

## Absorptive Coaxial SP8T 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 and Aerospace
- Test and Measurement

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

Description	PN: RFSP8TA5M43GA									
	SP8T Absorptive Switch									
	Low Power Cold Switching									
Parameter	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		4.5	5.0		6.8	7.5		8.0	9.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Isolation (Adjacent channels)	60	70		50	58		48	55		dB
Isolation (Between any channels)	60	70		50	58		42	50		dB
Input VSWR		2	3		1.9	3		1.8	2.5	:1
Output VSWR		2	3		1.9	3		1.8	2.5	:1
RF Input Power			23			23			23	dBm
DC Power Dissipation		0.8			0.8			0.8		W
0.1dB Compression Point( Po.1dB )		23			23			23		dBm
IIP3		42			43			36		dBm
Switching Speed	50 Typ. 100 Max.									ns
Weight	2.5 Max.									ounces
Impedance	50									Ω
Bias Current (+5V/-5V)	200/50 Max.									mA
Input / Output Connectors	2.92mm - Female									
Interface and Control Connector	MICRO-D9 (Female)									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									

**Absolute Maximum Ratings**

Biasing Voltage	+5V±10%/-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
RFSP8TA5M43GA	SP8T 0.5-43.5PIN Diode Switch

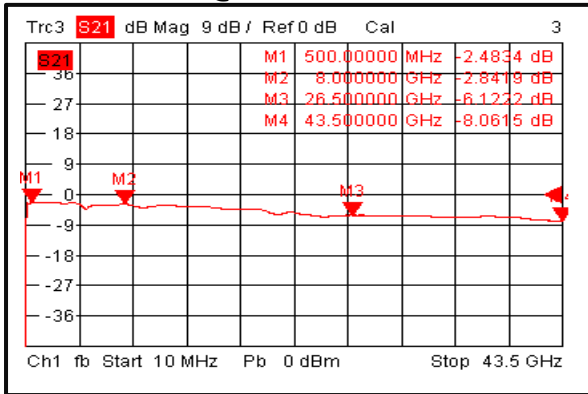
**Environmental Specifications and Test Standards**

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)

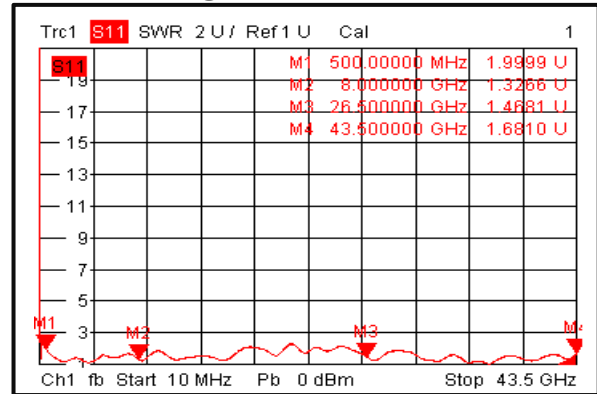
**Absorptive Coaxial Single Pole Eight Throw Switch 0.5 - 43.5GHz**

