

Absorptive Coaxial SP2T Switch 0.02 - 18GHz



Features

- Ultra Wide Band Operation 0.02-18GHz
- 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: RFSP2TA0018GA									
	SP2T Absorptive Switch									
	Low Power Cold Switching									
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.02~6			6~12			12~18			GHz
Insertion Loss		1.5	2.0		3.5	3.8		4.2	4.5	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Isolation	60	75		60	75		60	67		dB
Input VSWR		1.4	1.8		1.5	1.6		1.5	1.8	:1
Output VSWR		1.4	1.8		1.5	1.6		1.5	1.8	:1
RF Input Power (CW)			30			30			30	dBm
DC Power Dissipation		0.65			0.65			0.65		W
0.1dB Compression Point (Po.1dB)		30			30			30		dBm
IIP3		45			43			41		dBm
Switching Speed	100 Typ.250 Max.									ns
Weight	0.75 Max.									ounces
Impedance	50									Ω
Bias Current (+5V)	130 Max.									mA
Input / Output Connectors	SMA-Female									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									

Absolute Maximum Ratings

Biasing	+5V±10%
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Note: TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

Ordering Information

Part No.	Description
RFSP2TA0018GA	SP2T 0.02-18GHz PIN Diode Switch

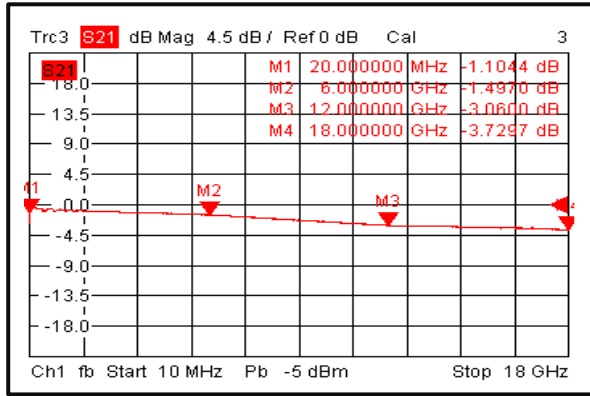
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C~+85°C (Case Temperature)
Storage Temperature	-50°C~+105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High 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 (For Hermetically Sealed Units)

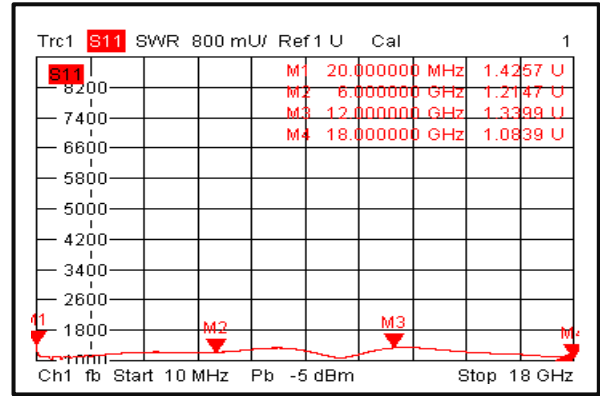
Absorptive Coaxial Single Pole Double Throw Switch 0.02 - 18GHz

