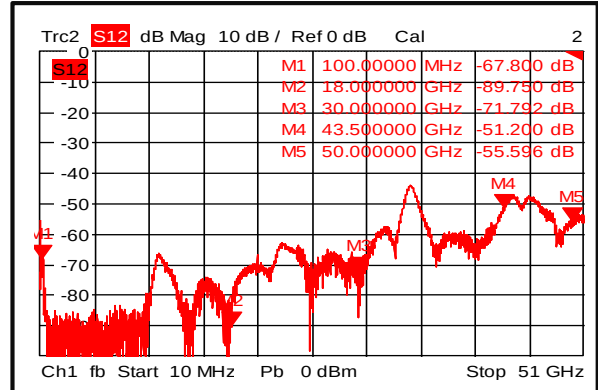
Input VSWR @-45°C



Output VSWR @-45°C



Isolation @-45°C



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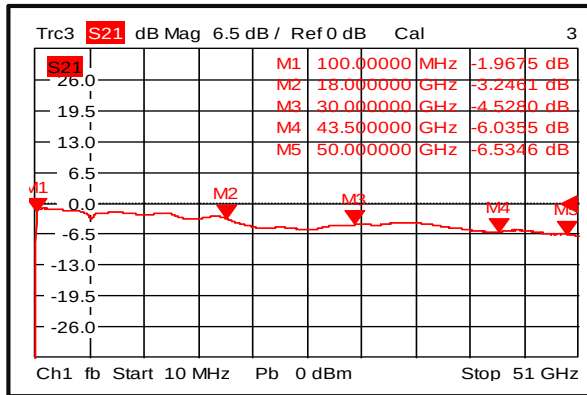


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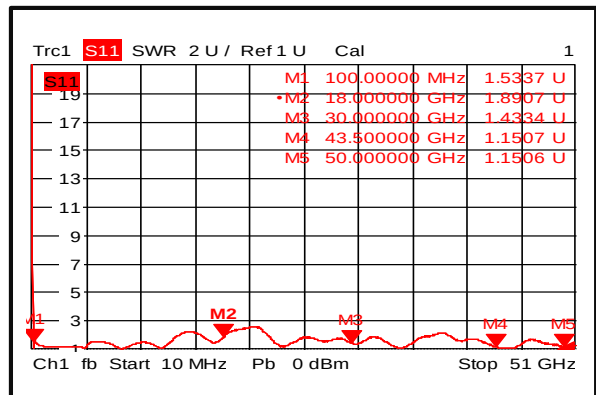
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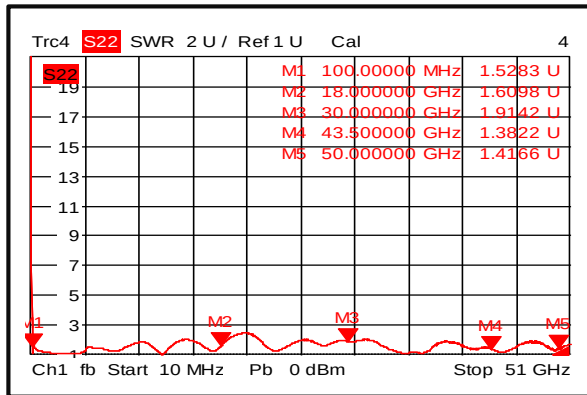
Insertion Loss @+85°C