Typical Performance Plots

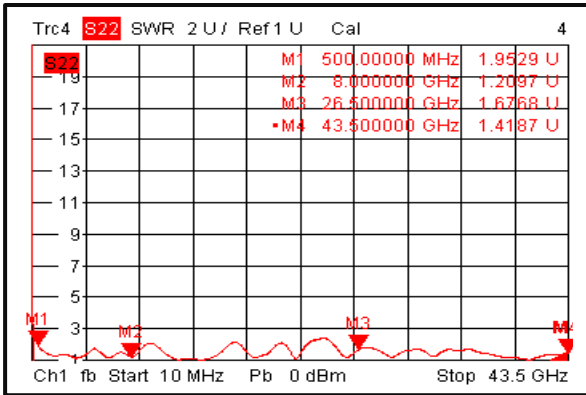
**Insertion Loss @+25°C**



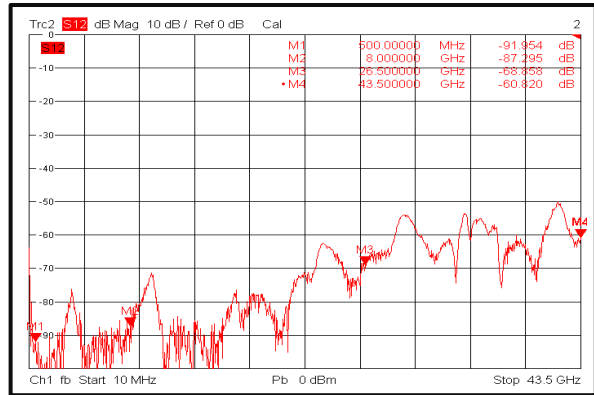
**Input VSWR @+25°C**



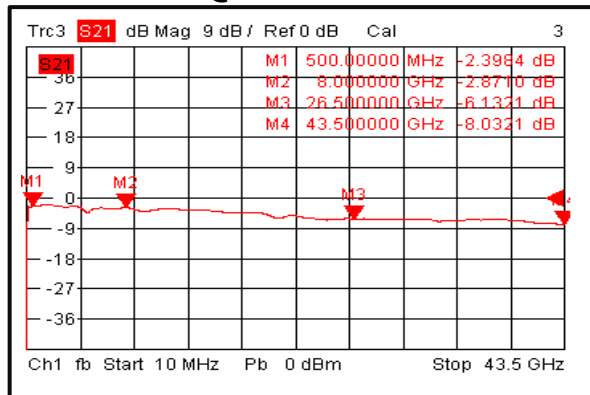
**Output VSWR @+25°C**



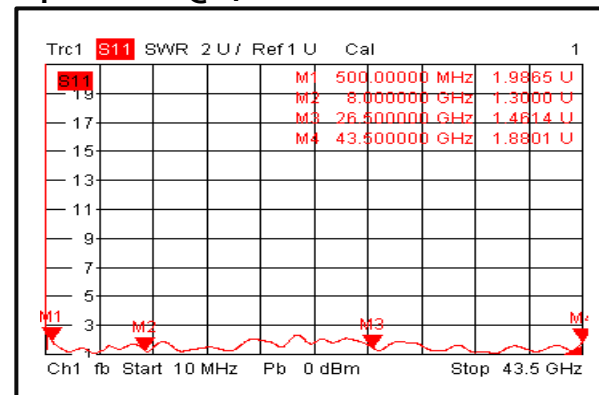
