Absorptive Coaxial SP16T Switch
0.5 - 43.5GHz

Features

- Ultra Wide Band Operation 0.5-43.5GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test & Measurement

Electrical Specifications, TA = +25 ℃, Vdd = +5V/-5V, TTL = 0 / +5V

Description	PN: RFSP16TA5M43G									
	SP16T Absorptive Switch									
	Low Power Cold Switching									
Parameters	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.5		8	8		26.5	26.5		43.5	GHz
Insertion Loss		4.2	5.5		8	10.0		10.5	13.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Isolation	60	70		50	60		45	50		dB
Input VSWR		2.5	3		2.5	3		2.5	3	:1
Output VSWR		2.5	3		2.5	3		2.5	3	:1
RF Input Power (CW)			23			23			23	dBm
DC Power Dissipation		2.5			2.5			2.5		W
0.1dB Compression Point (P0.1dB)		23			23			23		dBm
IIP3		55			55			50		dBm
Switching Speed		60	100		60	100		60	100	ns
Weight	5.7 Max.									ounces
Impedance	50									Ω
Bias Current (+5V/-5V)	380/100 Max.									mA
Input / Output Connectors	2.92mm - Female									
Finish	Nickel Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									

Absorptive Coaxial Single Pole Sixteen Throw Switch 0.5 - 43.5GHz

Absolute Maximum Ratings

Biasing	+5V±10%/-5V±10%

Ordering Information

Part No.	ECCN	Description
RFSP16TA5M43G	EAR99	SP16T 0.5-43.5PIN Diode Switch

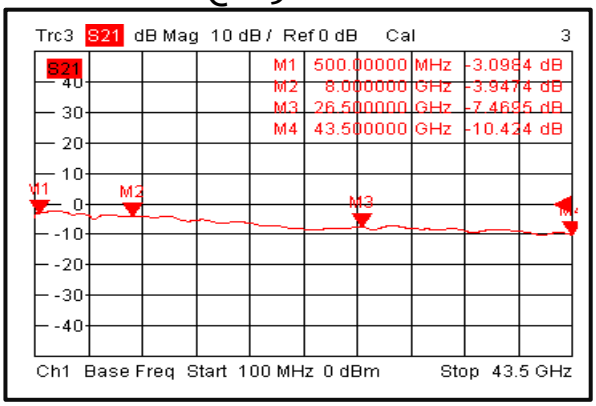
Note: TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

Environmental Specifications and Test Standards

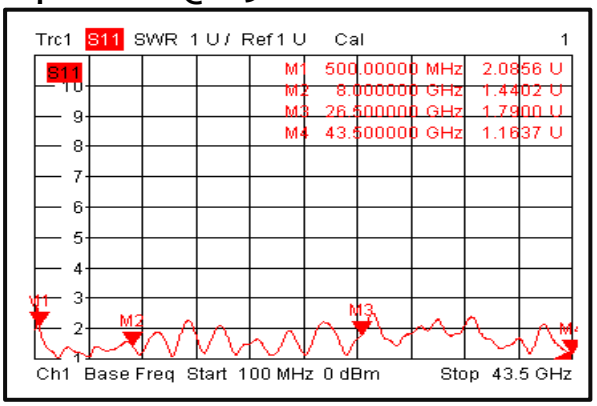
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45℃~+85℃ (Case Temperature)
Storage Temperature		-50℃~+125℃
Thermal Shock		1 Hour@ -45℃ → 1 Hour @ +85℃ (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85℃ 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

