SWJ-12-L1

DPDT Motorized Latching Switch with TTL Driver, WR-12, E-Plane

SWJ-12-L1 is a WR-12 motorized double pole, double throw (DPDT) transfer switch with a TTL driver that operates from 60 to 90 GHz. It is an E-plane, bidirectional, latching-type switch. The typical insertion loss is 0.4 dB and the typical isolation is 60 dB. The RF ports are WR-12 waveguides with UG-387/U anti-cocking flanges. The bias and control signal is supplied by a 9 pin Micro-D type connector.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	60 GHz		90 GHz
Insertion Loss		0.4 dB	
Return Loss		20 dB	
Isolation		60 dB	
Bias Voltage	+12 V_{DC}	+12 V_{DC}	+16 V_{DC}
Bias Current			1.4 A
Control Signal		DC/TTL	
Switching Speed (Time)SEE NOTES		125 ms	
Cycle Time		250,000	
Power Handling		100 W (CW)	
Specification Temperature		+25°C	
Operating Temperature	-25°C		+65°C

Mechanical Specifications:

Item	Specification
Waveguide Port	WR-12
Flange	UG-387/U Anti-Cocking
Bias/Control Port	9 Pin Micro-D Connector
Material	Aluminum
Finish	Chem Film and Black Anodizing
Weight	11.0 Oz.
Outline	WJ-LE-A

ECCN

EAR99

FEATURES

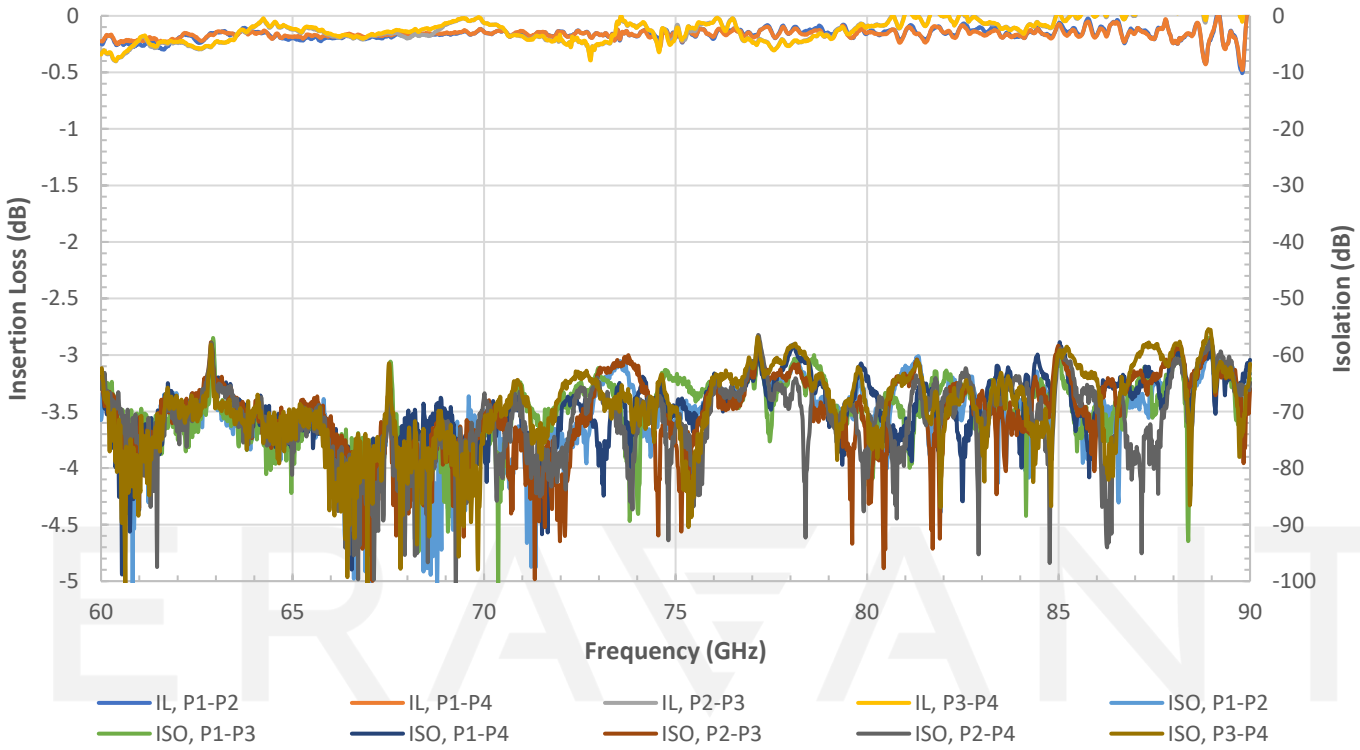
- Low Insertion Loss
- High Isolation
- TTL Control

