

**DPDT Motorized Switch with TTL Driver, WR-34, E-Plane**

**SWJ-34-T1** is a WR-34 motorized double pole, double throw (DPDT) transfer switch with a TTL driver that covers the frequency range of 22 to 33 GHz. It is an E-plane, bidirectional switch that has four ports which allows each port to be switched on and off between the adjacent ports. The typical insertion loss is 0.15 dB and the typical isolation is 60 dB. The RF ports are WR-34 waveguides with UG-1530/U compatible flanges. The bias and control signal is supplied by a standard MS3112E10-6P type connector.

**Electrical Specifications:**

| Parameter                                   | Minimum | Typical | Maximum    |
|---|---------|---------|------------|
| Frequency Range                             | 22 GHz  |         | 33 GHz     |
| Insertion Loss                              |         | 0.15 dB |            |
| Return Loss                                 |         | 23 dB   |            |
| Isolation                                   |         | 60 dB   |            |
| Bias Voltage                                |         | ±28 VDC | ±30 VDC    |
| Bias Current                                |         | 250 mA  |            |
| Control Signal                              |         | TTL     |            |
| Switching Speed (Time) <sup>SEE NOTES</sup> |         | 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                                    |
|--------------------------------|--|
| RF Ports                       | WR-34 Waveguide with UG-1530/U Compatible Flange |
| Bias Port and TTL Control Port | MS3112E10-6P                                     |
| Body Material                  | Aluminum   |
| Body Finish                    | Chem Film  |
| Actuator Finish                | Black Paint                                      |
| Weight                         | 11.5 Oz.   |
| Outline                        | WJ-T3  |