**Isolation @+25°C**



**Insertion Loss @-40°C**

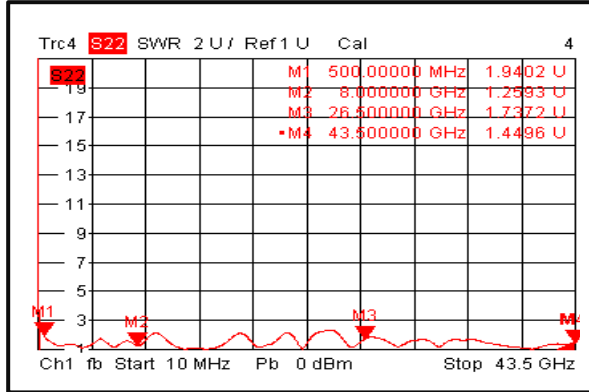


**Input VSWR @-40°C**

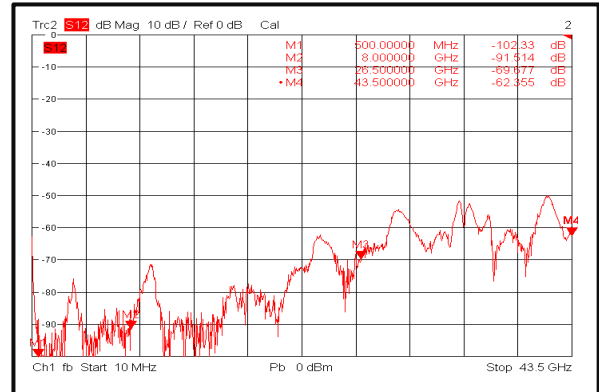


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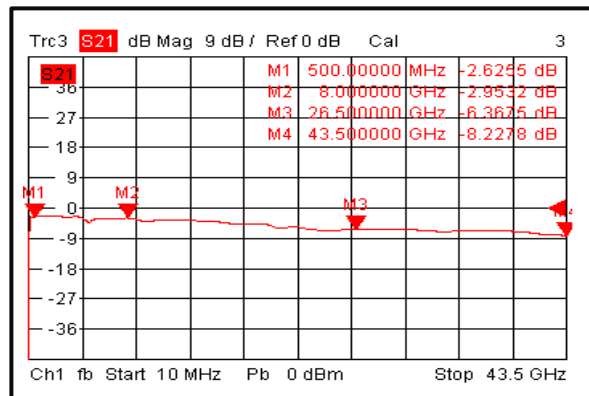
**Output VSWR @-40°C**



