

## SP4T PIN Switch with TTL Driver, 18 to 40 GHz, Absorptive

### Description:

**Model SK4-1834035060-KFKF-A3** is an absorptive PIN diode based, single pole, four throw (SP4T) switch with a TTL driver that operates between 18 and 40 GHz. This model offers a typical insertion loss of 5 dB and 60 dB port-to-port isolation with a typical switching speed of 100 nanoseconds. The switch has female K connectors for all RF ports and solder pins for DC bias and TTL control.



### Features:

- Ultrabroad Bandwidth
- High Isolation
- Compact Size
- Fast Control Speed

### Applications:

- 5G Systems
- Radar Systems
- Communication Systems
- Automatic Test Equipment
- Switching Network

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	18 GHz		40 GHz
Insertion Loss		5.0 dB	
Return Loss		10 dB	
Isolation		60 dB	
Operational RF Input Power			+20 dBm
Damage RF Input Power			+27 dBm
Bias Voltage		$\pm 5 V_{DC}$	
Bias Current		100/50 mA	
Control		TTL	
Switching Speed		100 ns	
Specification Temperature		+25 °C	
Operation Temperature	0 °C		+50 °C

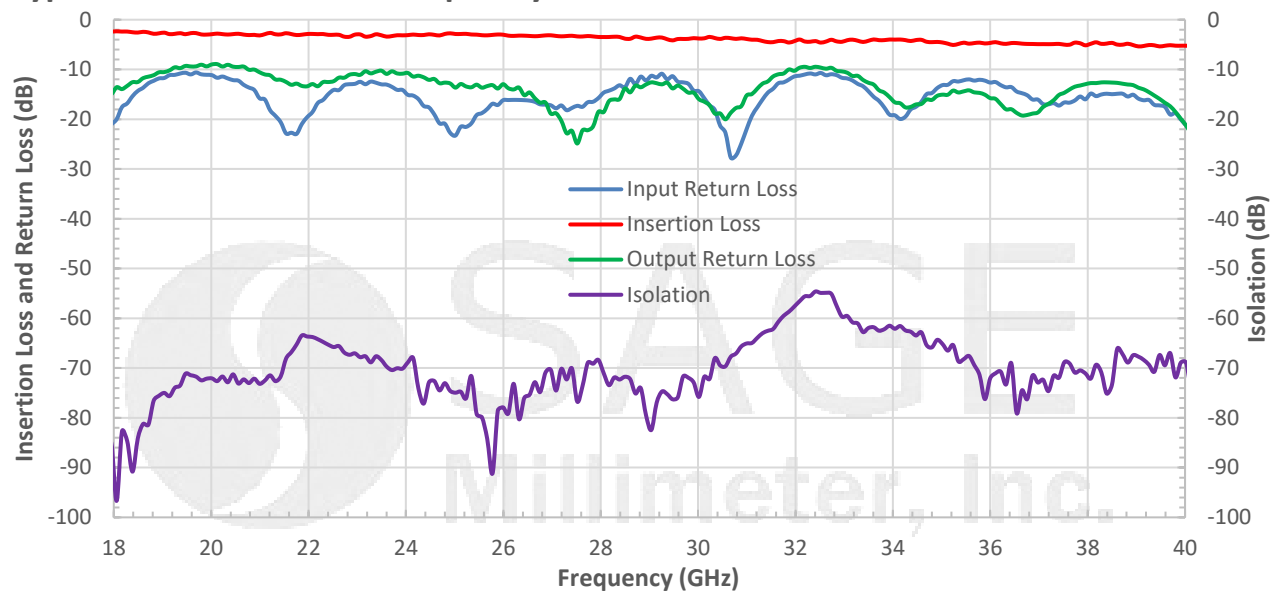
### Mechanical Specifications:

Item	Specification
Input Port	K(F)
Output Port	K(F)
Bias	Solder Pins
Logic Input	Solder Pins
Case Material	Brass
Finish	Gold Plated
Weight	1.8 Oz
Outline	K4-AC-Z1



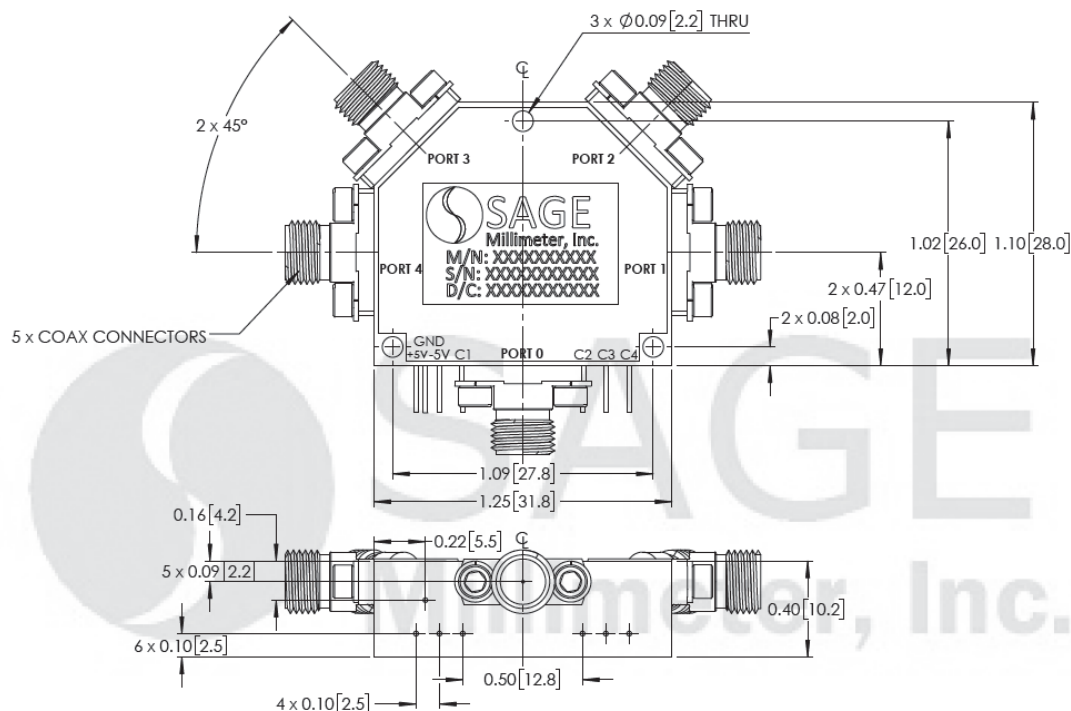
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## Typical Performance vs. Frequency



Note: The insertion loss, isolation and return loss between of other ports are similar to the above plot.

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



Truth Table				
Control TTL Input				Signal Path State
C4	C3	C2	C1	
1	1	1	0	Port 0-Port 1
1	1	0	1	Port 0-Port 2
1	0	1	1	Port 0-Port 3
0	1	1	1	Port 0-Port 4

TTL Voltages Range	
TTL Low	0 to 0.8Vdc
TTL High	2.0 to +5Vdc

Driver Bias Range	
Positive Bias	+4.5 to +5.5V/10
* Negative Bias	0 to -5.0V/50n
*Note: The higher the negative, the faster the s	



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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 of the switch will damage the device.
- The switch is a static sensitive device. Always follow ESD rules when working with the switches.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

