



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

Absorptive Coaxial Single Pole Four Throw Switch 0.1 - 50GHz

Electrical Specifications, $T_A = +25\text{ }^\circ\text{C}$, $V_{dd} = +5\text{V}/-15\text{V}$, $TTL = 0 / +5\text{V}$

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		6.5	7.0	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		0.8			0.8			0.8		W
0.1dB Compression Point (Po.1dB)		23			23			23		dBm
IIP3		43			38			33		dBm
Switching Speed	100 Max.									ns
Weight	1 Max.									ounces
Impedance	50									Ω
Bias Current (+5V/-15V)	150/50 Max.									mA
Input / Output Connectors	2.4mm-Female									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									



Absolute Maximum Ratings

Biasing	+5V±10%/-15V±10% @25°C
---------	---------------------------

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

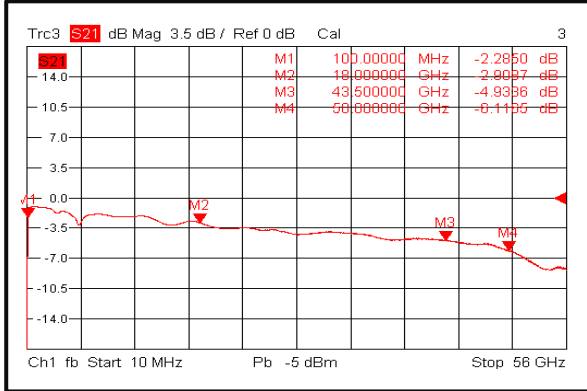
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C (Case Temperature)
Storage Temperature		-50°C~+105°C
Thermal Shock		1 Hour@ -40°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +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	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)

