



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFSP8TR52G72G

Reflective Coaxial SP8T Switch 52-72GHz



Features

- Wide Band Operation 52-72GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation

Typical Applications

- Wireless Infrastructure
- Test and Measurement

Electrical Specifications, $T_A = +25^\circ\text{C}$, $V_{dd} = +5\text{V} / -5\text{V}$, $\text{TTL} = 0 / +5\text{V}$

Description	PN: RFSP8TR52G72G						
	SP8T Reflective Switch						
	Low Power Cold Switching						
	Min	Typ.	Max	Min	Typ.	Max	Units
Frequency Range	52 - 69			69-72			GHz
Insertion Loss		11	12.5		12	13	dB
Insertion Loss Temperature Coefficient		0.003			0.003		dB/ $^\circ\text{C}$
Isolation	30	35		30	35		dB
Input VSWR		2.8	3.0		2.5	3.0	: 1
Output VSWR		2.8	3.0		2.5	3.0	: 1
RF Input power (CW)			23			23	dBm
DC Power Dissipation		1.5			1.5		W
0.1dB Compression Point ($P_{0.1\text{dB}}$)		23			23		dBm
IIP3		45			45		dBm
Switching Speed		100			100		ns
Weight	2.47						ounces
Impedance	50						Ω
Bias Current (+5V / -5V)	300/40						mA
Input / Output Connectors	1.85mm-Female						
Interface and Control Connector	MICRO-D9 (Female)						
Finish	Gold Plated						
Material	Aluminum						
Sealing	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Biasing Voltage	+5V±10% / -5V±10%
TTL Control Voltage	0~ 0.8V / 2 .8~ 5V

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

Ordering Information

Part No.	ECCN	Description
RFSP8TR52G72G	EAR99	SP8T 52-72GHz PIN Diode Switch

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C (Case Temperature)
Storage Temperature		-50°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & 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	MIL-STD-883	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)

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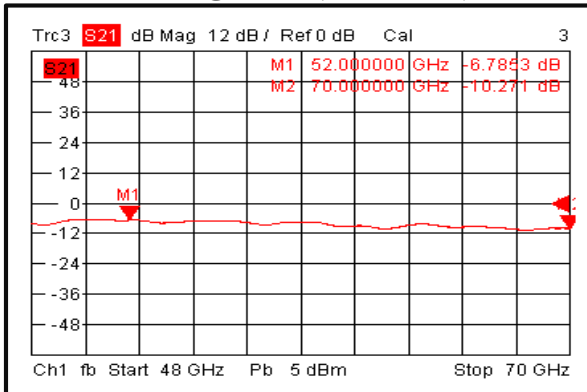
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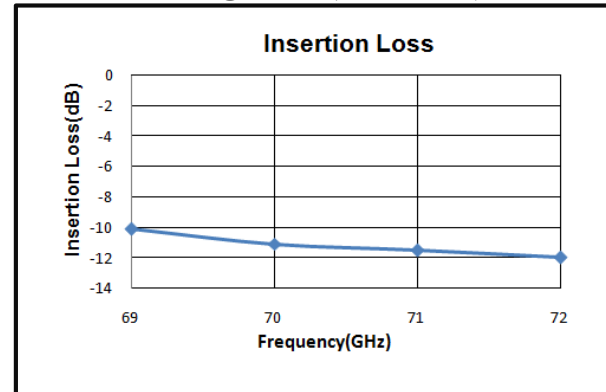
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Typical Performance Plots

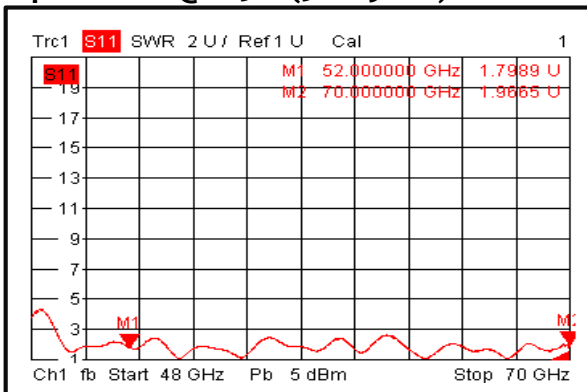
Insertion Loss@+25°C (50~69GHz)



