



Reflective Coaxial SP4T Switch 0.5 - 4GHz



Features

- Wide Band Operation 0.5-4GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Customization available upon request

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

Description	PN: RFSP4TR0004G			
	SP4T Reflective Switch			
	Low Power Cold Switching			
Parameter	Min	Typ	Max	Units
Frequency Range	0.5-4			GHz
Insertion Loss		1	1.5	dB
Insertion Loss Temperature Coefficient		0.003		dB/°C
Isolation	75	85		dB
Input VSWR		1.3	1.5	: 1
Output VSWR		1.3	1.5	: 1
RF Input power (CW)			30	dBm
DC Power Dissipation		1.5		W
0.1dB Compression $P_{0.1dB}$ ($P_{0.1dB}$)		30		dBm
IIP3		55		dBm
Switching Speed			100	ns
Weight	1.06			ounces
Impedance	50			Ω
Bias Current (+5V / -5V)	160/50			mA
Input / Output Connectors	SMA-Female			
Finish	Gold Plated			
Material	Aluminum			
Sealing	Hermetically Sealed (Optional)			

Reflective Coaxial Single Pole Four Throw Switch 0.5 - 4GHz



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

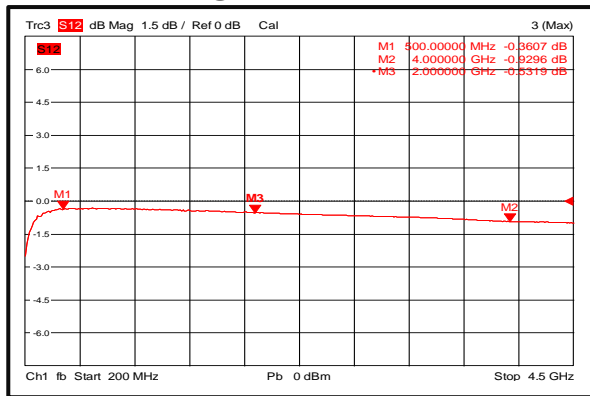
Part No.	ECCN	Description
RFSP4TR0004G	EAR99	SP4T 0.5-4GHz PIN Diode Switch

Environmental Specifications and Test Standards

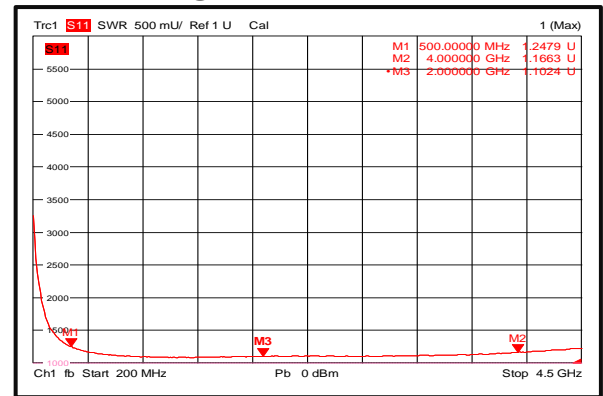
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 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