Typical Performance Plots

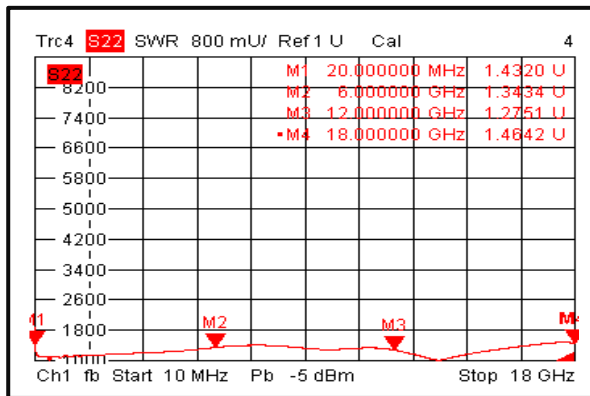
Insertion Loss @+25°C



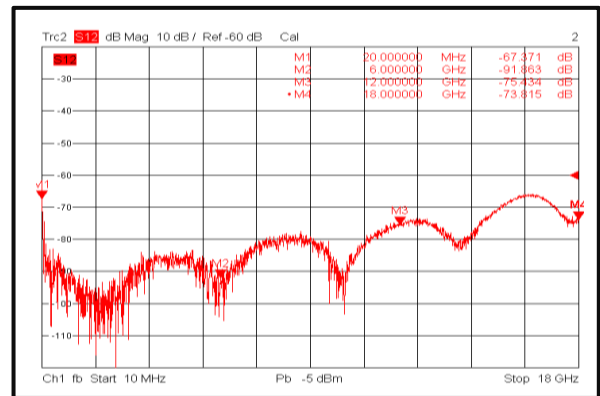
Input VSWR @+25°C



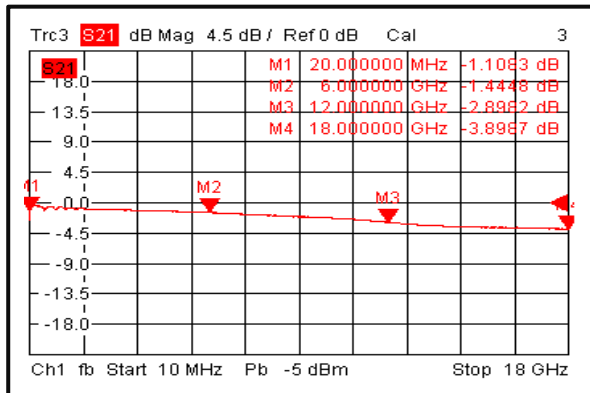
Output VSWR @+25°C



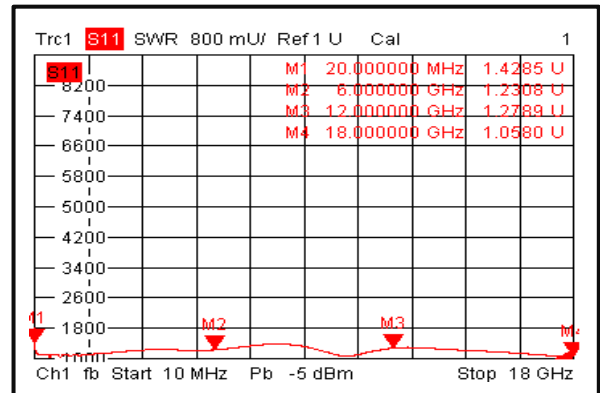
Isolation @+25°C



Insertion Loss @-40°C

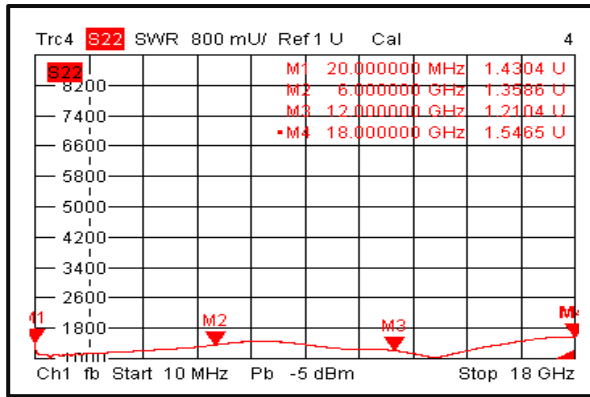


Input VSWR @-40°C

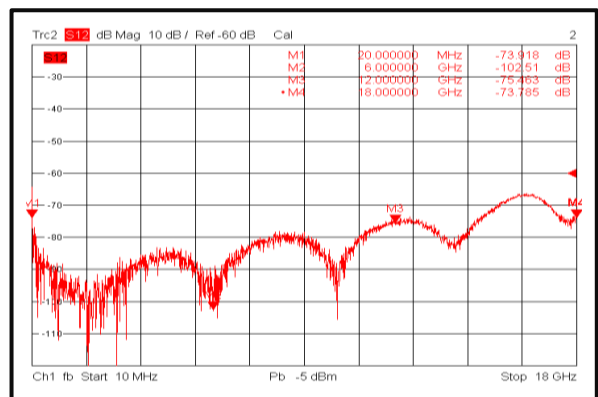


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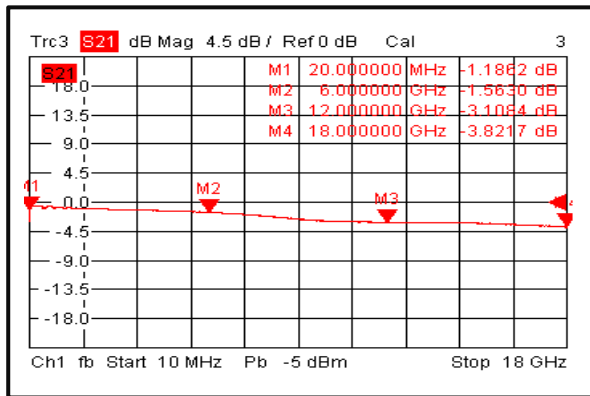
Output VSWR @-40°C



