

Reflective Coaxial SP2T Switch 2GHz-4GHz



Product Description

RFSP2TR0204GK is a reflective coaxial single pole double throw switch with a frequency range of 2 to 4GHz.

The maximum power input of this switch is 50W. The insertion loss is 1.3dB with a typical isolation of 65dB.

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

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

Features

- TTL compatible driver included
- Fast Switching Speed
- High Power Cold Switching
- Insertion Loss 1.3dB Typical
- Isolation 65dB Typical
- 50 Ohm Matched

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, TTL = 0 / +5V

Parameter	Min	Typ	Max	Units
Frequency Range		2-4		GHz
Insertion Loss		1.3	1.5	dB
Insertion Loss Temperature Coefficient		0.003		dB/ °C
Isolation	50	65		dB
Input VSWR		1.3	1.5	: 1
Output VSWR		1.3	1.5	: 1
RF Input Power (CW)			50	W
Power Dissipation (CW)		10		W
0.1dB Compression Point (P0.1dB)		47		dBm
IIP3		55		dBm
Switching Speed			1	us
Bias Current (+5V)		120		mA
Weight		0.37 Max.		lbs
Impedance		50		Ω
Input / Output Connectors	N-Female(Input) – N-Female(Output)			
Interface and Control Connector	MICRO-D9 (Female)			
Package	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

Absolute Maximum Ratings

Parameter	Rating
Biasing	+5V±10%

Notes:

1. If the device operates in high power state, case temperature must be lower than 60°C.
2. Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could be damaged.

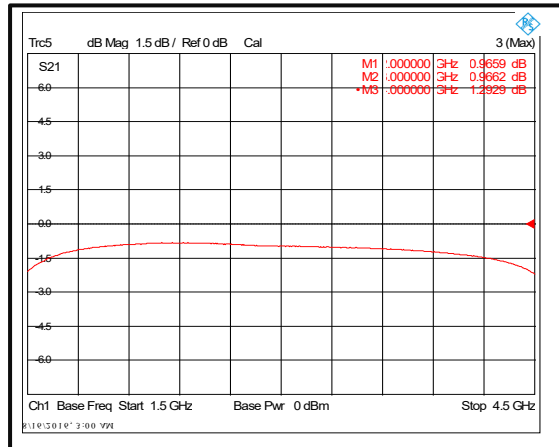
Environmental Specifications and Test Standards

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)

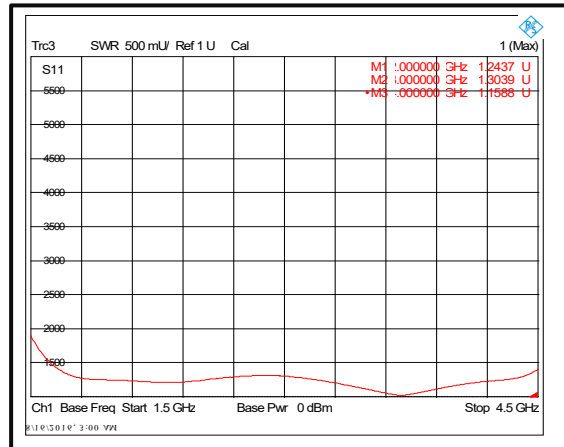
** For vibration testing details please see additional information section.