Absorptive Coaxial Single Pole Four Throw Switch 0.1 - 50GHz

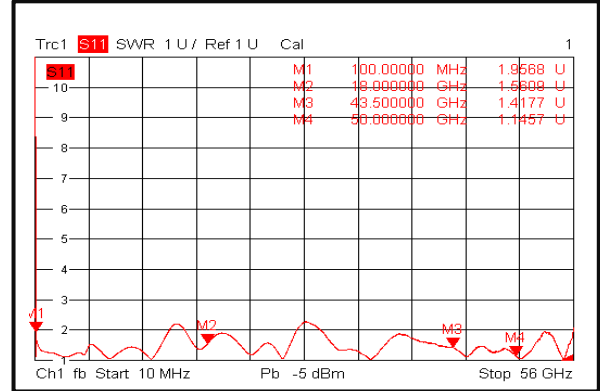


Typical Performance Plots

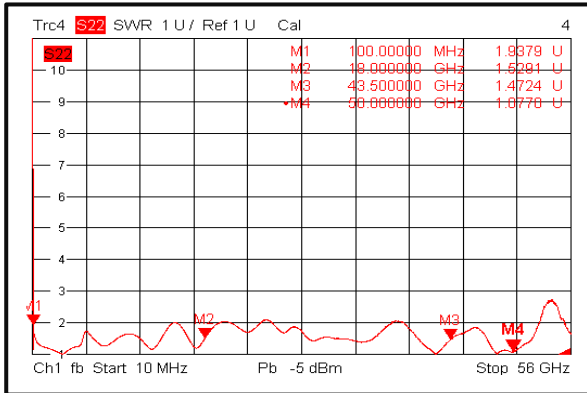
Insertion Loss @+25°C



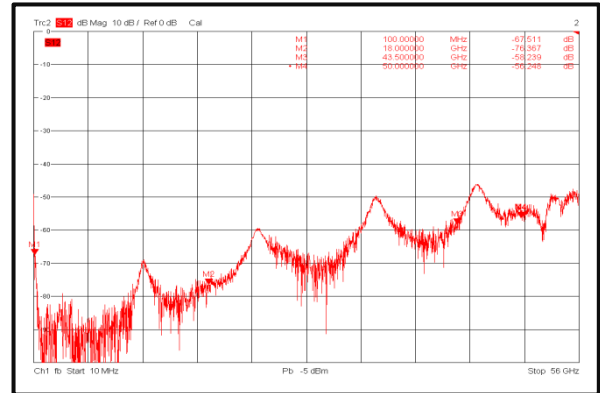
Input VSWR @+25°C



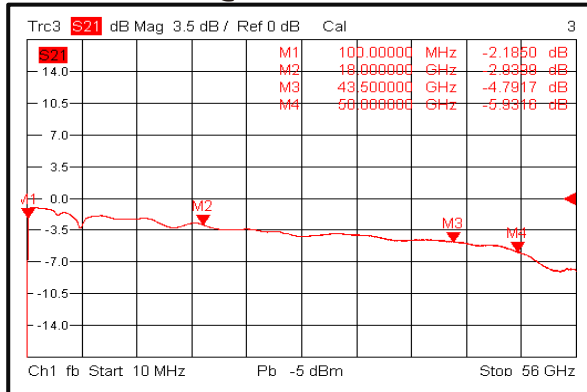
Output VSWR @+25°C



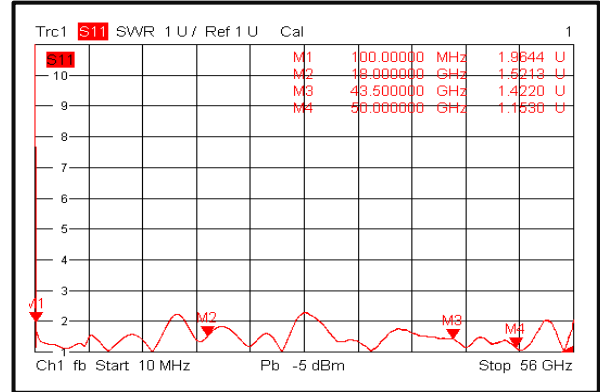
Isolation @+25°C



Insertion Loss @-40°C



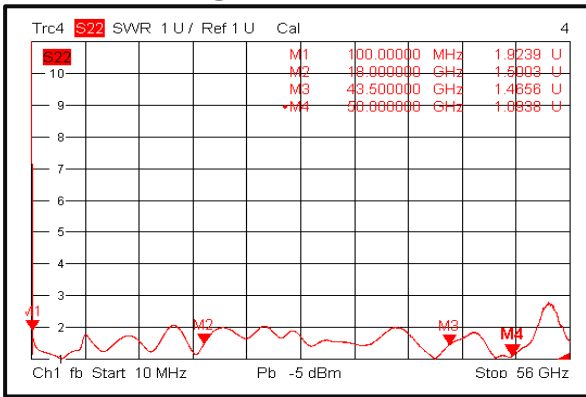
Input VSWR @-40°C



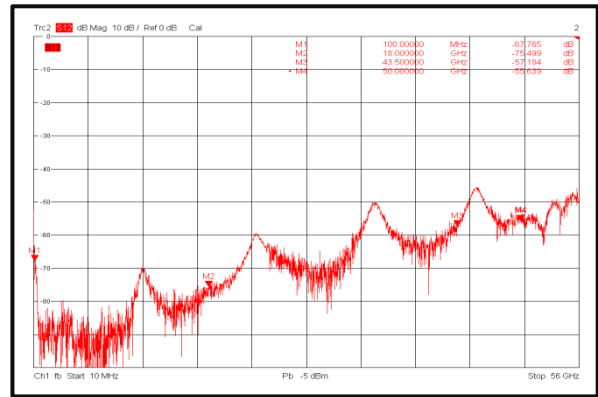
Absorptive Coaxial Single Pole Four Throw Switch 0.1 - 50GHz