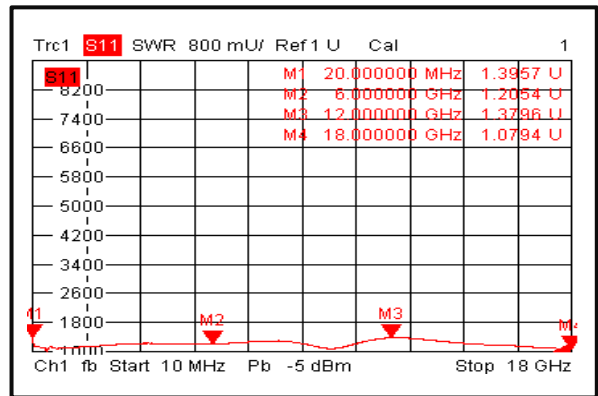
Isolation @-40°C



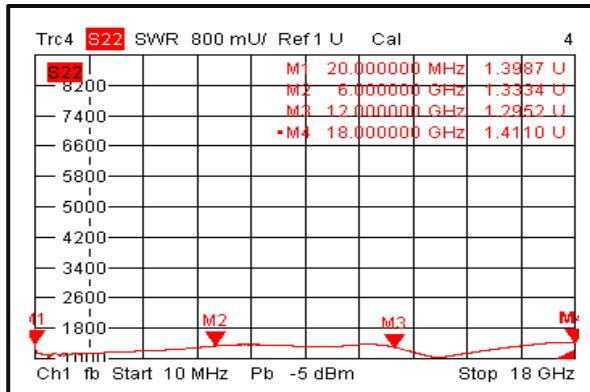
Insertion Loss @+85°C



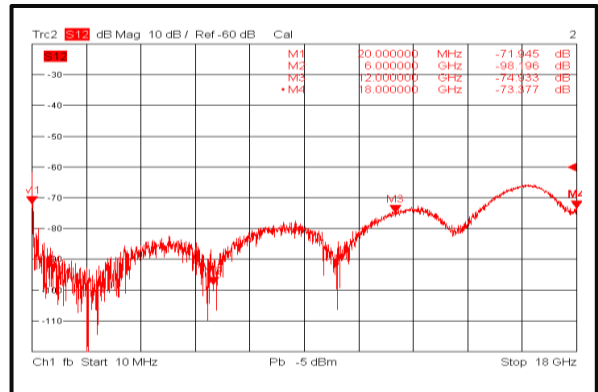
Input VSWR @+85°C



Output VSWR @+85°C

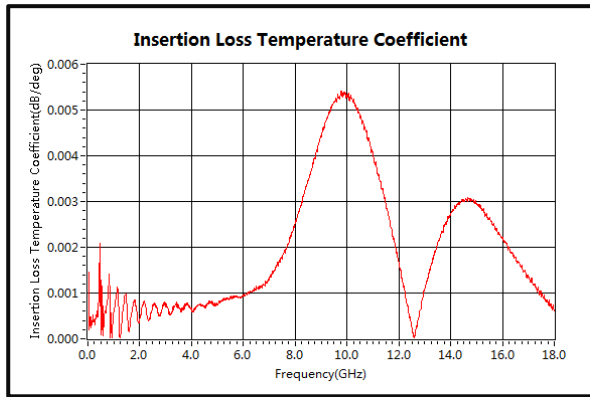


Isolation @+85°C

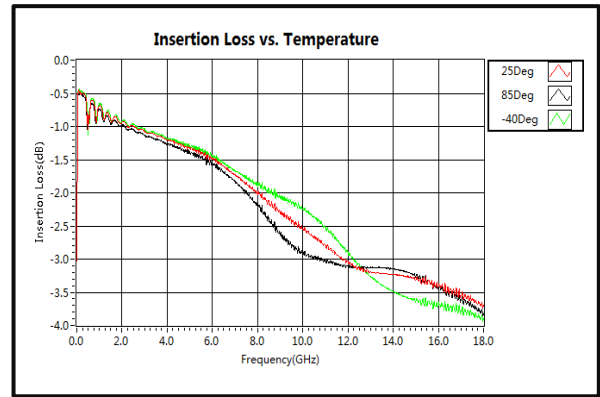


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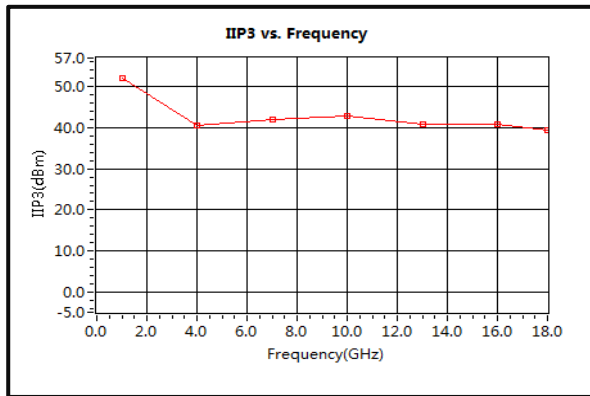
Insertion Loss Temperature Coefficient