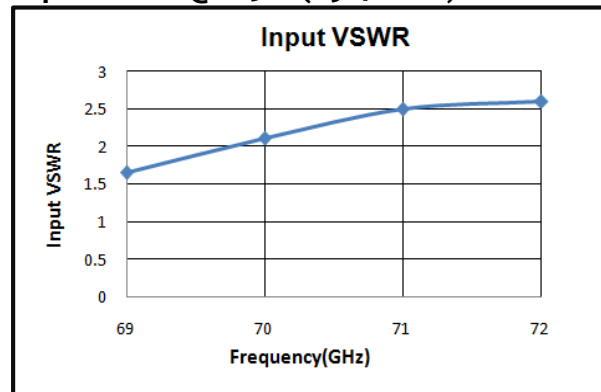
Insertion Loss @+25°C (69~72GHz)



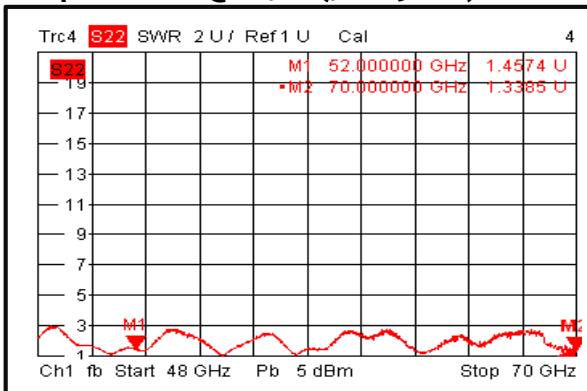
Input VSWR @+25°C (50~69GHz)



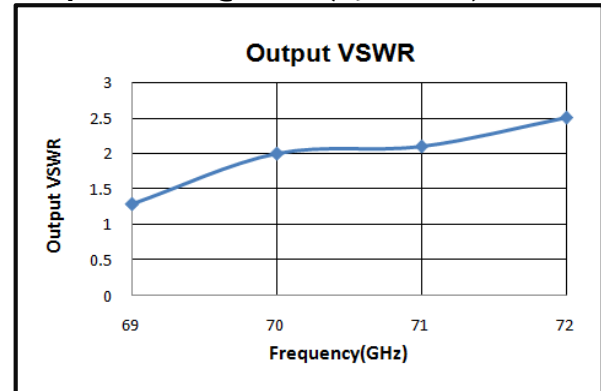
Input VSWR @+25°C (69~72GHz)



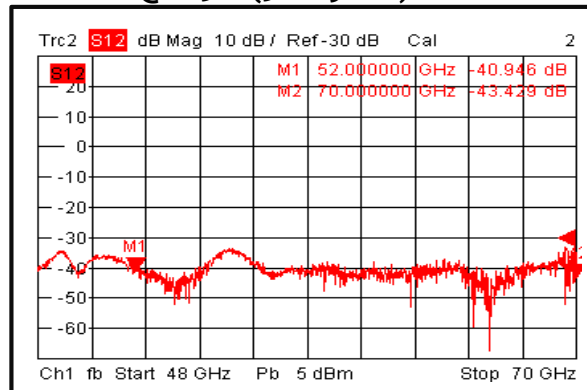
Output VSWR @+25°C (50~69GHz)



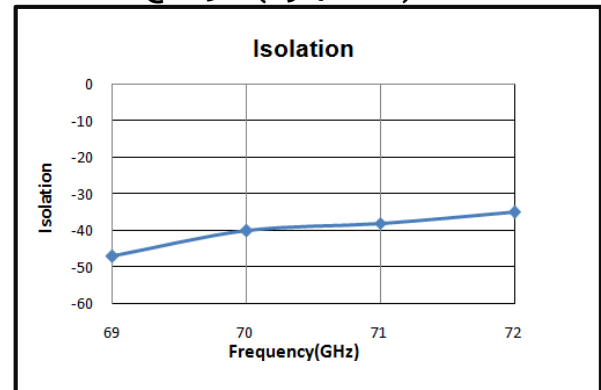
Output VSWR @+25°C (69~72GHz)



Isolation @+25°C (50~69GHz)



Isolation @+25°C (69~72GHz)