**ECCN**

EAR99

**FEATURES**

- Low Insertion Loss
- High Isolation
- TTL Control

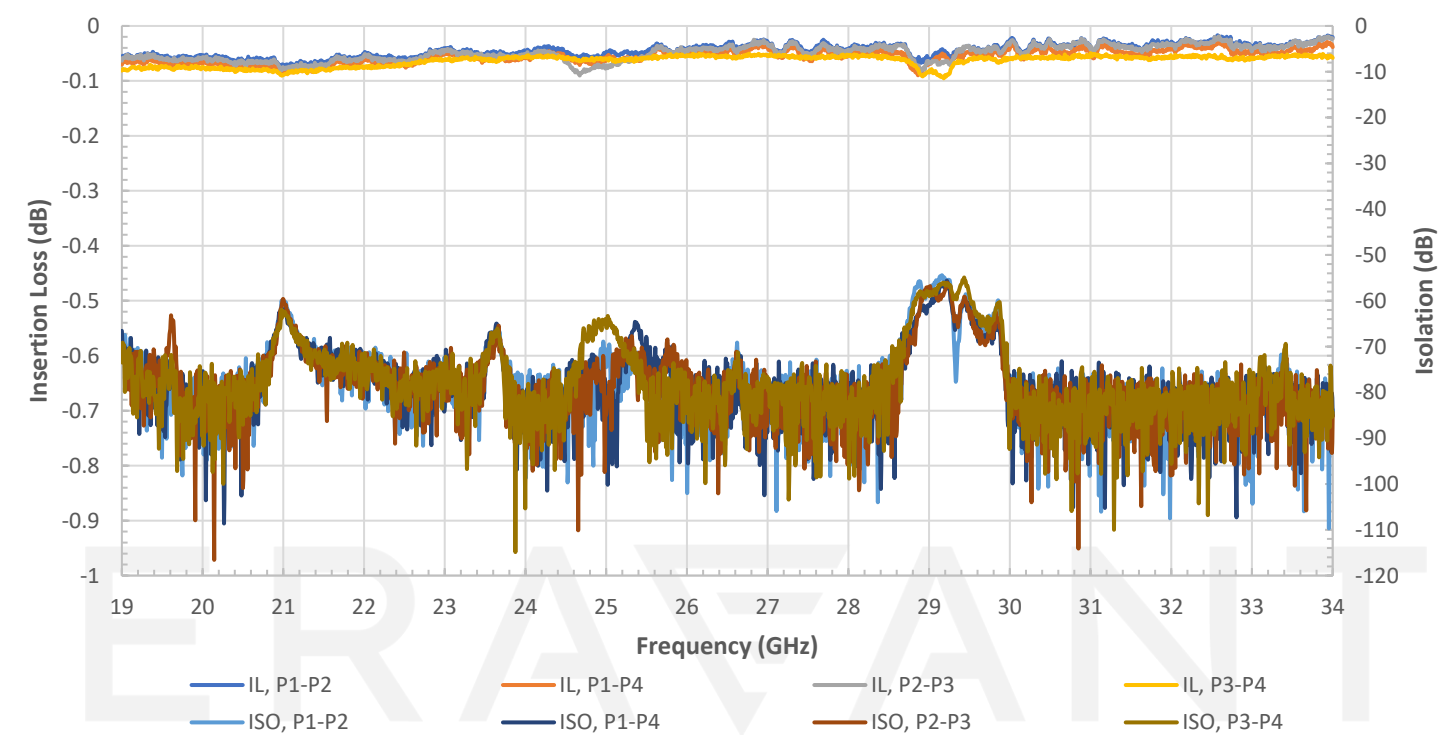
**APPLICATIONS**

- Test Lab
- Communication Systems
- Radar Systems

