SKD-9031045030-1010-R1

Rev. 1.0

SPDT PIN Switch with TTL Driver, 90 to 100 GHz, Reflective

Description:

Model SKD-9031045030-1010-R1 is a reflective PIN diode based, single pole, double throw (SPDT) switch with a TTL driver that operates from 90 to 100 GHz. The SPDT switch requires a separate -5 V and +5 V biasing in addition to the TTL control. This model has an insertion loss of 5.0 dB typical and an isolation of 30 dB nominal at its center frequency. The SPDT switch features WR-10 waveguides with UG-387/U-M flanges at the RF input and output and a female SMA connector for TTL control on the driver. The switch can be modified for various operational frequencies under different model numbers.

Features:

- Low Insertion Loss
- High Isolation

Applications:

- Radar Systems
- Communication Systems
- Sensors

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	90 GHz		100 GHz
Insertion Loss		5.0 dB	
Isolation	28 dB	30 dB	
Maximum Input Power		+23 dBm	+24 dBm
Bias Voltage		±5 V_{DC}	
Bias Current		10 mA	
Control Signal		TTL	
Switching Speed		100 ns	
Specification Temperature		+25˚C	
Operating Temperature	-25˚C		+65˚C

Mechanical Specifications:

Item	Specification
Input Port	WR-10 Waveguide with UG-387/U-M Flange
Output Ports	WR-10 Waveguide with UG-387/U-M Flange
Bias Ports	Feed Through Pins
TTL Control	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.8 Oz
Size	1.15” (L) X 1.53” (W) X 0.86” (H)
Outline	KD-RWM

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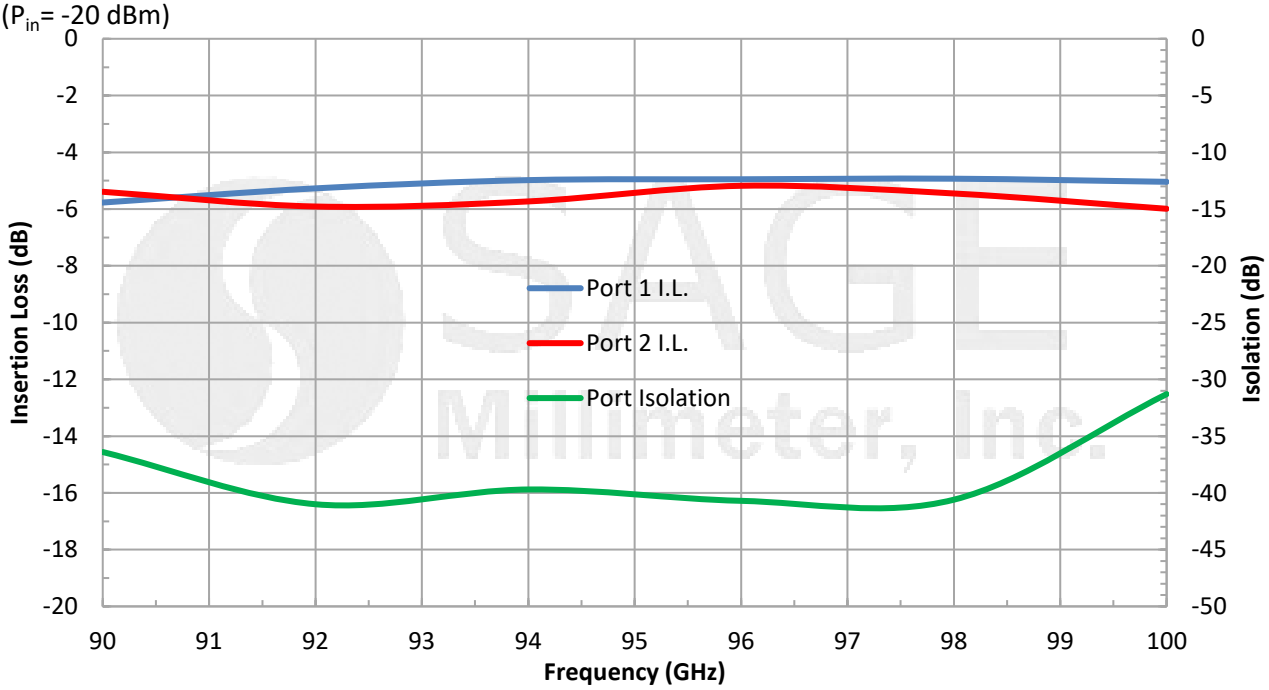
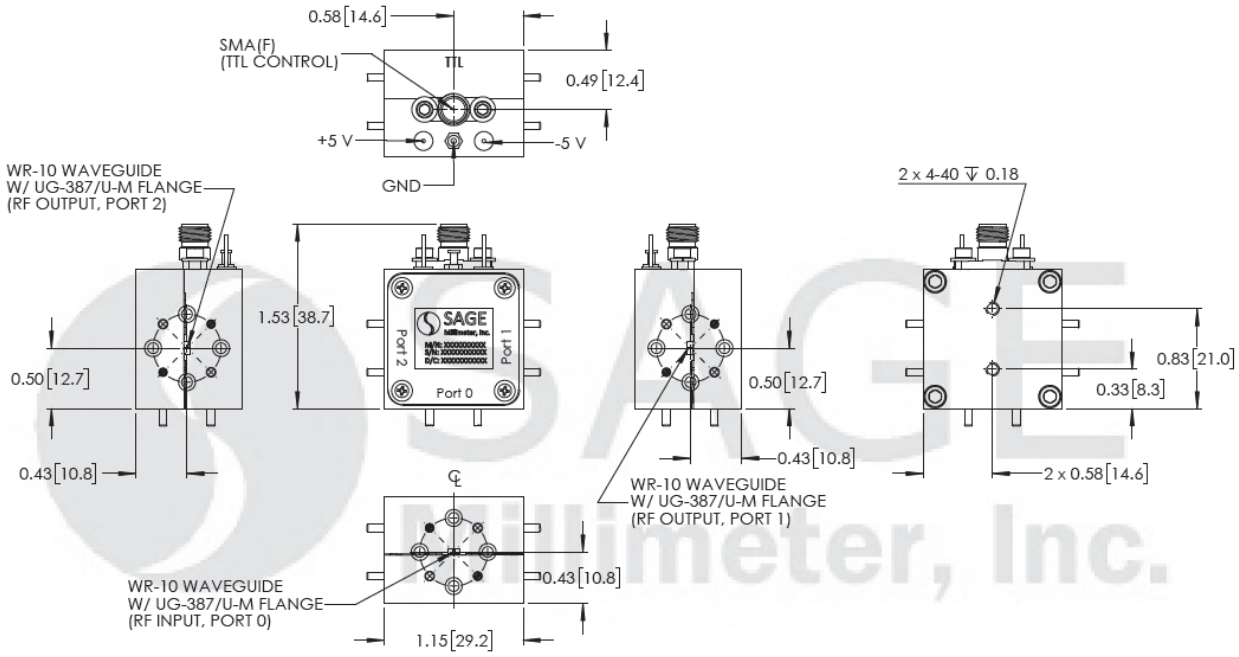
Typical Performance vs. Frequency

(P_{in} = -20 dBm)



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



Truth Table	
Control TTL Input	Signal Path State
1	Port 0-Port 1
0	Port 0-Port 2

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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.
- Other mechanical configurations are available under different model numbers.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings shown will damage the device.
- 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 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.**

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