

100W Reflective Coaxial SP8T Switch 0.6GHz-6GHz



Please See Outline Drawings
for Cooling Options.

Features

- TTL compatible driver included
- Fast Switching Speed
- High Power Cold Switching
- Insertion Loss 1.8dB
- Isolation 65dB
- 50 Ohm Matched

Product Description

RFSP8TR5M06GA is a reflective coaxial single pole eight throw switch with a frequency range of 0.6 to 6GHz.

The max power input of this switch is 100 Watts Max. The insertion loss is 1.8dB with a typical isolation of 65dB.

The product features of fast switching speed, low insertion loss and high isolation.

The working temperature of this product is between - 40°C and + 85°C

Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Electrical Specifications(TA = +25°C), Vdd = +5V/-28V, TTL = 0 / +5V

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range	0.6		3	3		6	GHz
Insertion Loss		1.0	1.5		1.8	2.5	dB
Insertion Loss Temperature Coefficient		0.003			0.003		dB/ °C
Isolation	55	65		50	55		dB
Input VSWR		1.5	2.0		1.5	1.8	: 1
Output VSWR		1.5	2.0		1.5	1.8	: 1
**RF Input Power	Type A – Heatsink		20			20	W
	Type B – Air Cooling		100			100	W
DC Power Dissipation		2.5			2.5		W
0.1dB Compression Point (P0.1dB)		50			50		dBm
IIP3		55			58		dBm
Switching Speed			0.25 Typ. 1.0 Max.				us
Bias Current (+5V / -28V)			280/180 Max.				mA
Weight	Type A – Heatsink		0.95 Max.				lbs
	Type B – Air Cooling		3.63 Max.				lbs
Impedance			50				Ω
Input / Output Connectors			SMA-Female(Input) – SMA-Female(Output)				
Package			Epoxy Sealed (Standard)				
			Hermetically Sealed (Optional)				

Absolute Maximum Ratings

Parameter	Rating
Biasing	+5V±10%/-28V±10%

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

**If the device operates in high power state, case temperature must be lower than 40°C.

***Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could be damaged.

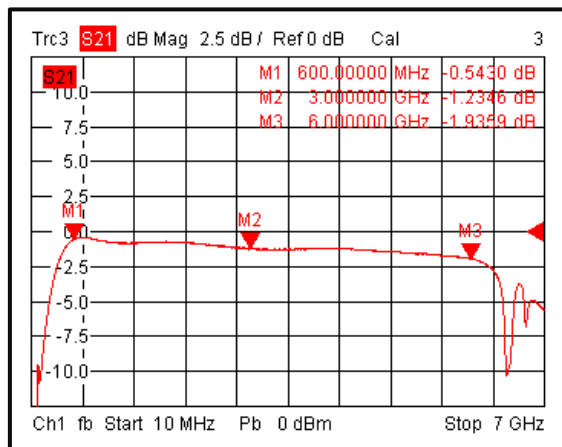
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +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)

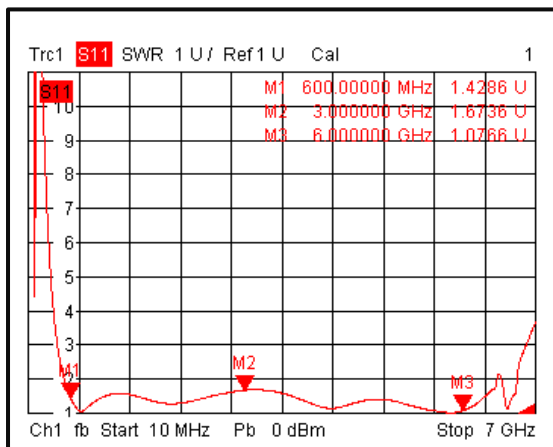
*For vibration testing details please see additional information section.