APPLICATIONS

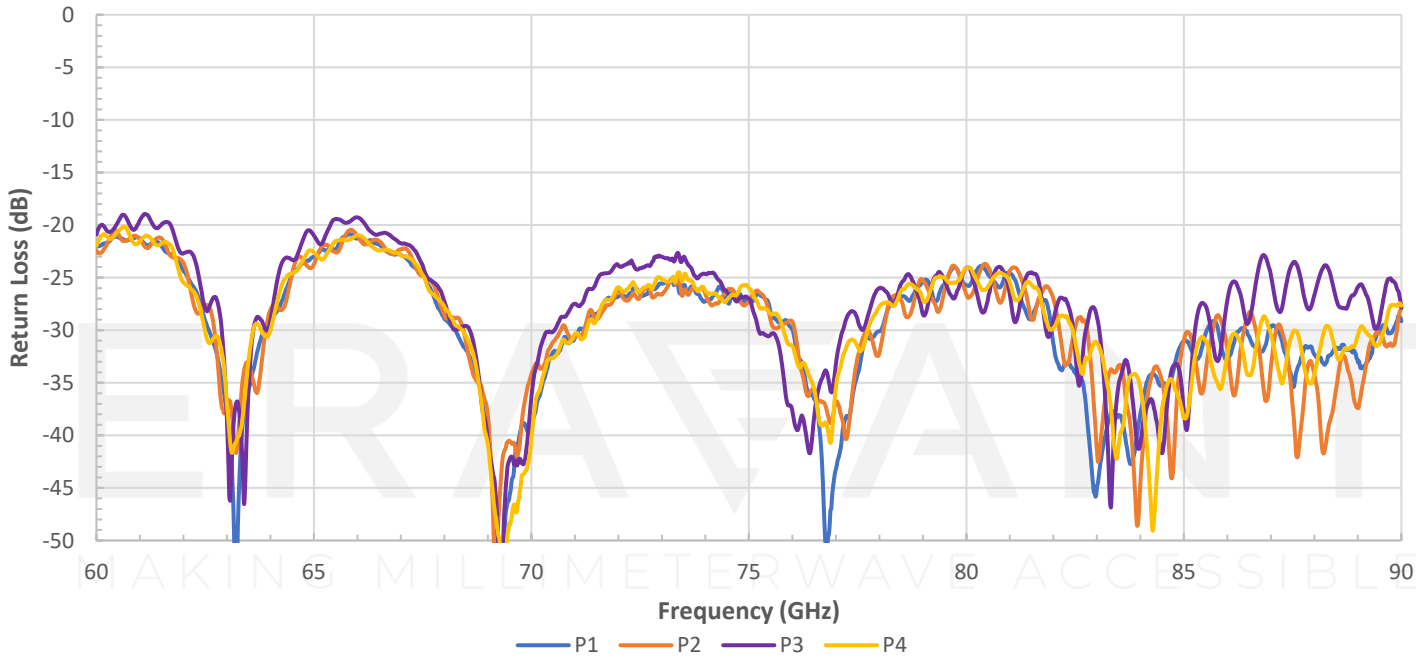
- Test Lab
- Communication Systems
- Radar Systems