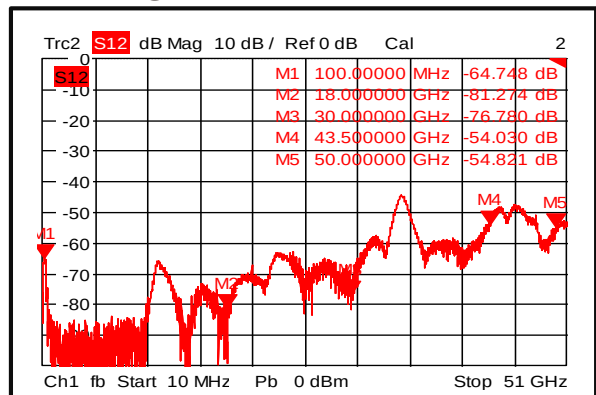
Input VSWR @+85°C



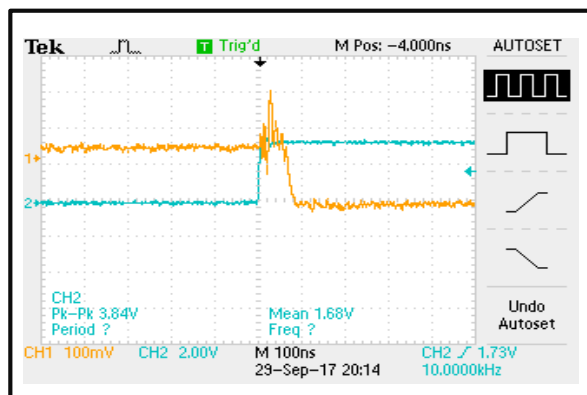
Output VSWR @+85°C



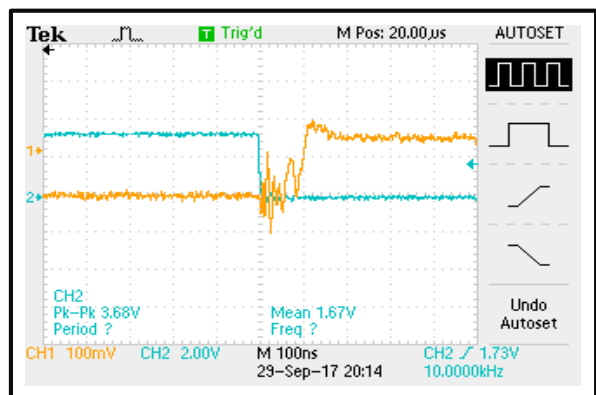
Isolation @+85°C



Switching Speed



Switching Speed

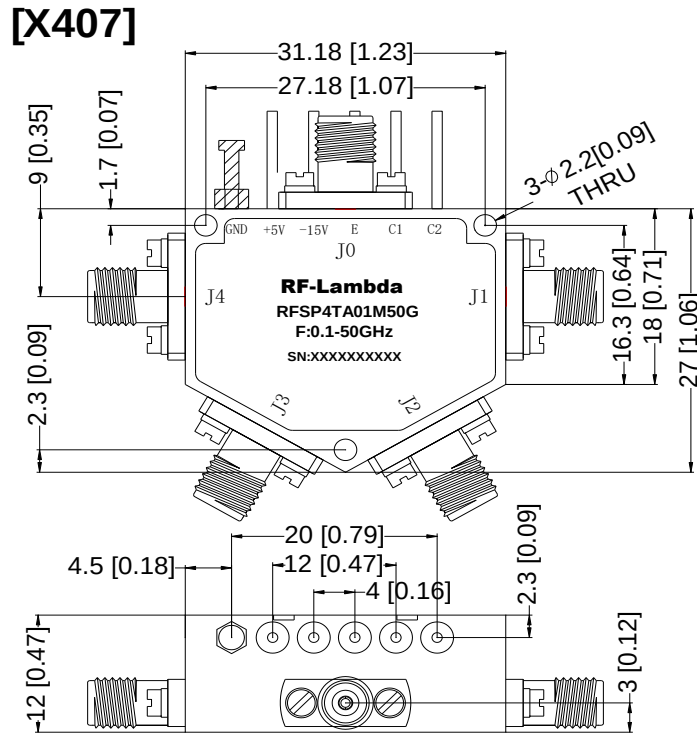


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Outline Drawing:

All Dimensions in mm [inches]



Truth Table

Control Input TTL			Signal Path State
C2	C1	E	
x	x	1	ALL port off(50Ω)
0	0	0	J0-J1
0	1	0	J0-J2
1	0	0	J0-J3
1	1	0	J0-J4
Control Pin Customization available upon request			



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