

SK4-5037536535-1515-R1-M

Rev. 1.0

SP4T PIN Diode Switch with TTL Driver, Reflective, 50 to 75 GHz

Description:

Model SK4-5037536535-1515-R1-M is a PIN diode based, single pole, four throw (SP4T) reflective switch with a TTL driver that operates between 50 and 75 GHz. This model offers a small form factor by integrating the switch and driver into a common housing and achieves a low insertion loss by minimizing high loss transmission. The SP4T switch offers 35 dB port-to-port isolation with a switching speed of up to 100 nanoseconds. The switch is configured with WR-15 waveguides and standard UG-385/U anti-cocking flanges at the input and outputs and a 10-pin male Molex connector for DC biasing and TTL controlling.



Features:

- Broad Band Coverage
- High Isolation
- Compact Size
- Reflective

Applications:

- Radar Systems
- Communication Systems
- Automatic Test Equipment
- Switching Network

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	50 GHz		75 GHz
Insertion Loss		6.5 dB	
Return Loss		5 dB	
Isolation		35 dB	
Maximum Input RF Power		+20 dBm	+23 dBm
Bias Voltage		$\pm 5 V_{DC}$	$\pm 6 V_{DC}$
Bias Current		100 mA	
Control		TTL	
Switching Speed		100 ns	
Specification Temperature		+25 °C	
Operation Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Parameter
Input Port	WR-15 Waveguide with UG-385/U Anti-Cocking Flange
Output Port	WR-15 Waveguide with UG-385/U Anti-Cocking Flange
DC Bias and TTL	Molex Connector 87833-1020
Case Material	Aluminum
Finish	Gold Plated
Weight	2.8 Oz
Size	1.60" (L) X 1.64" (W) X 0.95" (H)
Outline	K4-RV-A-2