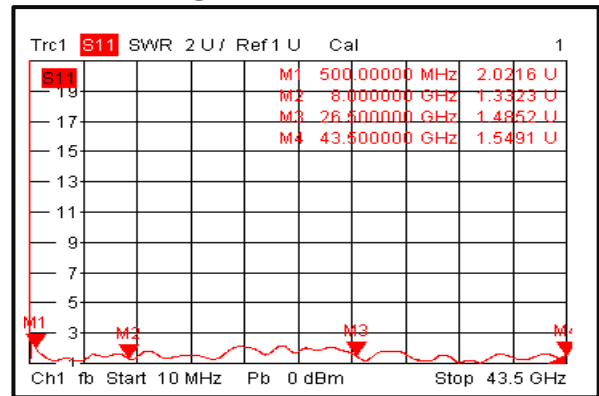
**Isolation @-40°C**



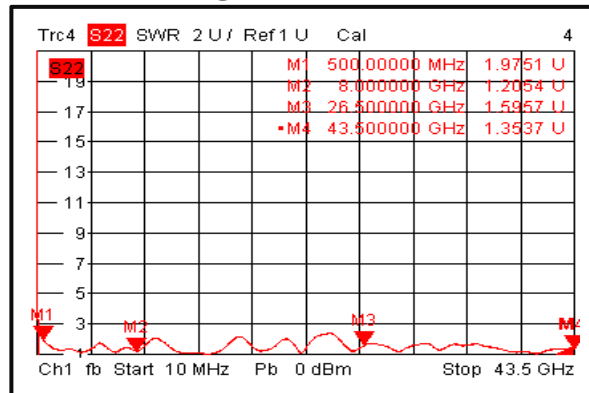
**Insertion Loss @+85°C**



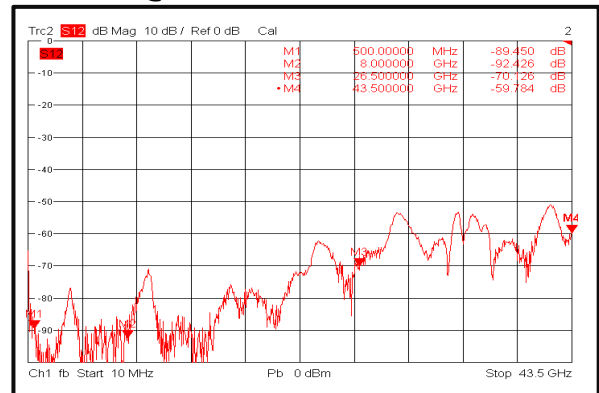
**Input VSWR @+85°C**



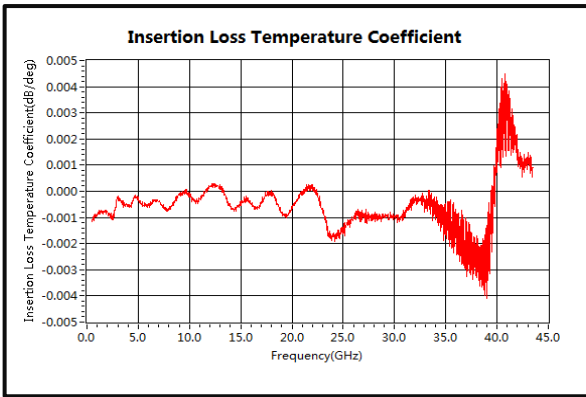
**Output VSWR @+85°C**



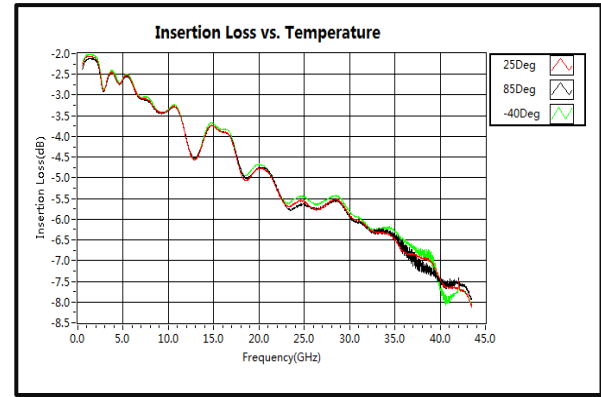
**Isolation @+85°C**



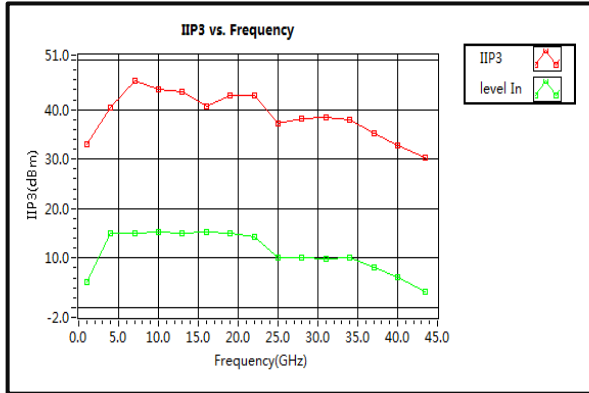
**Insertion Loss Temperature Coefficient**