Typical Performance Plots

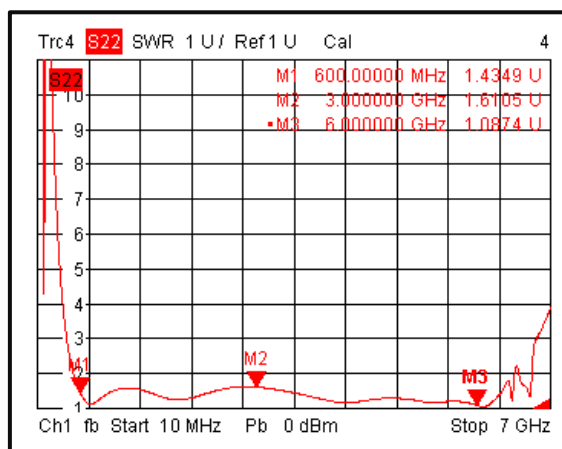
Insertion Loss @+25°C



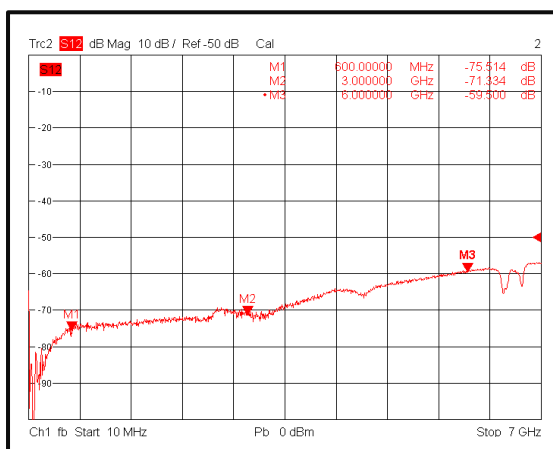
Input VSWR @+25°C



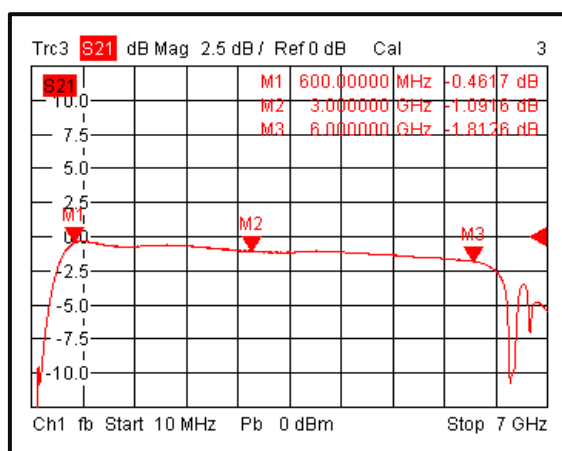
Output VSWR @+25°C



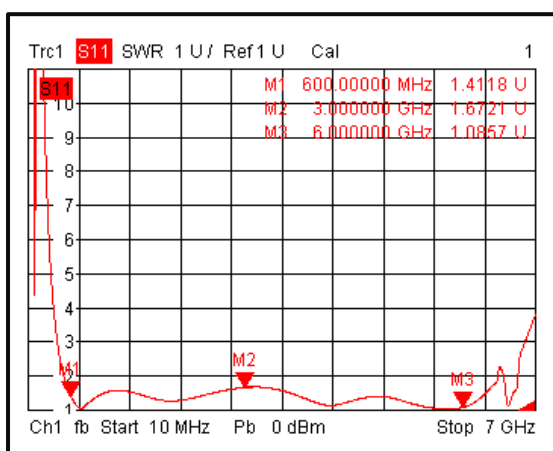
Isolation @+25°C



Insertion Loss @-40°C

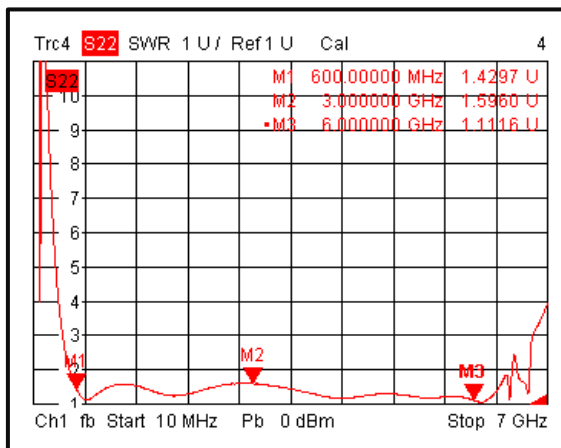


Input VSWR @-40°C

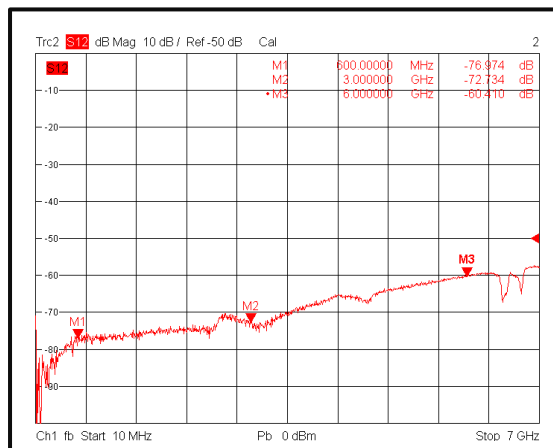


Typical Performance Plots

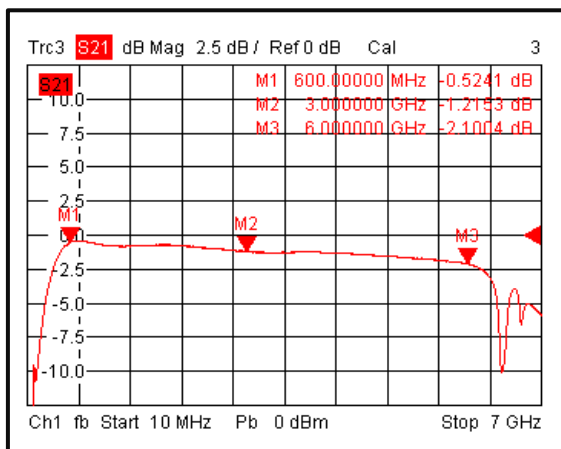
Output VSWR @-40°C



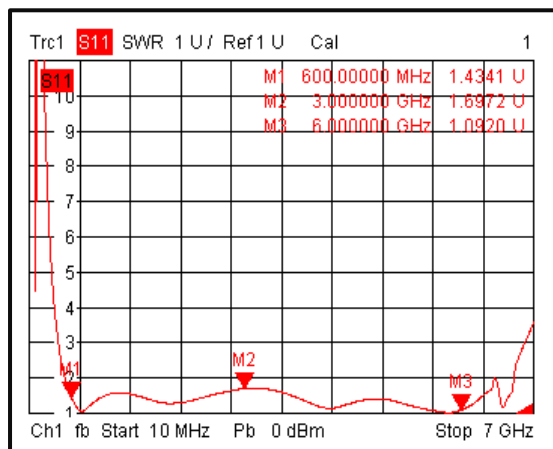
Isolation @-40°C



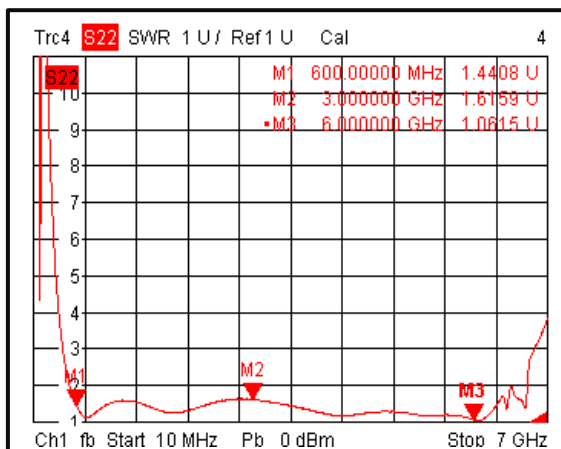
Insertion Loss @+85°C



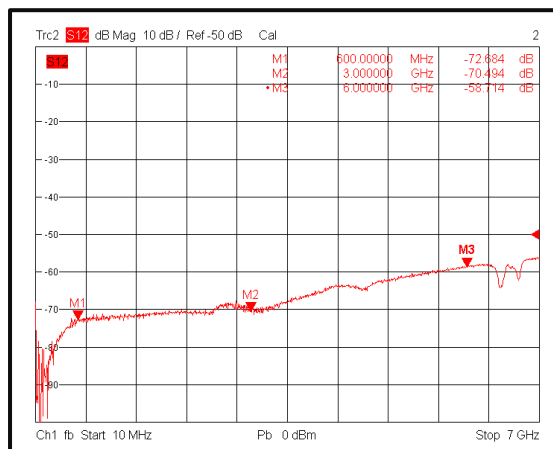
Input VSWR @+85°C



Output VSWR @+85°C

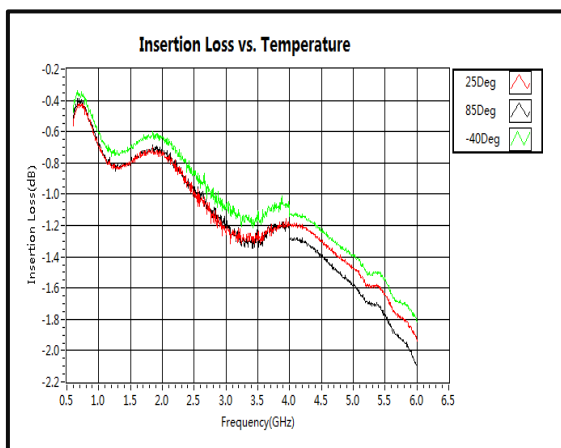