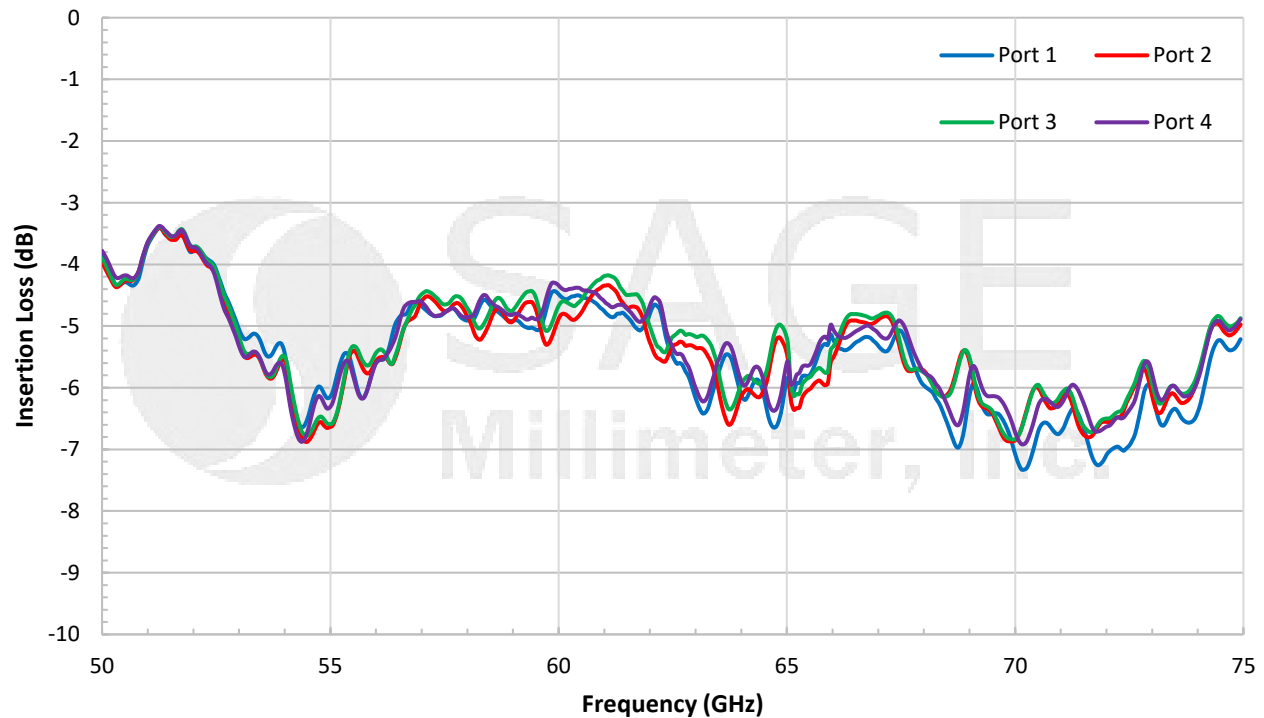
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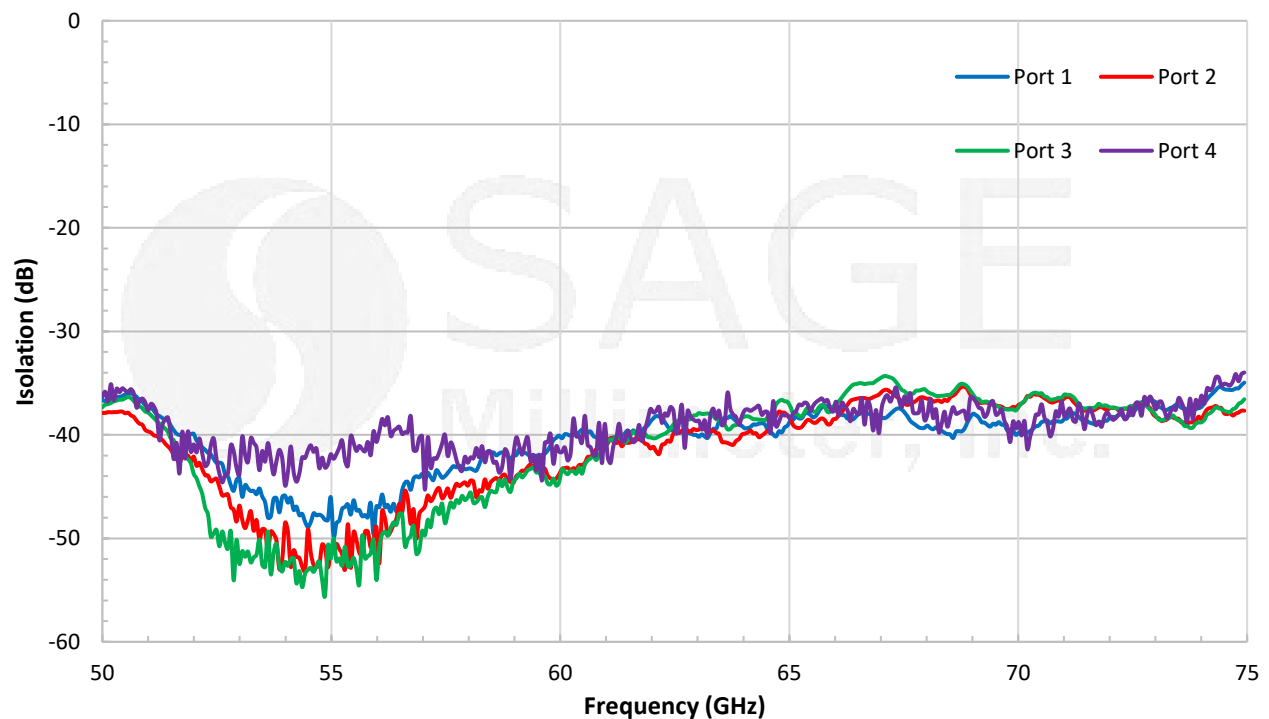
Typical Insertion Loss vs. Frequency