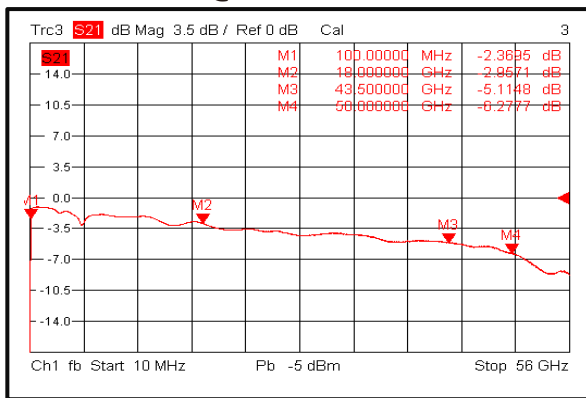
Output VSWR @-40°C



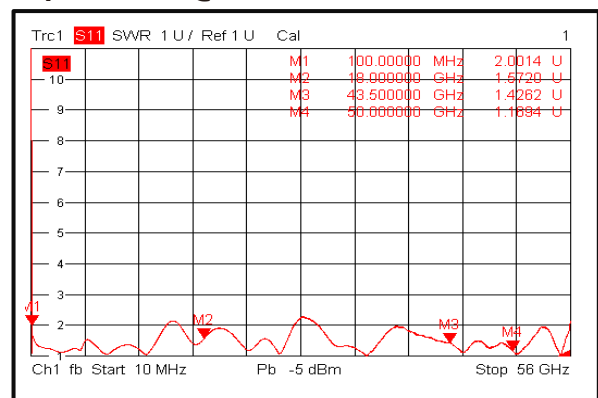
Isolation @-40°C



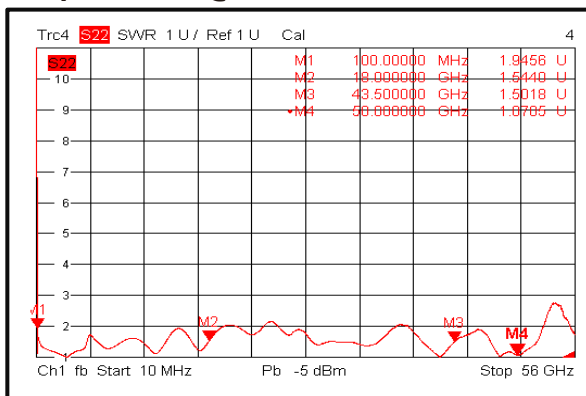
Insertion Loss @+85°C



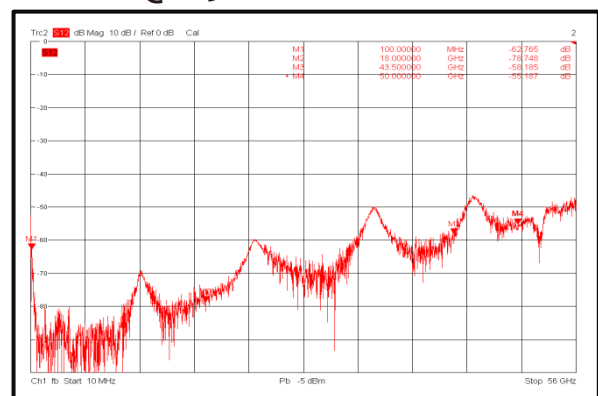
Input VSWR @+85°C



Output VSWR @+85°C



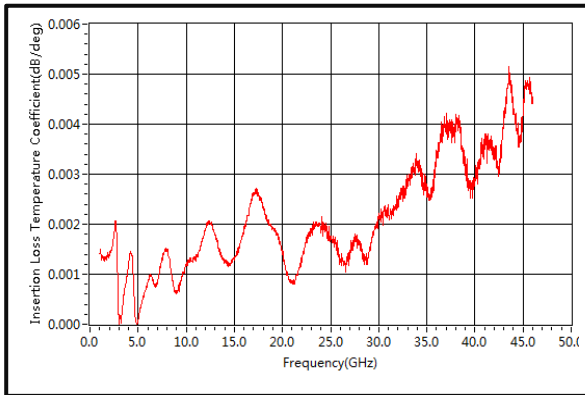
Isolation @+85°C



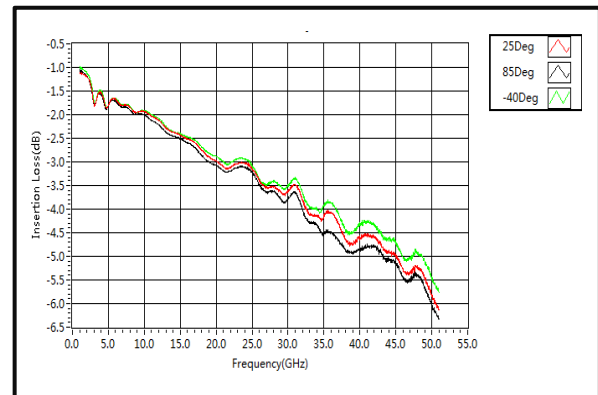
Absorptive Coaxial Single Pole Four Throw Switch 0.1 - 50GHz



