

## SP4T Solid State Switch with TTL Driver, 60 to 90 GHz

### Description:

**Model SK4-6039038030-1212-R1-M** is a MMIC based, solid state single pole, four throw (SP4T), reflective type switch with a TTL driver that operates between 60 and 90 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 circuit loss transmission losses. The SP4T switch offers 30 dB port-to-port isolation with a switching speed of up to 100 nanoseconds. The input and output connectors of the switch are WR-12 waveguides with standard UG-387/U Anti-Cocking Flanges.



### Features:

- Broad Band Coverage
- High Isolation
- Compact Size

### Applications:

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

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	60 GHz		90 GHz
Insertion Loss		8 dB	
Return Loss		10 dB	
Isolation		30 dB	
Maximum Input RF Power		+20 dBm	+23 dBm
Bias Voltage		$\pm 5$ V <sub>DC</sub>	
Bias Current		30 mA	
Control		TTL	
Switching Speed		100 nS	
Specification Temperature		+25 °C	
Operation Temperature	0 °C		+50 °C

### Mechanical Specifications:

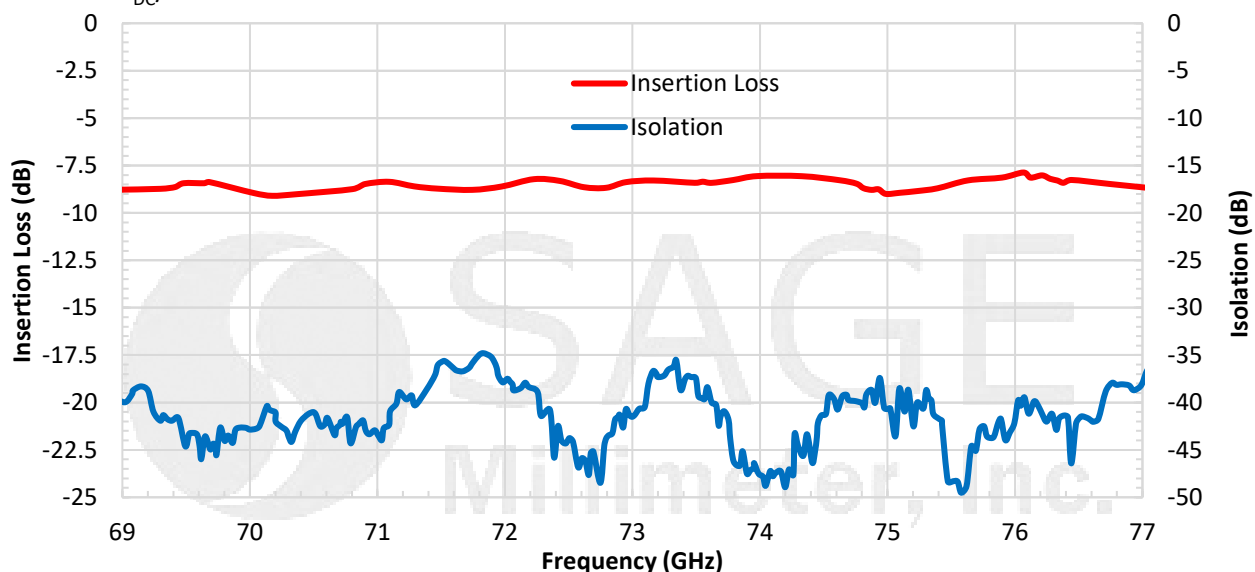
Item	Parameter
Input Port	WR-12 Waveguide with UG-387/U Anti-Cocking Flange
Output Port	WR-12 Waveguide with UG-387/U Anti-Cocking Flange
DC Bias and TTL	Molex Connector, Milli-Grid Header
Case Material	Aluminum
Finish	Gold Plated
Weight	2.7 Oz
Size	1.60" (L) X 1.70" (W) X 0.95" (H)
Outline	K4-RE-A-1



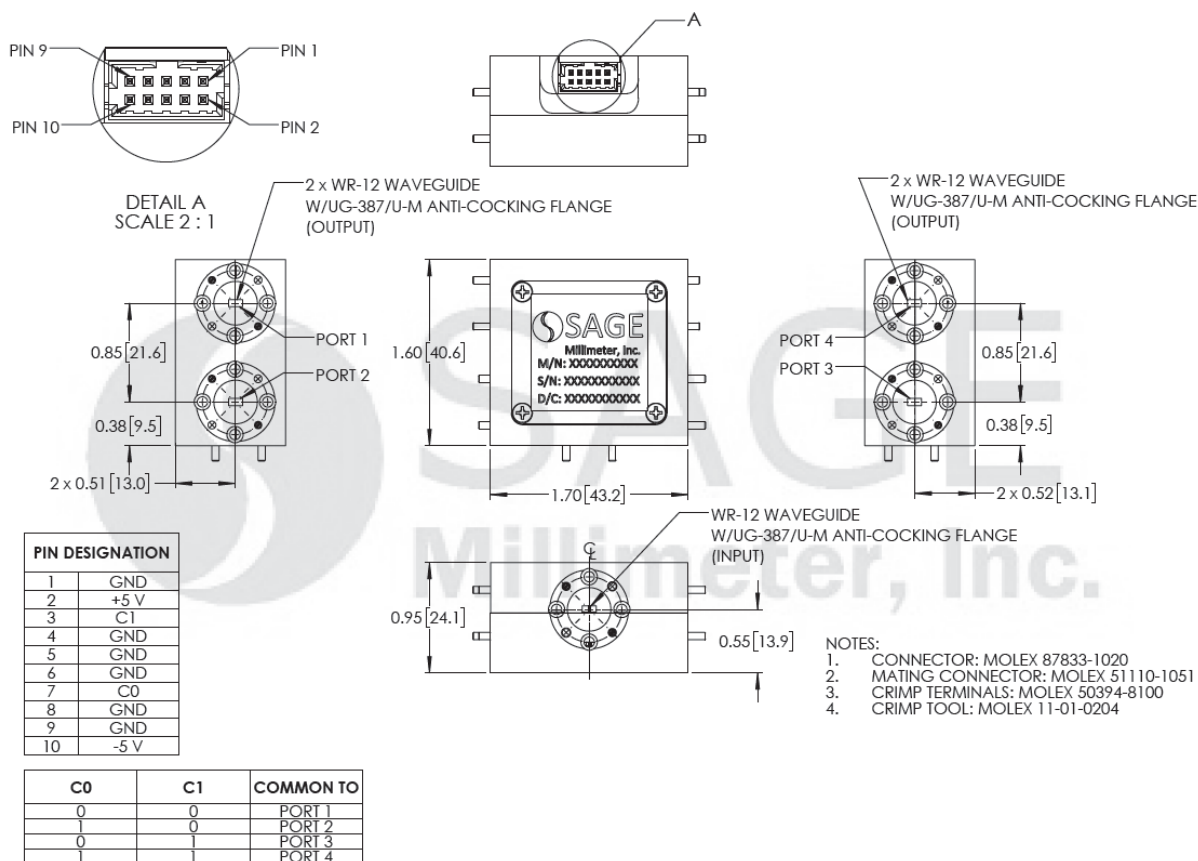
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### Typical Insertion Loss and Isolation vs. Frequency

Bias:  $\pm 5 V_{DC}/30 \text{ mA}$



**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.