Input Power: RF -10 dBm



Typical Isolation vs. Frequency

Input Power: RF -10 dBm



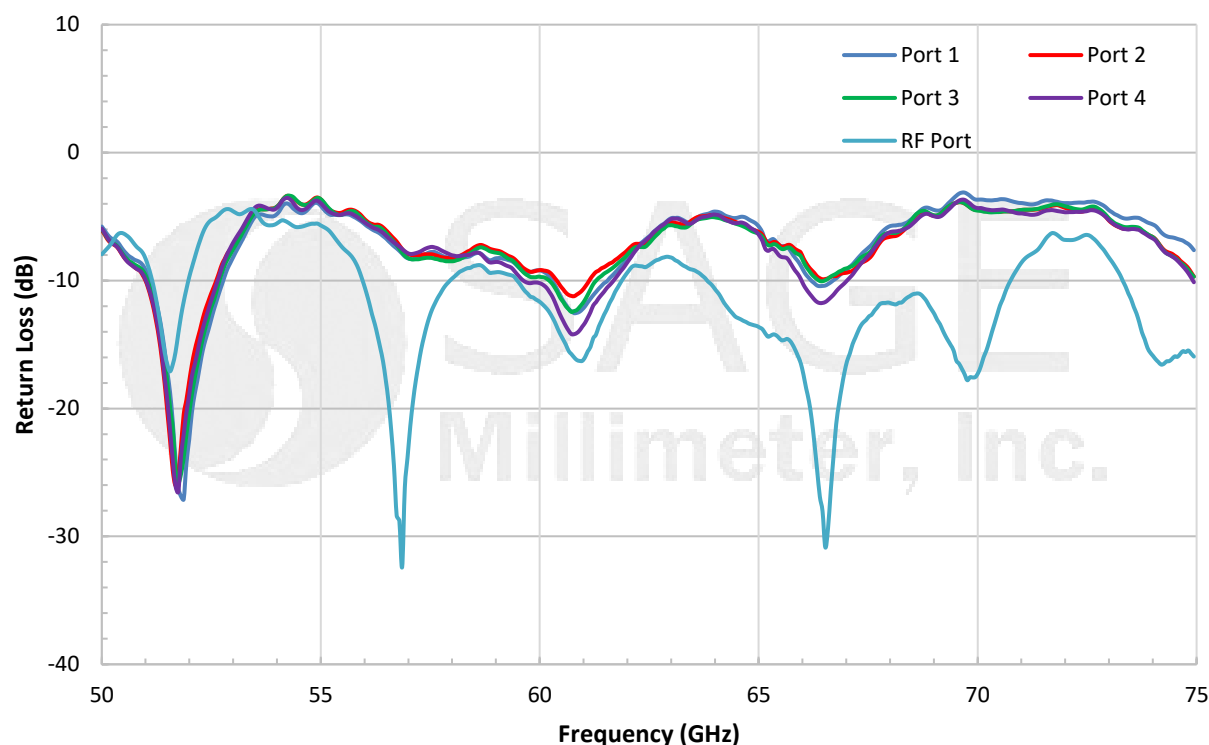
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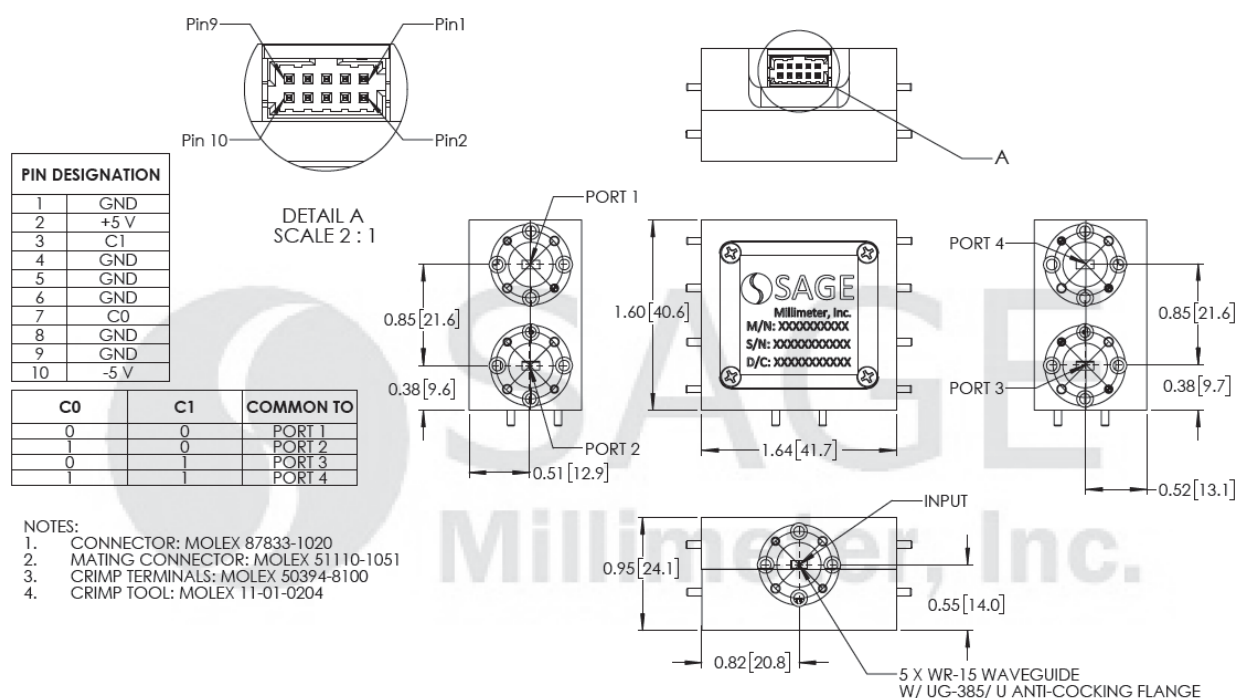
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Typical "ON" State Return Loss vs. Frequency

Input Power: RF -10 dBm



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



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Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit slightly.
- All testing was performed under +25 °C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings of the switch will damage the device.
- The switch is a static sensitive device. Always follow ESD rules when working with the switches.
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.92 ± 0.05 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