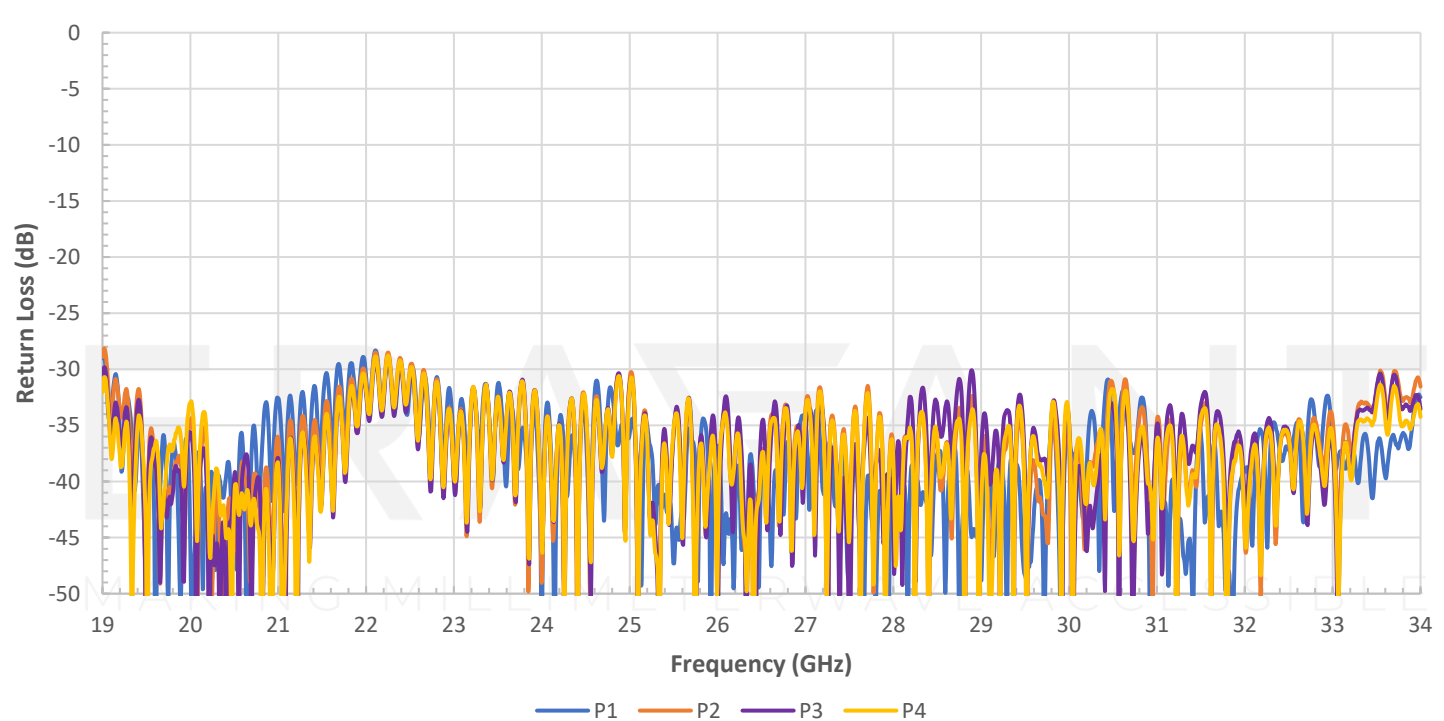
**SUPPLEMENTAL DETAILS**

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Typical Measured Insertion Loss and Isolation vs Frequency