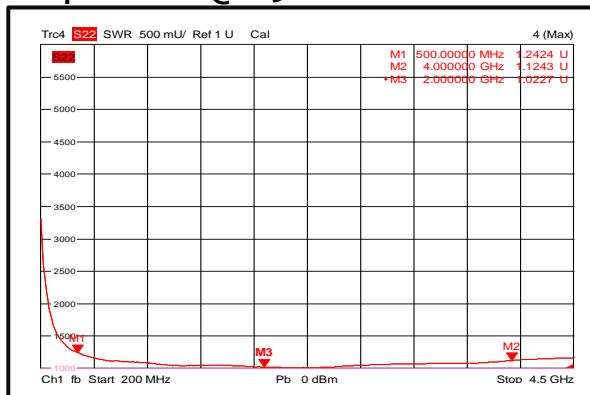
Insertion Loss @+25°C



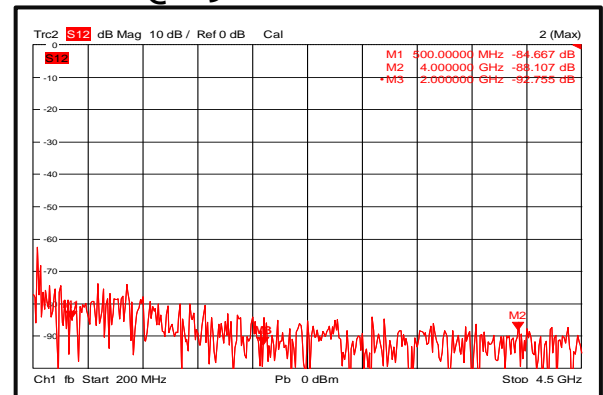
Input VSWR @+25°C



Output VSWR @+25°C



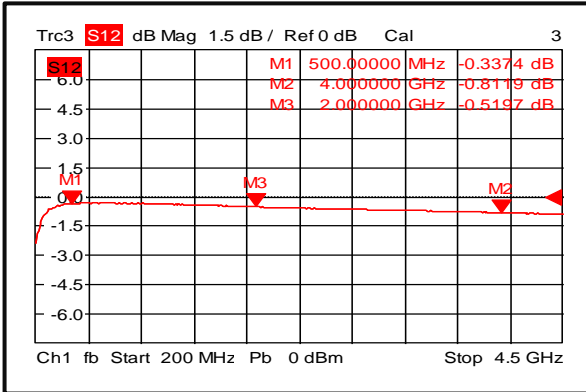
Isolation @+25°C



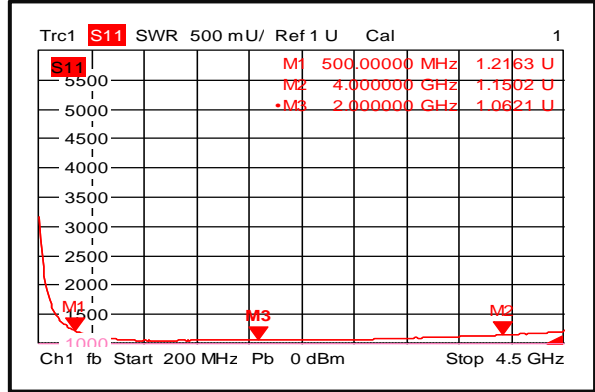
Reflective Coaxial Single Pole Four Throw Switch 0.5 - 4GHz