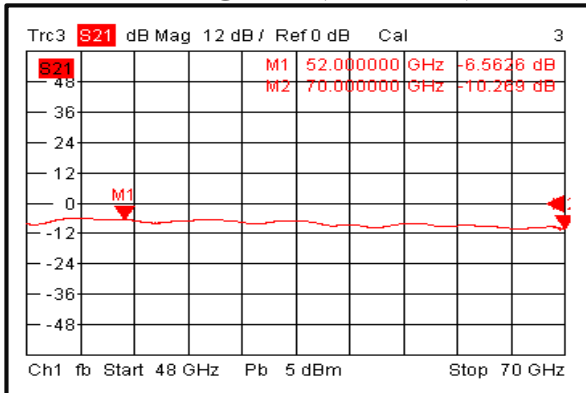


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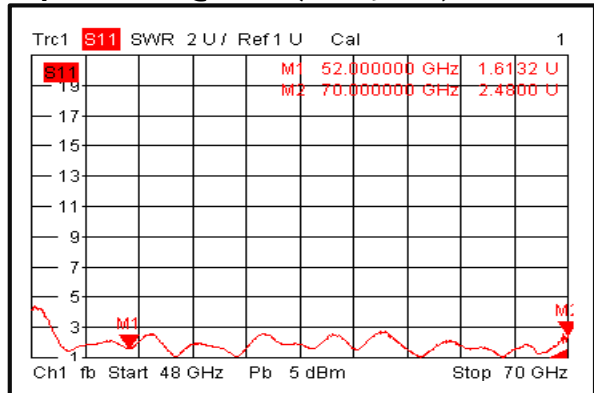
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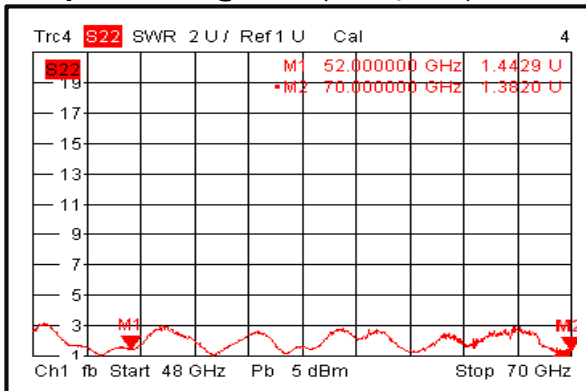
Insertion Loss @-45°C (50~69GHz)



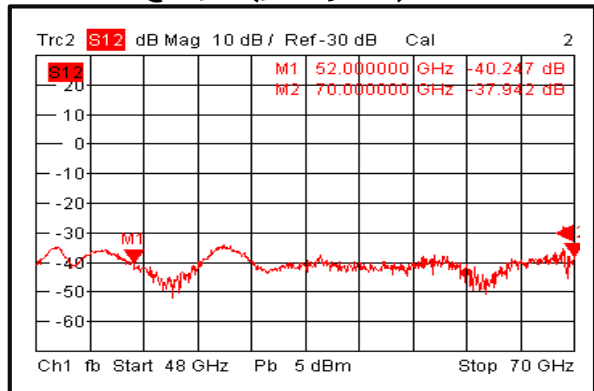
Input VSWR @-45°C (50~69GHz)



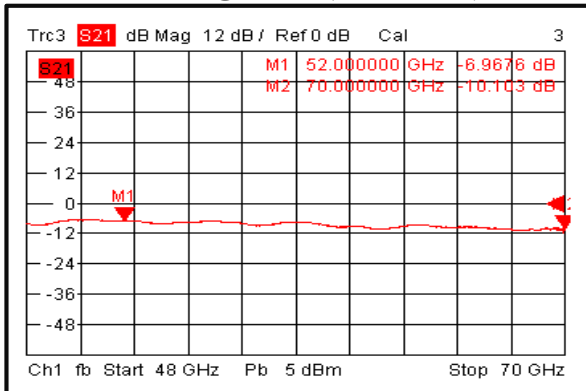
Output VSWR @-45°C (50~69GHz)



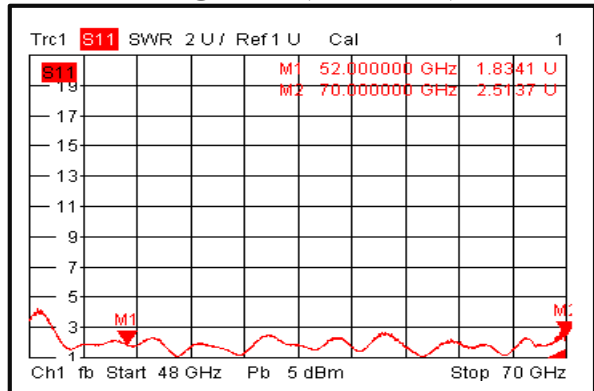
Isolation @-45°C (50~69GHz)