SUPPLEMENTAL DETAILS

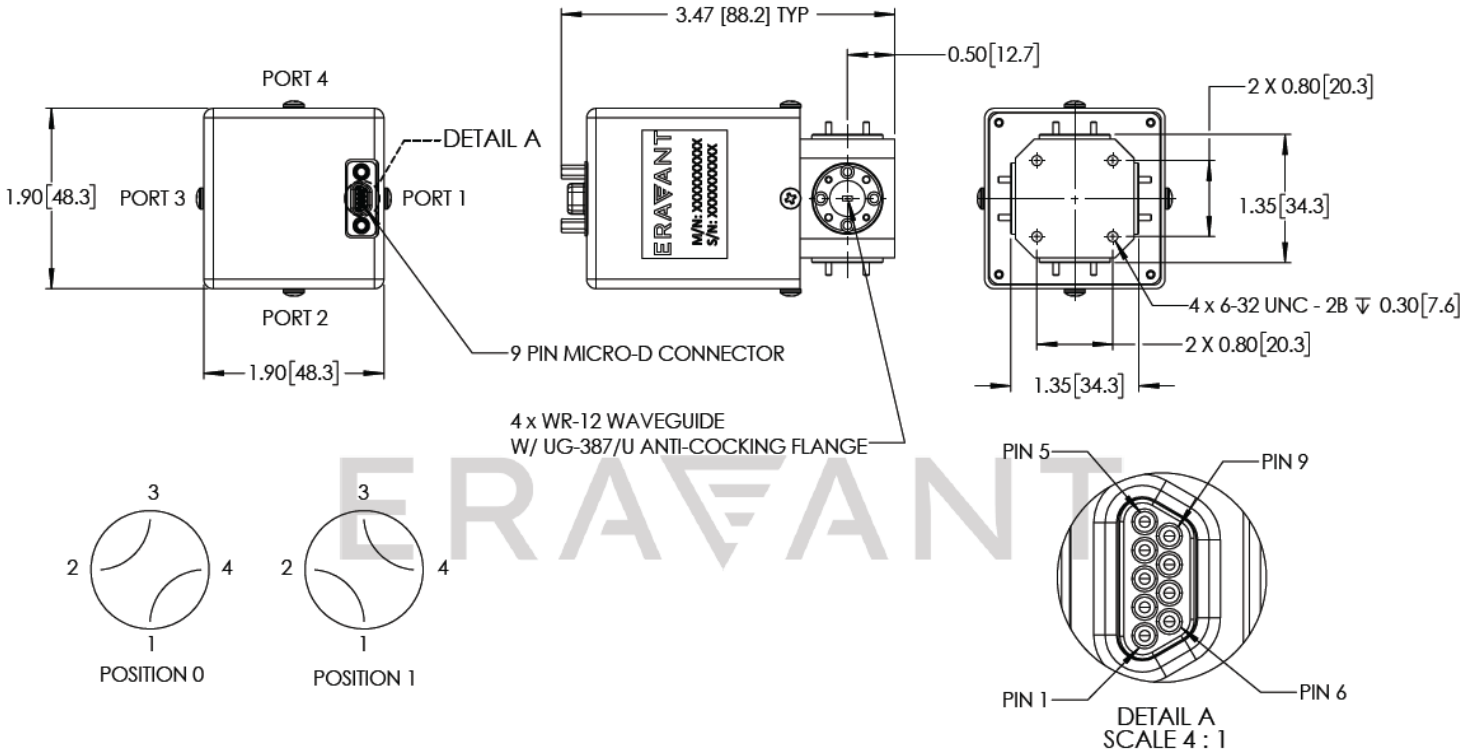
Typical Measured Insertion Loss and Isolation vs Frequency



Typical Measured Return Loss vs Frequency



Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



Connector Pinout Table:

Pin	Function
1	+VDC (Motor Bias)
2	-VDC (Motor Bias)
3	+5 VDC (Control Bias)
4	+5V Position 0 Control Input (DC/TTL)
5	+5V Position 1 Control Input (DC/TTL)
6	GND
7	+5V Position Readout Relay Common
8	Position 0 Readout
9	Position 1 Readout

NOTE:

- Test data provided is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Always apply the +VDC first before applying the TTL to avoid the circuit instability, which could cause damage.
- The switch is a static sensitive device. Always follow ESD rules when working with the switch.
- Any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.

NOTE:

- Switching time refers to the “on” time and “off” time. As illustrated below, the “on” time begins when a 50% control pulse is applied and ends when 90% of the RF signal is achieved. On the other hand, the “off” time begins when the control pulse drops below 50% and ends when 90% of the RF signal disappears. The switching time is related to the electro-mechanical configuration and TTL driver characteristics of the switch. It is not operation speed. For instance, the minimum time needed to switch back and forth is up to 0.5 second, i.e., 2 times per second for the motorized switch if operating continuously. The higher the switching speed, the more stress applied and the less cycle time (shorter life) of the switch is.