



### Reflective Coaxial SP2T Switch 0.001 - 60GHz



#### Features

- Ultra Wide Band Operation 0.001-60GHz
- 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,  $T_A = +25\text{ }^\circ\text{C}$ ,  $V_{dd} = +5\text{V}$ ,  $TTL = 0 / +5\text{V}$

Description	PN: RFSP2TR0060G									
	SP2T Reflective Switch									
	Low Power Cold Switching									
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.001-20			20-40			40-60			GHz
Insertion Loss		3.5	4.0		4.5	5.5		8.5	10.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Isolation	35	40		30	33		25	28		dB
Input VSWR		2.5	3.0		2.8	3.0		2.1	3.0	:1
Output VSWR		2.5	3.0		2.8	3.0		2.1	3.0	:1
RF Input Power			23			23			23	dBm
DC Power Dissipation		0.6			0.6			0.6		W
0.1dB Compression Point (Po.1dB)		23			23			23		dBm
IIP3		55			50			50		dBm
Switching Speed		50	80		50	80		50	80	ns
Weight	1.41									ounces
Impedance	50									Ω
Bias Current (+5V)	30 Max.									mA
Input / Output Connectors	1.85mm - Female									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									



**Absolute Maximum Ratings**

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

**Ordering Information**

Part No.	ECCN	Description
RFSP2TR0060G	EAR99	SP2T 0.001-60G PIN Diode Switch

**Notes:**

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

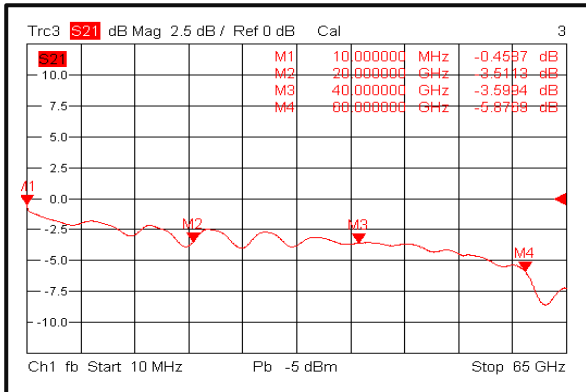
**Environmental Specifications and Test Standards**

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
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)