Insertion Loss vs. Temperature



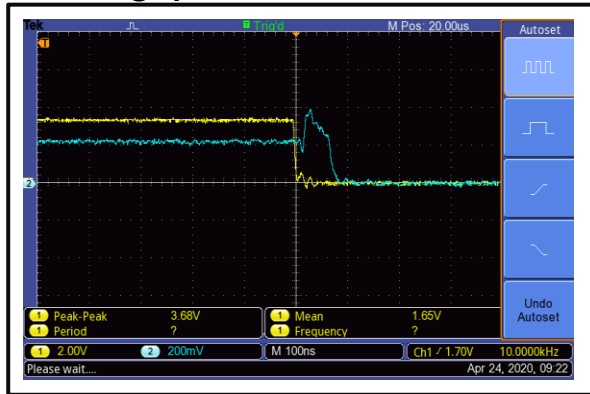
IIP3



Switching Speed



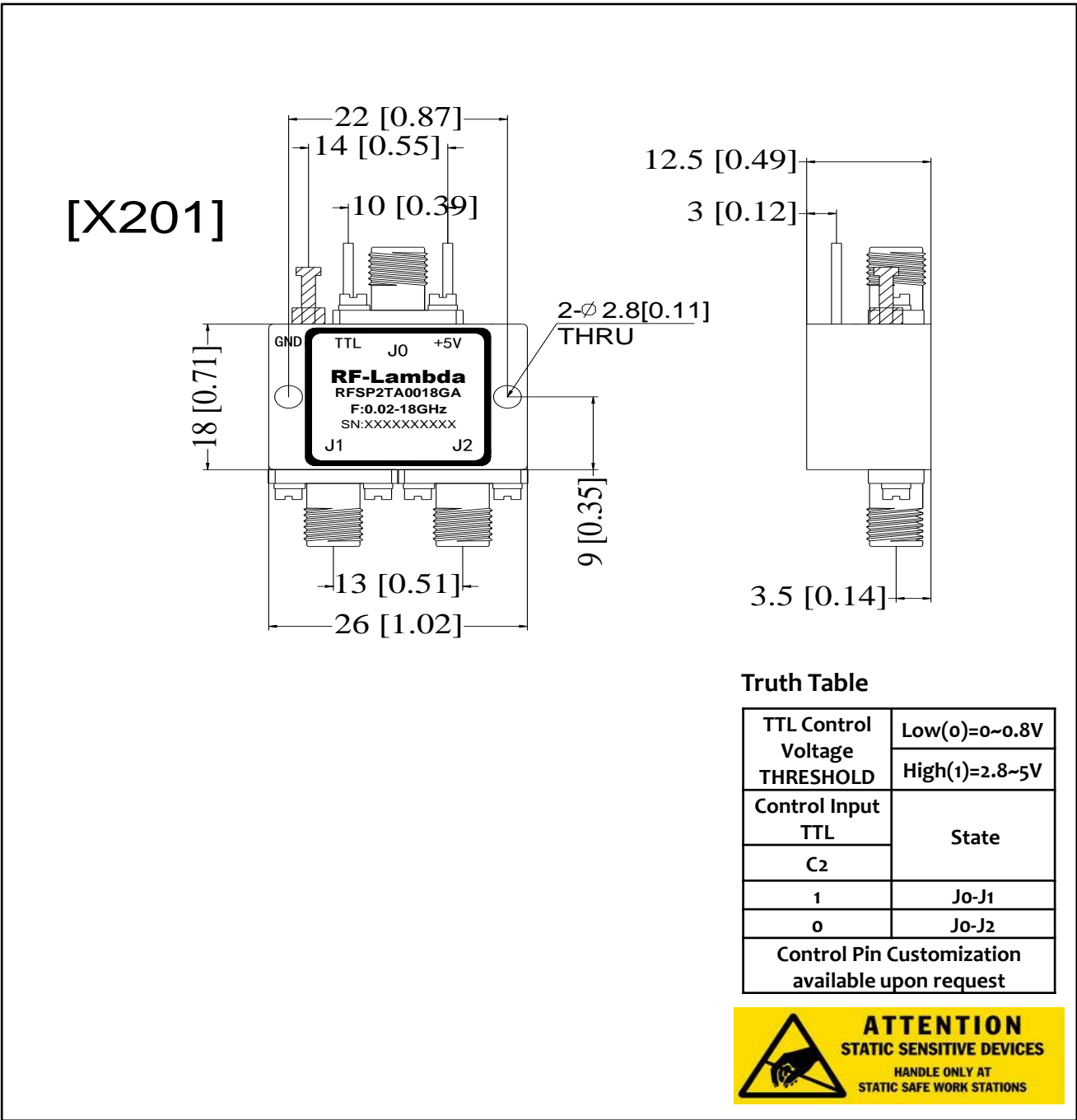
Switching Speed



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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	State
C2	
1	J0-J1
0	J0-J2
Control Pin Customization available upon request	



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