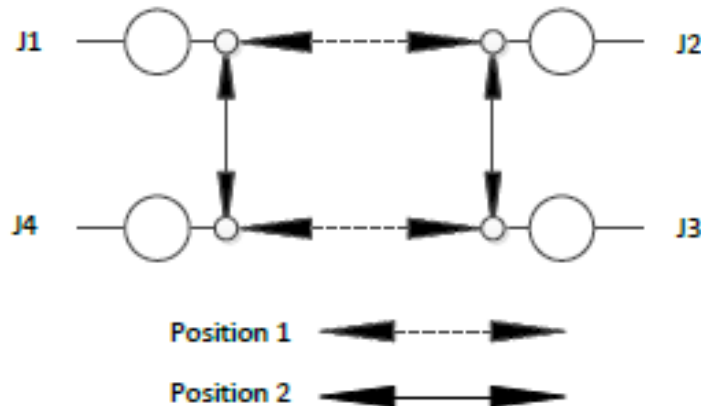


Typical Measured Return Loss vs Frequency



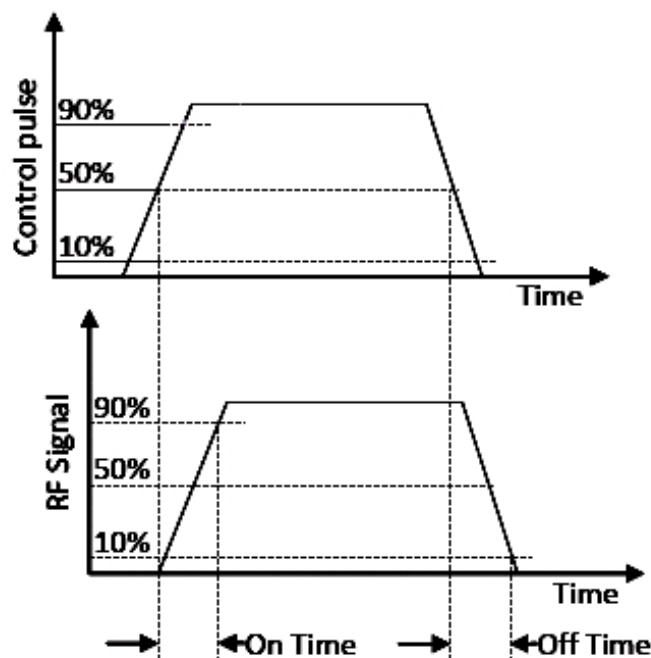
## SWJ-34-T1

## Electrical Schematic:



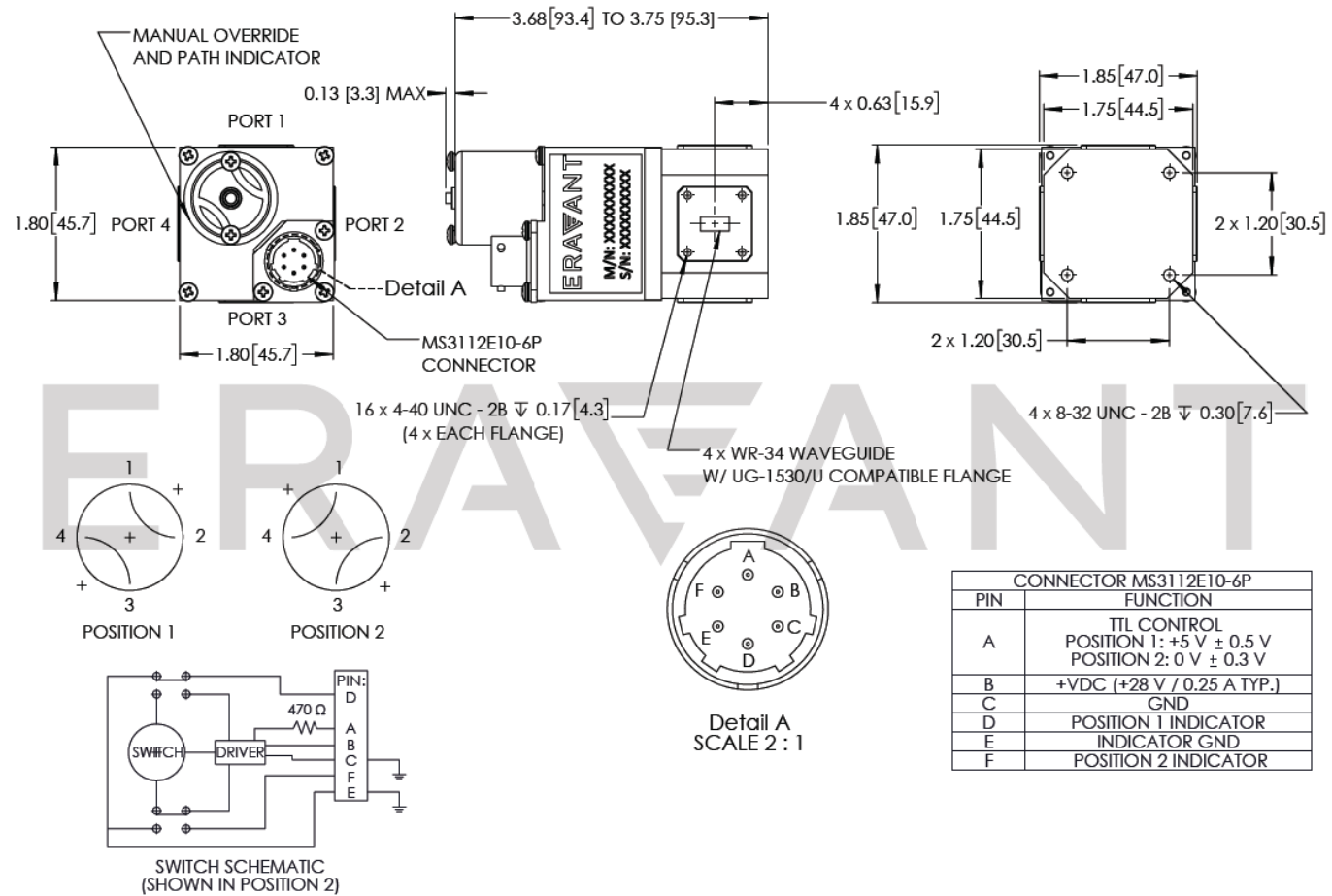
## NOTE:

- 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 SWJ series 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.



SWJ-34-T1

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



**NOTE:**

- On condition that test data is provided it 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 +28 VDC first before applying the TTL to avoid the circuit instability, which could cause the switch 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.