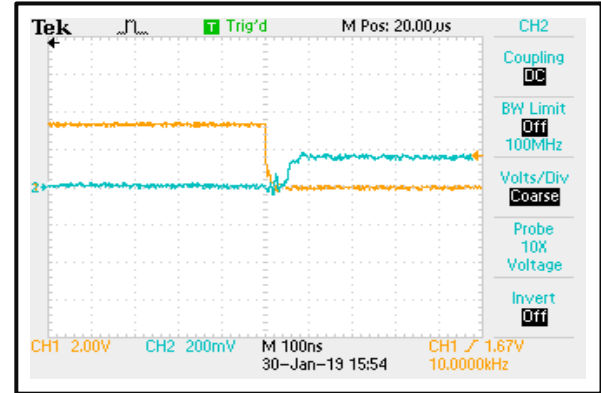
**Insertion Loss vs. Temperature**



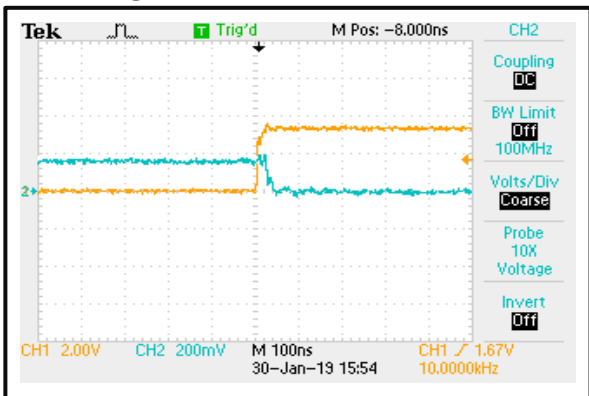
**IIP3**



**Switching Speed**



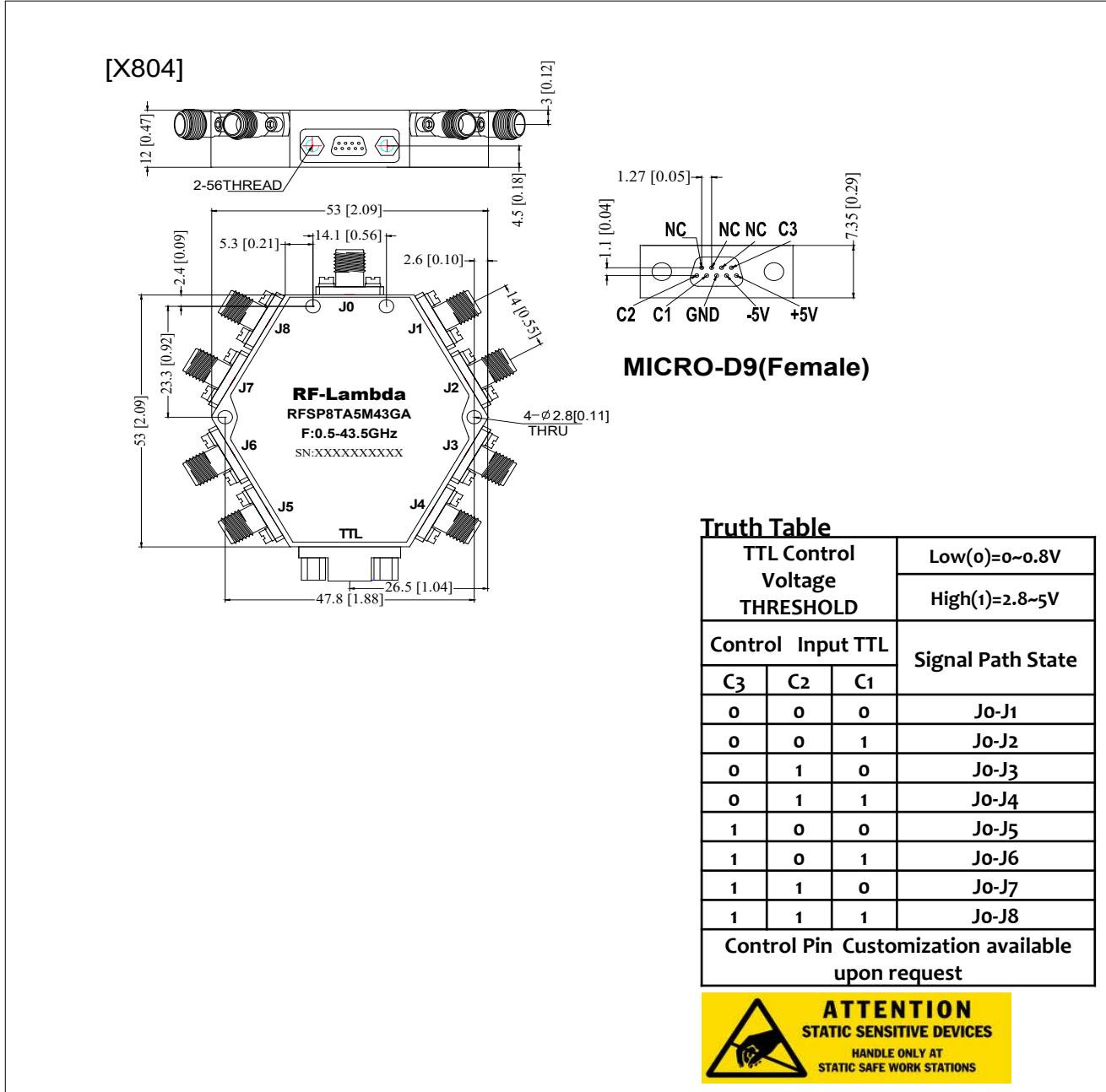
**Switching Speed**



**Absorptive Coaxial Single Pole Throw Switch 0.5 - 43.5GHz**

**Outline Drawing:**

All Dimensions in mm [inches]  
Housing Tolerances  $\pm 0.1$  [0.004]



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