

WR12 Reflective Coaxial SP4T Switch 60GHz-86GHz



Note: Photo is for illustration purposes only.
Please refer to outline drawing.

Product Description

RFSP4TR6090GW12 is a WR12 reflective coaxial single pole four throw switch with a frequency range of 60 to 86GHz.

The maximum power input of this switch is 23dBm. The insertion loss is 11dB with a typical isolation of 35dB.

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

- Wide Band Operation 60 - 86GHz
- Functional Bandwidth : 50 - 90GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Power Cold Switching
- Insertion Loss 11dB Typical
- Isolation 35dB 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/-5V, TTL = 0 / +5V

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		60-75		75-86 (Functional to 90)			GHz
Insertion Loss			11.0		14.0		dB
Insertion Loss Temperature Coefficient		0.003			0.003		dB/ °C
Isolation	30	35		24	27		dB
Input VSWR		2.2	3		3		: 1
Output VSWR		2.5	3		3		: 1
RF Input Power (CW)			23			23	dBm
DC Power Dissipation		0.3			0.3		W
0.1dB Compression Point(P0.1dB)		23			23		dBm
IIP3		45			45		dBm
Switching Speed		100			100		ns
Bias Current (+5V / -5V)			100/50Max.				mA
Weight			-Max.				lbs
Impedance			50				Ω
Input / Output Connectors						WR12	
Package	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

Absolute Maximum Ratings

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

Notes:

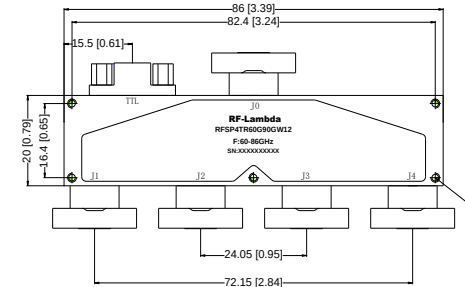
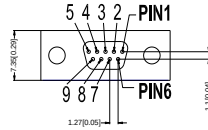
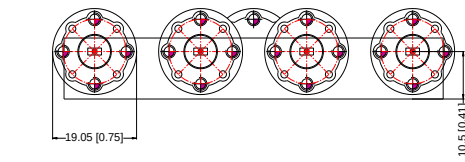
1. TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

Environmental Specifications and Test Standards

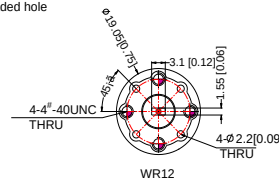
Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 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.

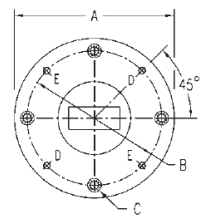
Outline Drawing



1 2 3 4 5 6 7 8 9
+5V -5V GND C1 C2 NC NC NC NC



	WR12	WG26	R740
	UG387/U		
Dimensions	inches	mm	
A	0.750	19.05	
B	0.563	14.29	
C Holes	4-40 UNC-2B		
D Holes	0.063	1.613	
E Dowels	0.061	1.555	
All Holes	0.563	14.29	

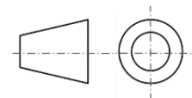


Truth Table

TTL Control Voltage	Low(0)=0~0.8V	
THRESHOLD	High(1)=2.8~5V	
Control Input	Signal Path State	
TTL		
C2	C1	
0	0	J0-J1
0	1	J0-J2
1	0	J0-J3
1	1	J0-J4
Control Pin Customization available upon request		

Notes:

1. Package Material: Aluminum
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances ± 0.1 [0.004] unless otherwise specified(Excl Heat Sink).
5. Heatsink Required - Mandatory for High Power 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.
6. 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
RFSP4TR6090GW12	WR12	60GHz-86GHz SP4T PIN Diode Switch

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