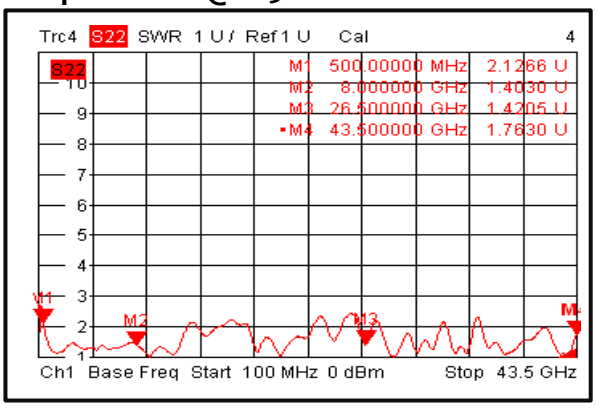
Insertion Loss @+25℃



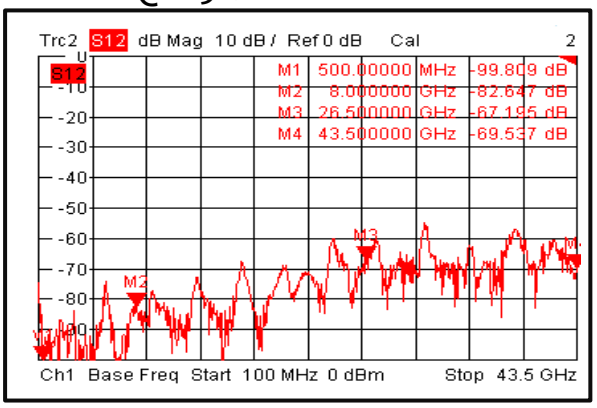
Input VSWR @+25℃



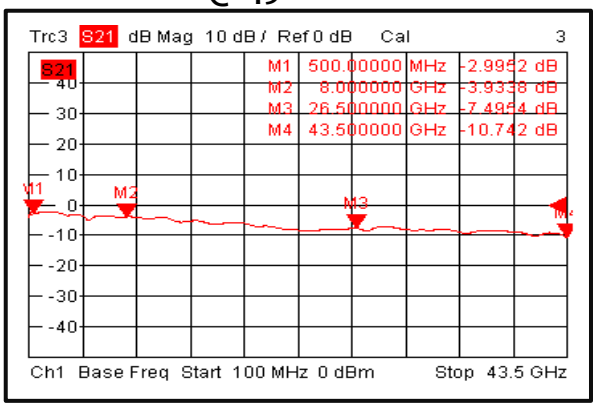
Output VSWR @+25℃



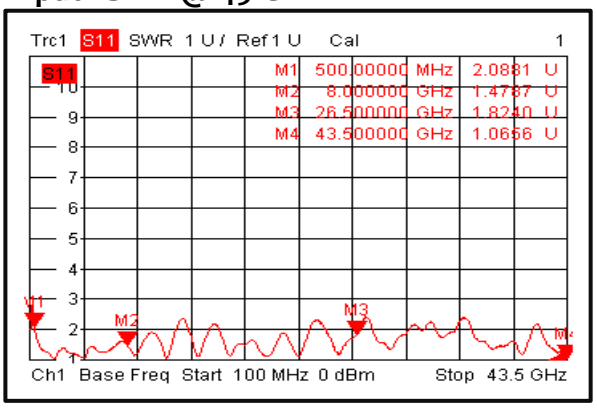
Isolation @+25℃



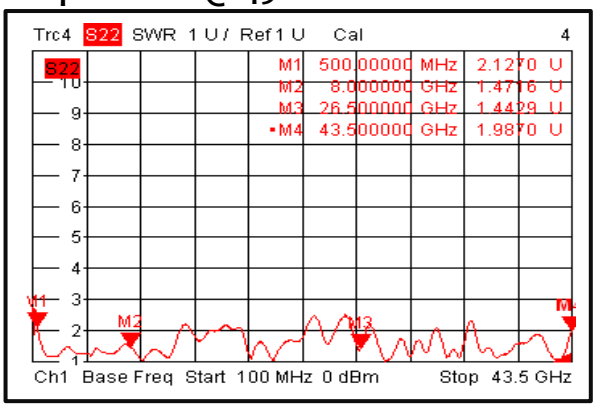