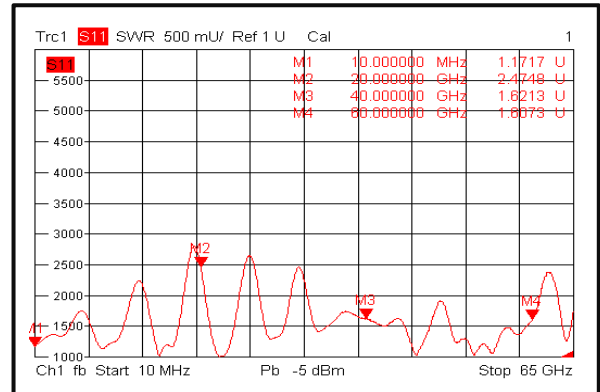


## Typical Performance Plots

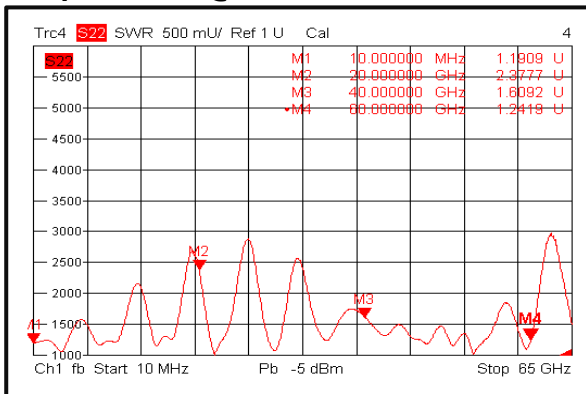
### Insertion Loss @+25°C



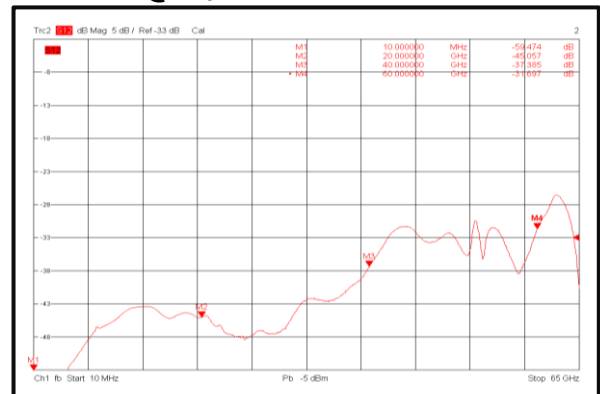
### Input VSWR @+25°C



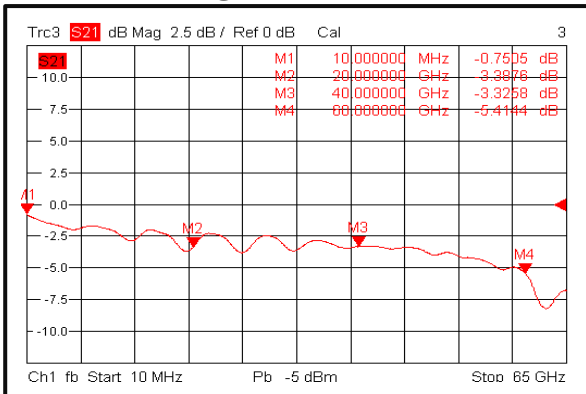
### Output VSWR @+25°C



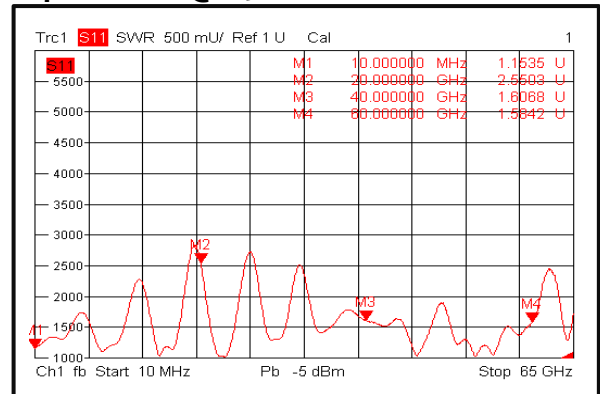
### Isolation @+25°C



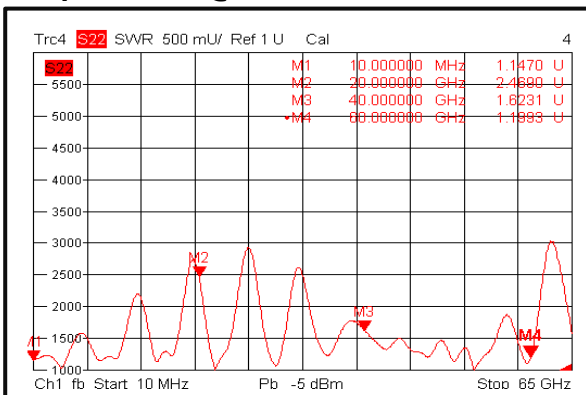
### Insertion Loss @-45°C



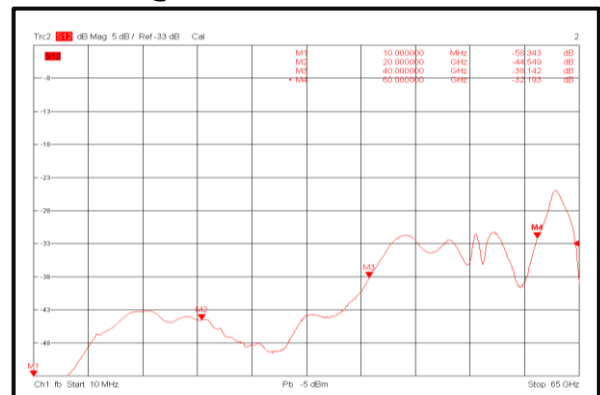
### Input VSWR @-45°C



### Output VSWR @-45°C



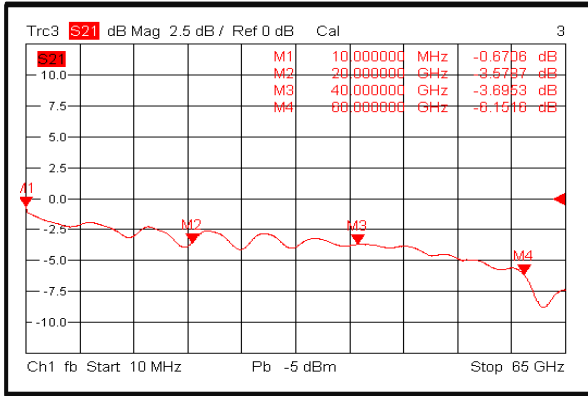
### Isolation @-45°C



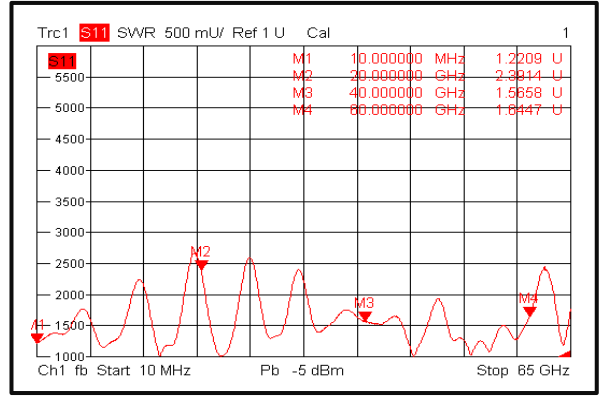
Reflective Coaxial Single Pole Double Throw Switch 0.001 - 60GHz