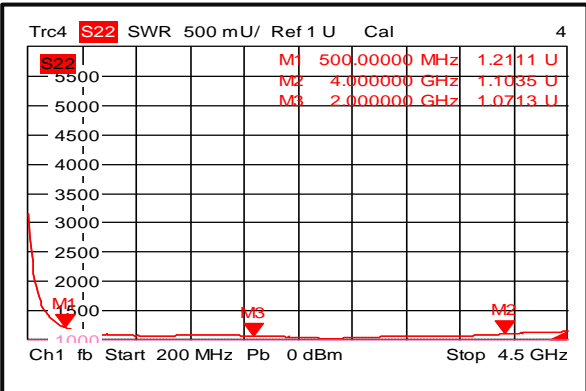
Insertion Loss @-45°C



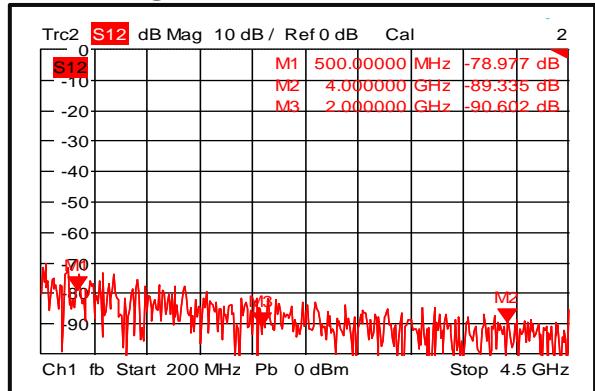
Input VSWR @-45°C



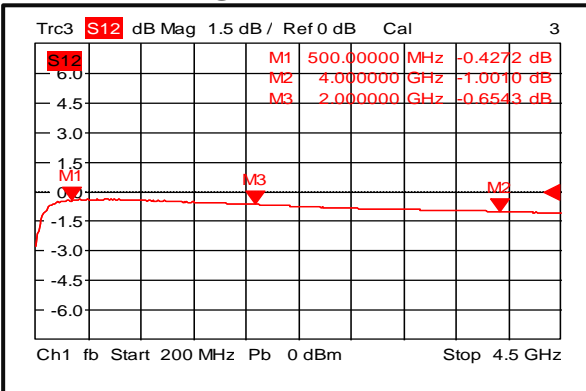
Output VSWR @-45°C



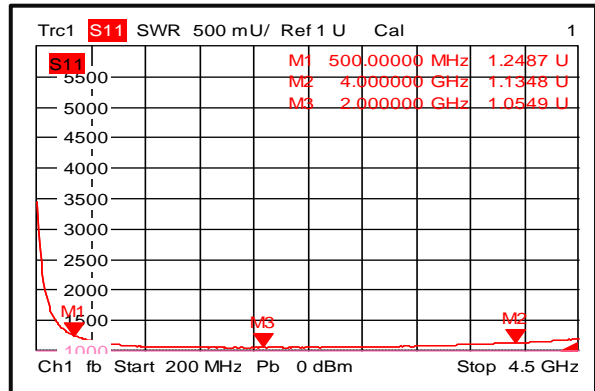
Isolation @-45°C



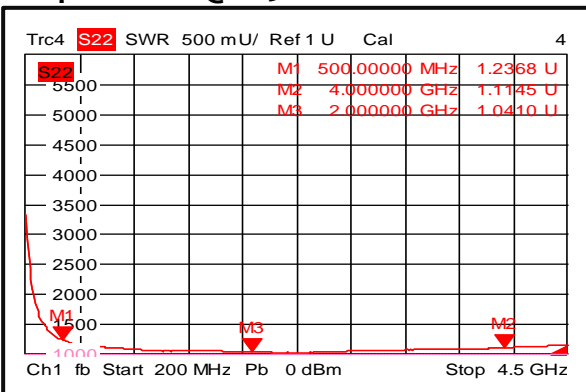
Insertion Loss @+85°C



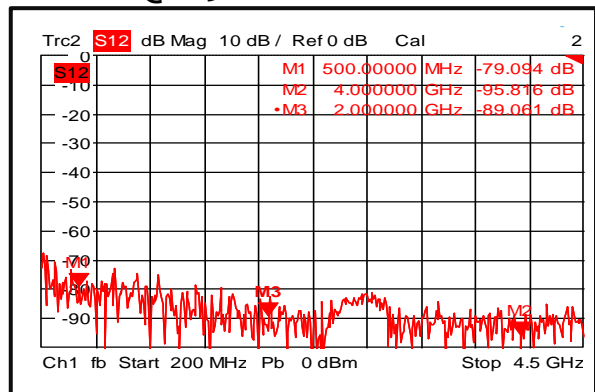
Input VSWR @+85°C



Output VSWR @+85°C

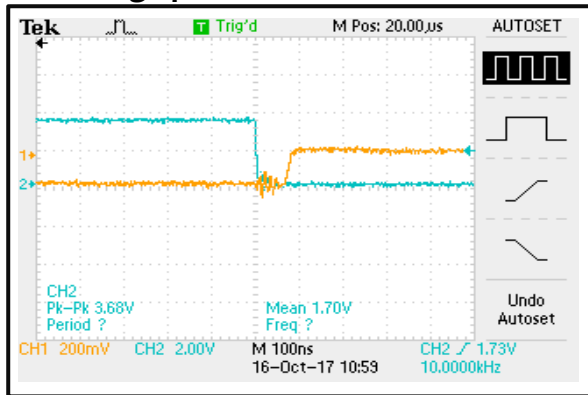


Isolation @+85°C

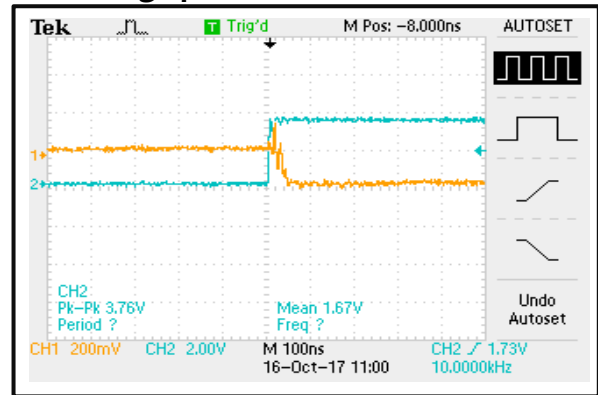




Switching Speed



Switching Speed



Outline Drawing:

All Dimensions in mm [inches]

RF-Lambda
RFSP4TR0004G
F:0.5-4GHZ
SN:XXXXXXXXXX

Truth Table

Control Input TTL				Signal Path State
C4	C3	C2	C1	
1	1	1	1	OFF
1	1	1	0	Jo-J1
1	1	0	1	Jo-J2
1	0	1	1	Jo-J3
0	1	1	1	Jo-J4
0	0	0	0	Not used

Control Pin Customization available upon request

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