Insertion Loss @-45℃



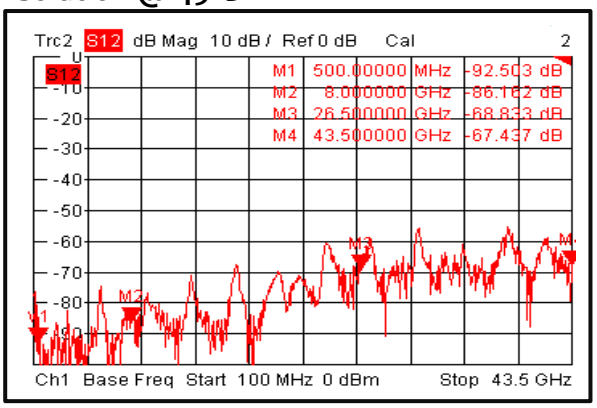
Input VSWR @-45℃



Output VSWR @-45℃



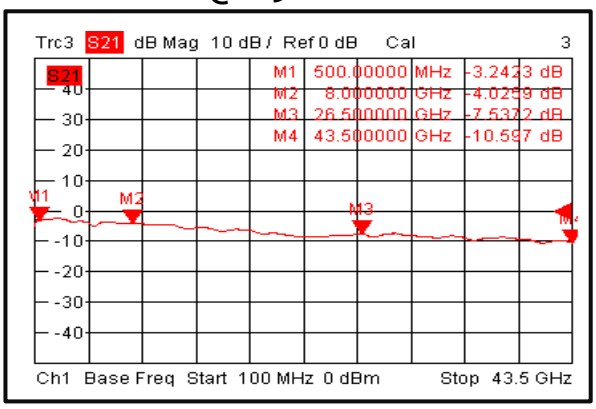
Isolation @-45℃



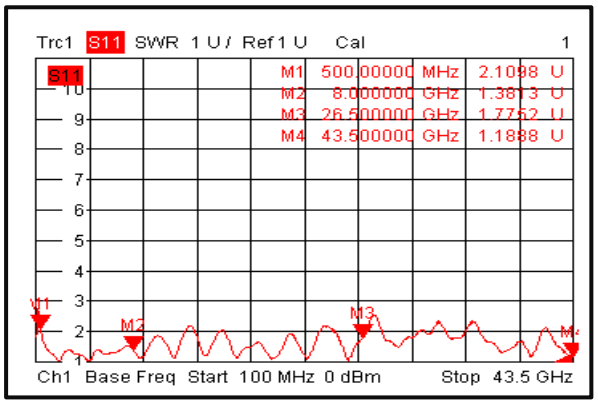
Absorptive Coaxial Single Pole Sixteen Throw Switch 0.5 - 43.5GHz