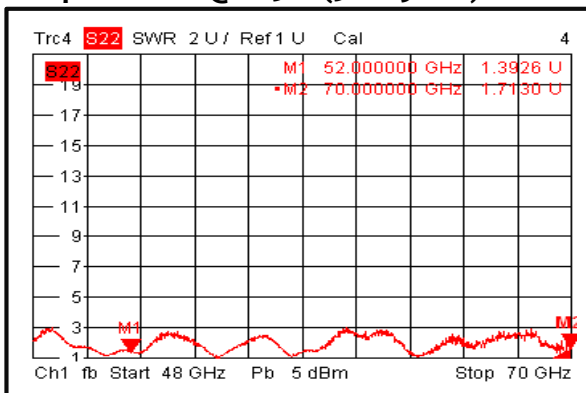
Insertion Loss @+85°C (50~69GHz)



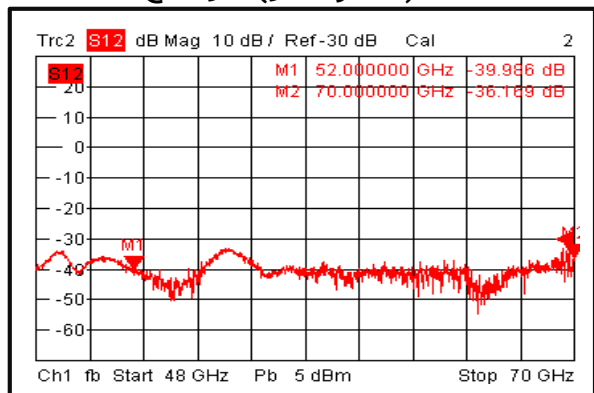
Input VSWR @+85°C (50~69GHz)



Output VSWR @+85°C (50~69GHz)



Isolation @+85°C (50~69GHz)



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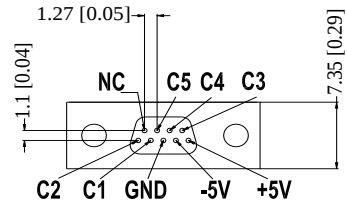
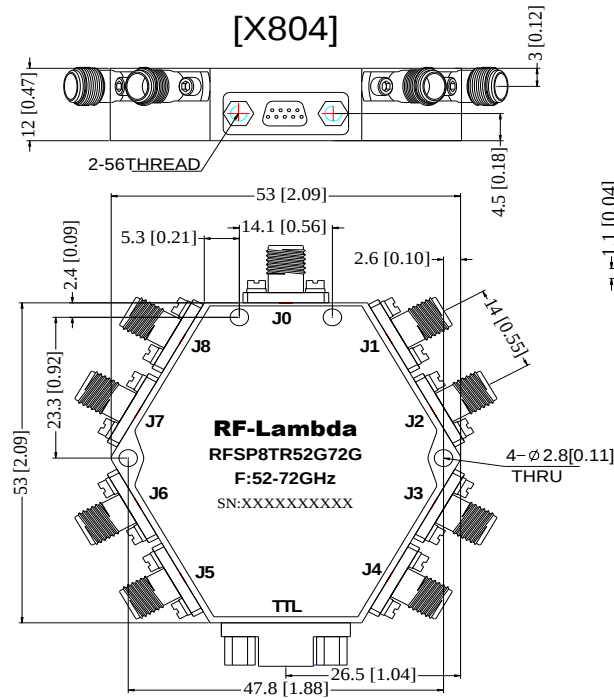
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Outline Drawing:

All Dimensions in mm [inches]



MICRO-D9(Female)

Truth Table

Control					Signal Path State
C5	C4	C3	C2	C1	
0	0	0	0	0	Jo-J1
0	0	0	0	1	Jo-J2
0	1	0	1	0	Jo-J3
0	1	0	1	1	Jo-J4
1	0	1	0	0	Jo-J5
1	0	1	0	1	Jo-J6
1	1	1	1	0	Jo-J7
1	1	1	1	1	Jo-J8
Control pin customization available upon request					



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