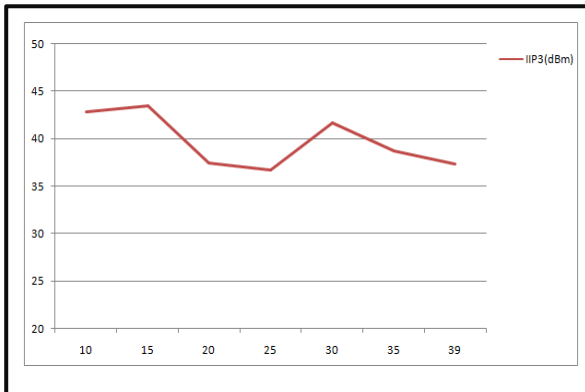
Insertion Loss Temperature Coefficient



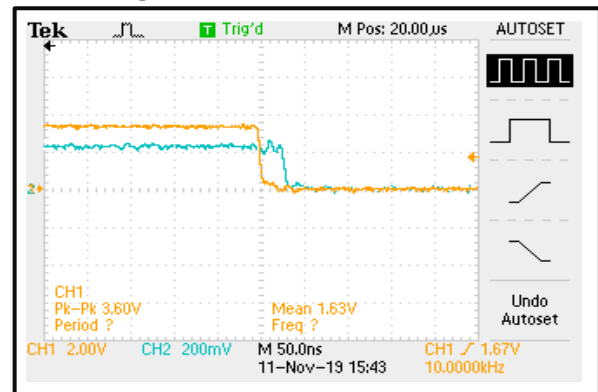
Insertion Loss vs. Temperature



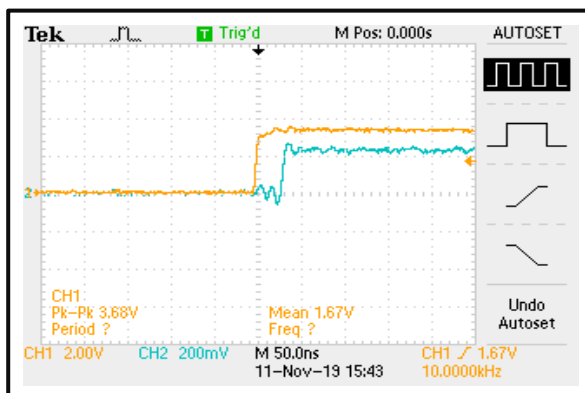
IIP3



Switching Speed



Switching Speed



Absorptive Coaxial Single Pole Four Throw Switch 0.1 - 50GHz



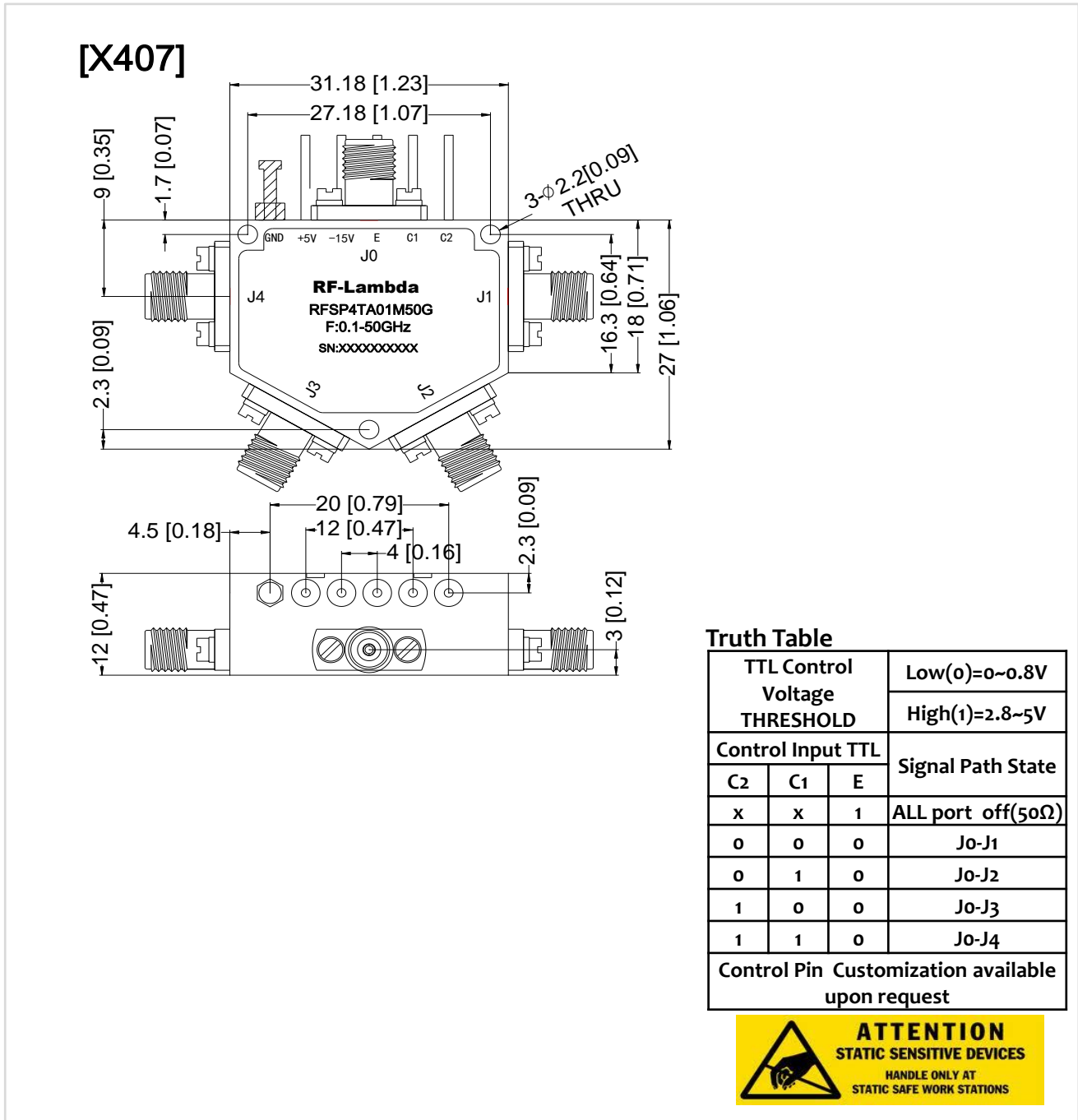
RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFSP4TA01M50G

Outline Drawing:

All Dimensions in mm [inches]



Truth Table

TTL Control Voltage THRESHOLD			Low(0)=0~0.8V
			High(1)=2.8~5V
Control Input TTL			Signal Path State
C2	C1	E	
x	x	1	ALL port off(50Ω)
0	0	0	Jo-J1
0	1	0	Jo-J2
1	0	0	Jo-J3
1	1	0	Jo-J4
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.