Absorptive Coaxial Single Pole Sixteen Throw Switch 0.5 - 43.5GHz

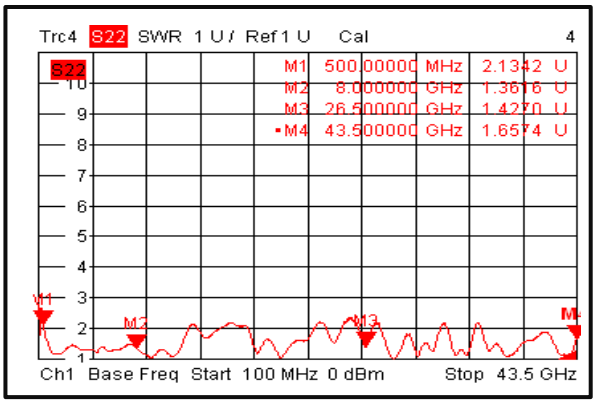
Insertion Loss @+85℃



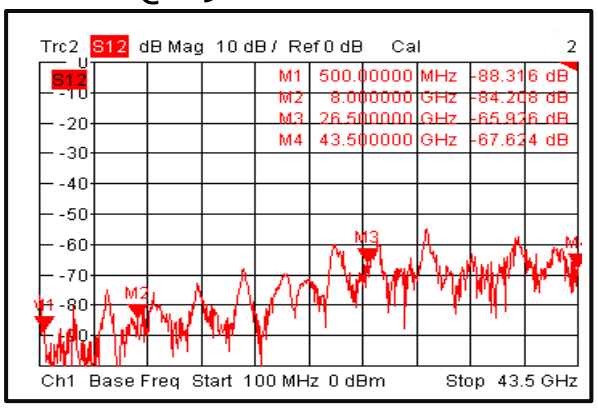
Input VSWR @+85℃



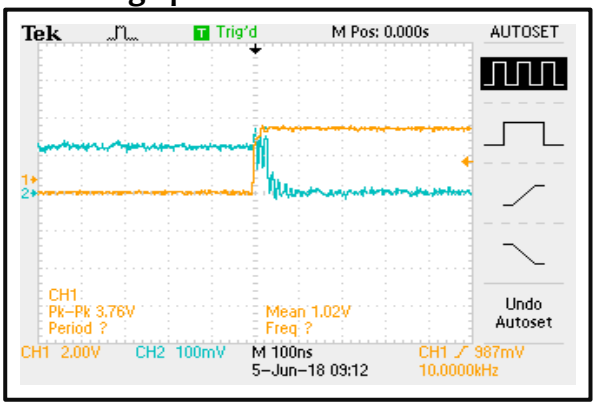
Output VSWR @+85℃



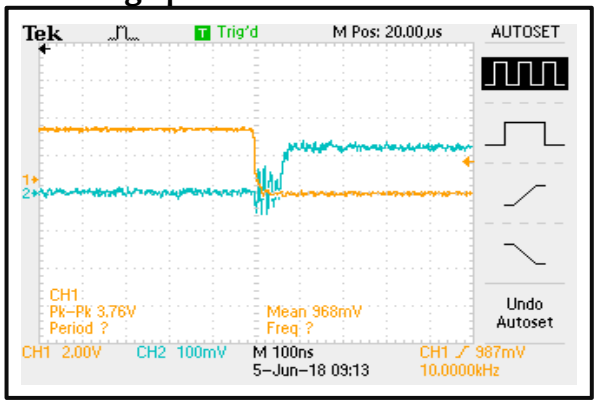
Isolation @+85℃



Switching Speed



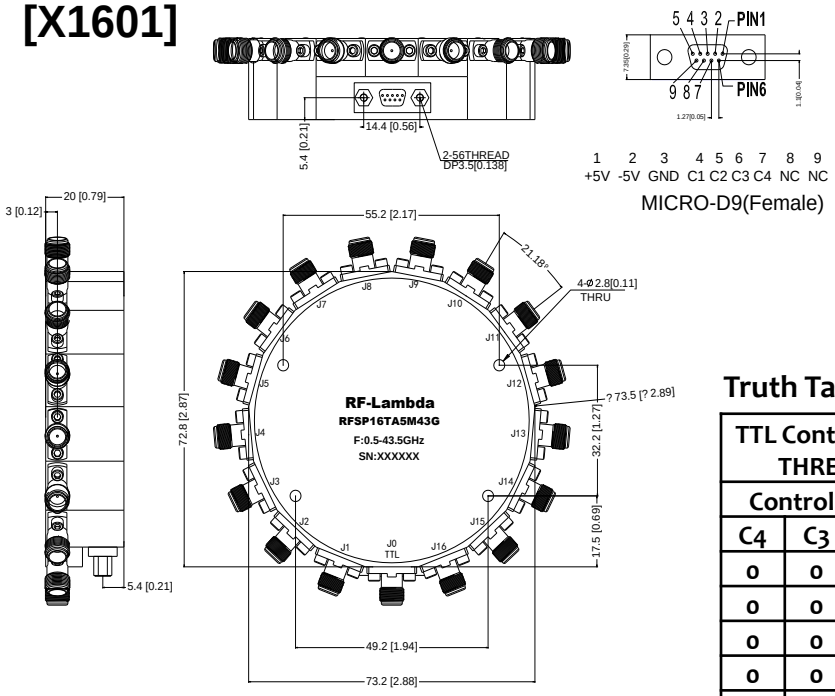
Switching Speed



Outline Drawing:

All Dimensions in mm [inches]

[X1601]



Truth Table

TTL Control Voltage THRESHOLD				Low(0)=0~0.8V High(1)=2.8~5V
Control Input TTL				Signal Path State
C4	C3	C2	C1	
0	0	0	0	J0-J1
0	0	0	1	J0-J2
0	0	1	0	J0-J3
0	0	1	1	J0-J4
0	1	0	0	J0-J5
0	1	0	1	J0-J6
0	1	1	0	J0-J7
0	1	1	1	J0-J8
1	0	0	0	J0-J9
1	0	0	1	J0-J10
1	0	1	0	J0-J11
1	0	1	1	J0-J12
1	1	0	0	J0-J13
1	1	0	1	J0-J14
1	1	1	0	J0-J15
1	1	1	1	J0-J16
Control Pin Customization Available Upon Request				

Important Notice

Absorptive Coaxial Single Pole Sixteen Throw Switch 0.5 - 43.5GHz