Isolation @+85°C

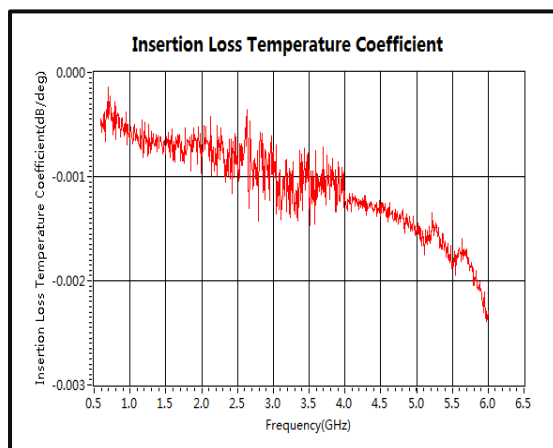


Typical Performance Plots

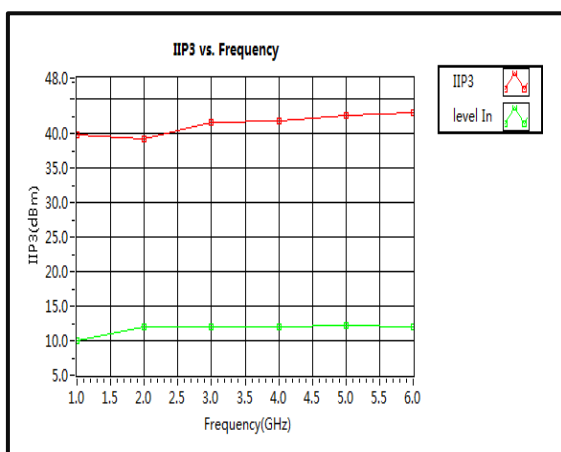
Insertion Loss Temperature Coefficient



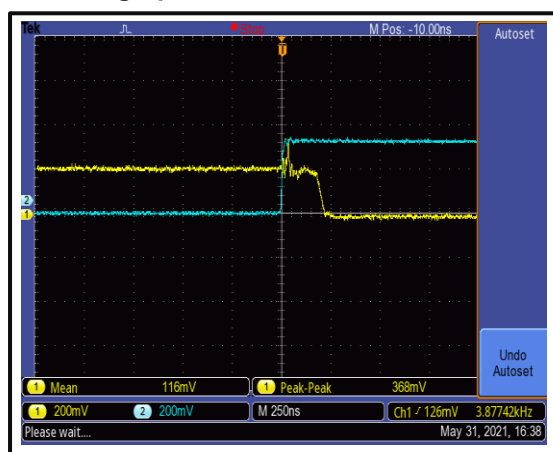
Insertion Loss vs. Temperature



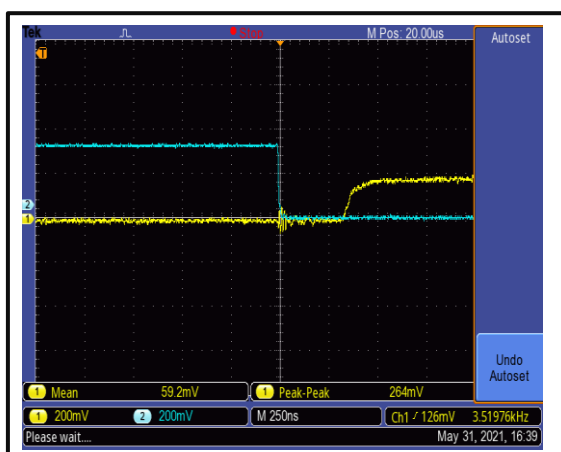
IIP3



Switching Speed



Switching Speed



Type A - Heatsink Option Outline Drawing



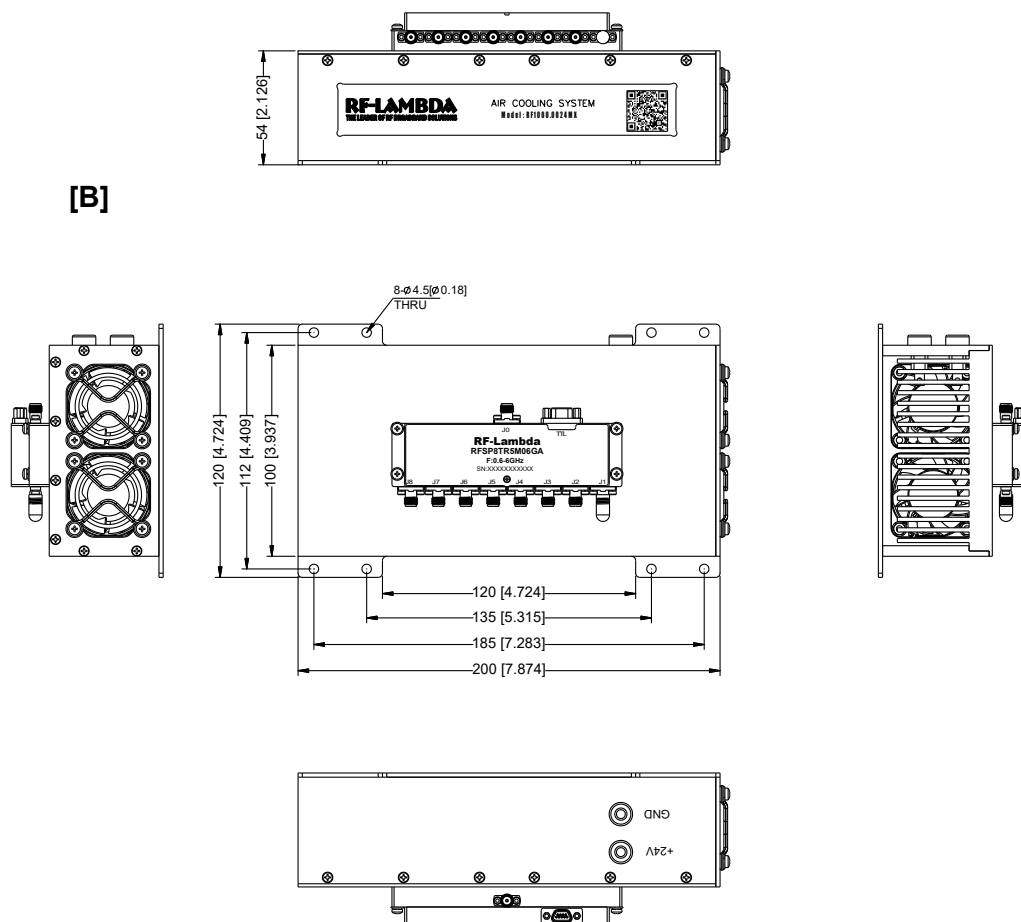
1. Package Material: Aluminum
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances ± 0.2 [0.008] unless otherwise specified.
5. Power Handling is 20W with this cooling option.
6. Heatsink Included - Mandatory for Operation . Matching heatsink is listed on our website. If customer would like to use their own