Typical Performance Plots

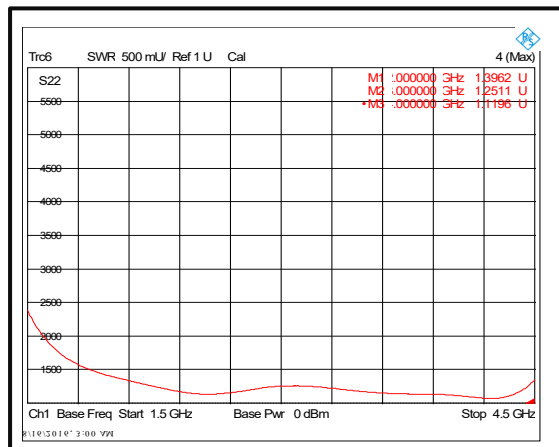
Insertion Loss



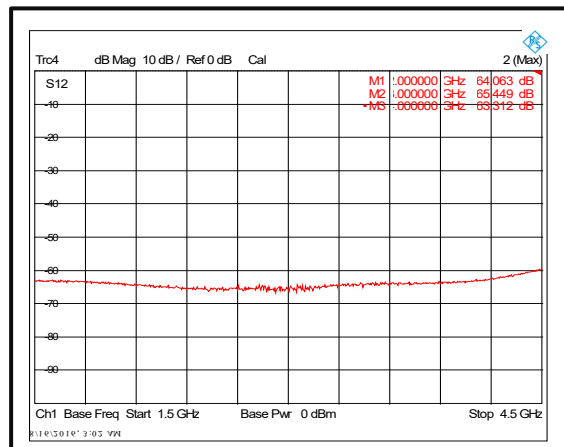
Input VSWR



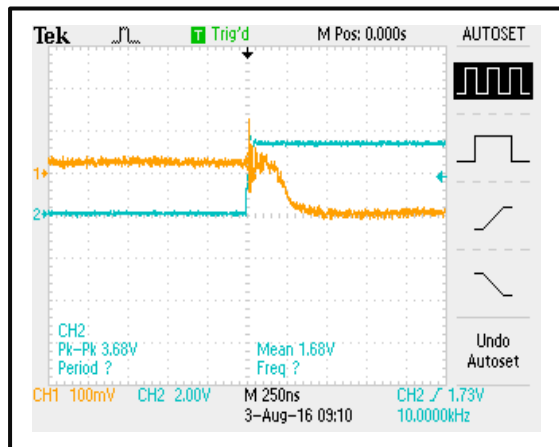
Output VSWR



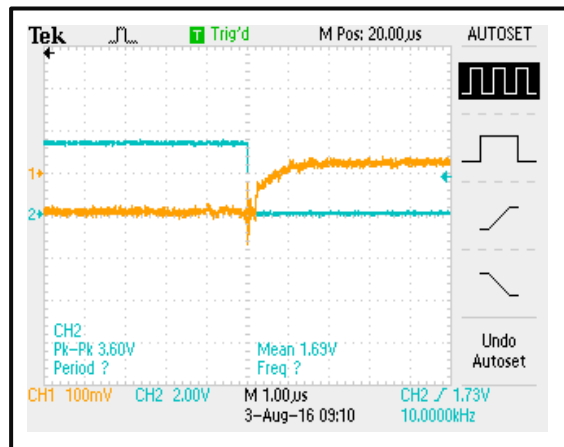
Isolation



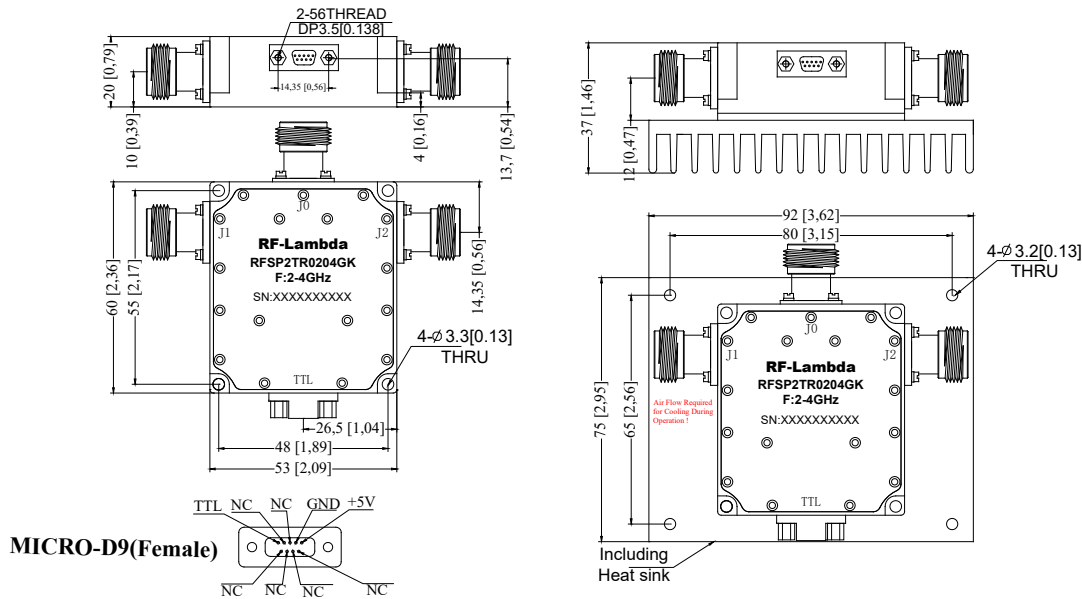
Switching Speed



Switching Speed



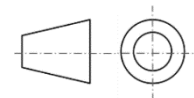
Outline Drawing



Truth Table	
TTL Control Voltage	Low(0)=0~0.8V
THRESHOLD	High(1)=2.8~5V
Control Input	State
TTL	
0	J0-J1
1	J0-J2
Control Pin	Customization available upon request

Notes:

1. Package Material: Aluminum
2. Plating: Gold
3. All dimensions are in millimeters [inches].
4. Housing Tolerances ± 0.1 [0.004] unless otherwise specified.
5. Heatsink Included - Mandatory for Operation .
6. Heatsink NOT Included - Mandatory for Operation.
7. Heat sink required during operation (sold separately). 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.
8. Standard torque wrench must be used to secure RF connectors.



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
RFSP2TR0204GK	Connectors N-Female	2-4GHz SP2T PIN Diode Switch

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