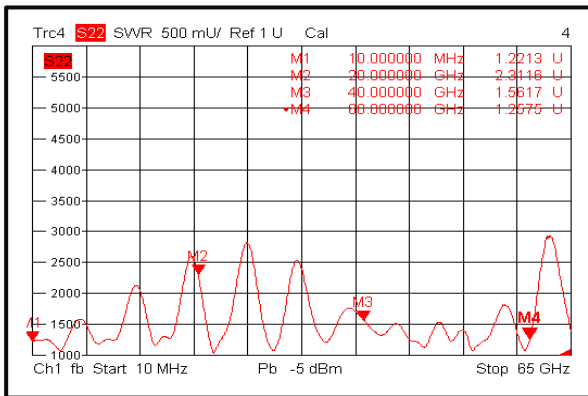
**Insertion Loss @+85°C**



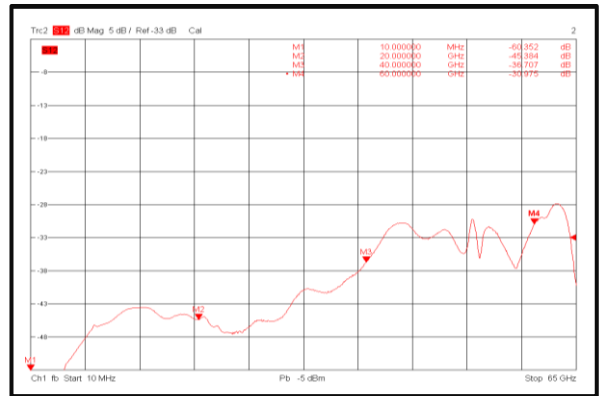
**Input VSWR @+85°C**



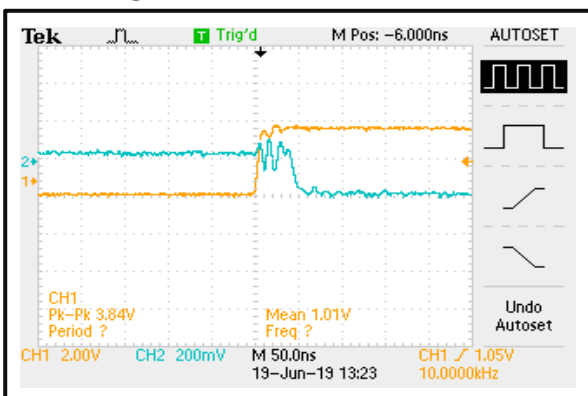
**Output VSWR @+85°C**



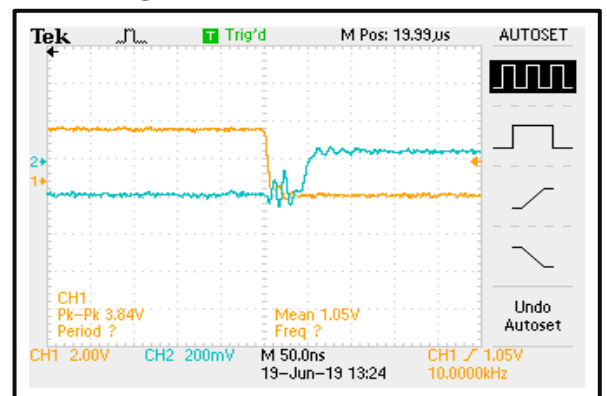
**Isolation @+85°C**



**Switching Speed**



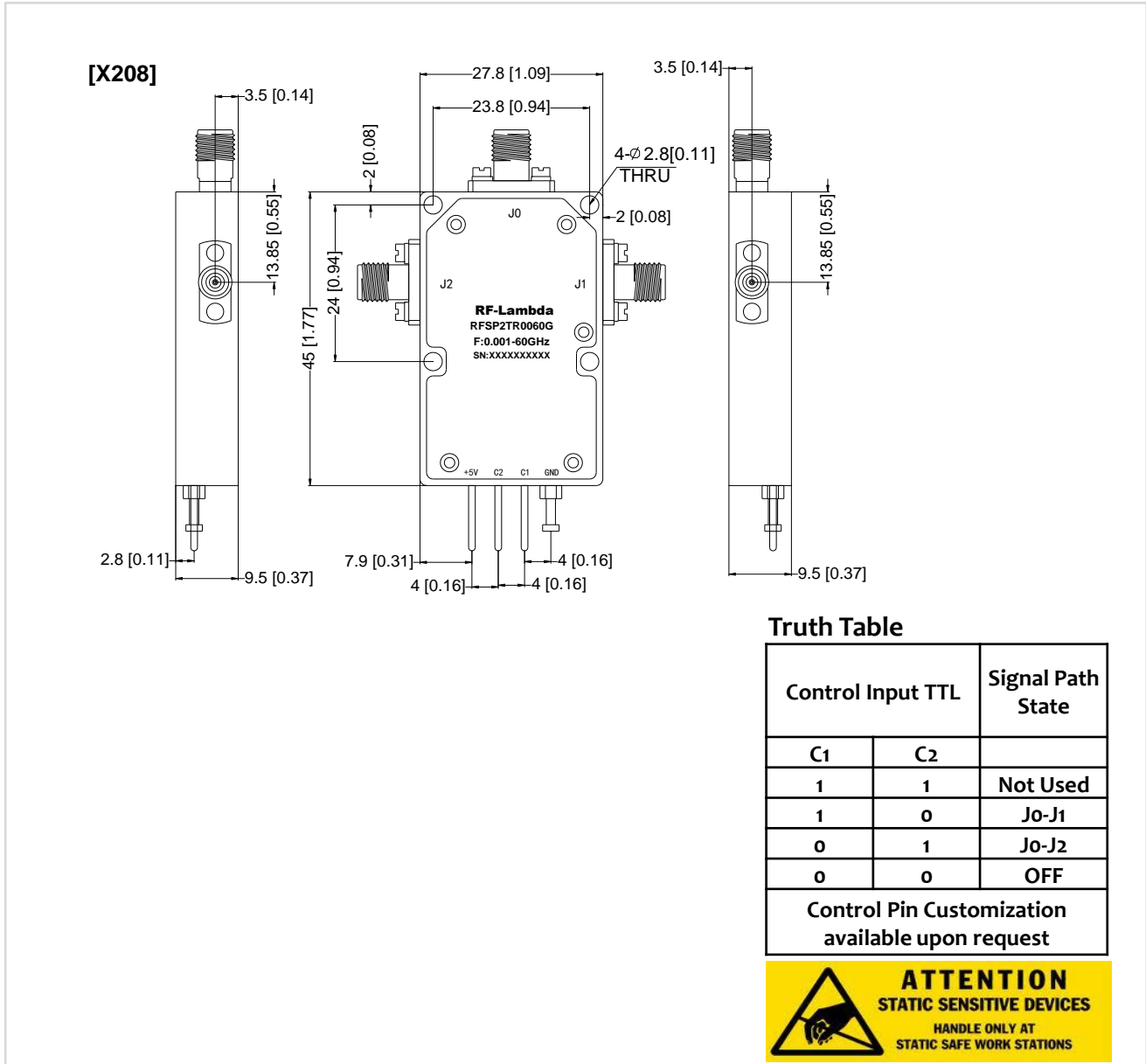
**Switching Speed**





**Outline Drawing:**

All Dimensions in mm [inches]



**Truth Table**

Control Input TTL		Signal Path State
C1	C2	
1	1	Not Used
1	0	Jo-J1
0	1	Jo-J2
0	0	OFF
Control Pin Customization available upon request		



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**Reflective Coaxial Single Pole Double Throw Switch 0.001 - 60GHz**