cooling method, please make sure the amplifier will operate under the specs that listed in page 2 of this datasheet.

Webpage

ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
Heatsink Lookup Specifications	https://rflambda.com/search_heatsink.jsp
Connector Torque Specifications	https://www.rflambda.com/pdf/Torque_Specifications.pdf
Random Vibration Test Standard	https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

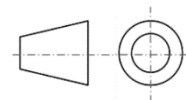
Outline Drawing

Type B - Air Cooling Option Outline Drawing



Notes:

1. Package Material: Aluminum
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances ± 0.2 [0.008] unless otherwise specified.
5. Recommended Cooling Option (Required for 100W Power Handling).
6. Heatsink Included - Mandatory for Operation. Matching heatsink is listed on our website. If customer would like to use their own cooling method, please make sure the amplifier will operate under the specs that listed in page 2 of this datasheet.



Additional Information

Documentation

Webpage

ESD Policy

https://rflambda.com/pdf/rflambda_esd_control.pdf

Heatsink Lookup Specifications

https://rflambda.com/search_heatsink.jsp

Connector Torque Specifications

https://www.rflambda.com/pdf/Torque_Specifications.pdf

Random Vibration Test Standard

https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RFSP8TR5M06GA	Standard	0.6GHz-6GHz SP8T PIN Diode Switch

Important Notice

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