# SK16-05250312055-2F2F-A8

## SP16T PIN Switch with TTL Driver, Absorptive, 0.5 to 50 GHz, 4-Bit Control

**SK16-05250312055-2F2F-A8** is an absorptive PIN diode based, single pole, sixteen throw switch with a TTL driver that operates between 0.5 and 50 GHz. The switch requires a separate -5 V and +5 V biasing in addition to the 4-Bit TTL control. This model offers in-line 16 output ports, typical 12 dB insertion loss, and 55 dB typical isolation with a typical switching speed of 50 nanoseconds. The switch has 2.4 mm female connectors for all RF ports and Micro-D15 Female connector for bias and TTL control.

### Electrical Specifications:

| Parameter | Minimum | Typical | Maximum |
|---|---|---|---|
| Frequency | 0.5 GHz | | 50 GHz |
| Insertion Loss @0.5-30 GHz | | 10 dB | |
| Insertion Loss @30-50 GHz | | 12 dB | |
| Isolation @ 0.5-30 GHz | 55 dB | 60 dB | |
| Isolation @ 30-50 GHz | 45 dB | 55 dB | |
| Return Loss | | 8 dB | |
| RF Input Power | | | +20 dBm |
| Bias (Positive) | +4.75 $V_{DC}$ | +5.00 $V_{DC}$/650 mA | +5.25 $V_{DC}$ |
| Bias (Negative) | -5.25 $V_{DC}$ | -5.00 $V_{DC}$/50 mA | -4.75 $V_{DC}$ |
| Control | | 4-Bit TTL | |
| TTL High | +2.0 $V_{DC}$ | | +5.0 $V_{DC}$ |
| TTL Low | 0 $V_{DC}$ | | +0.8 $V_{DC}$ |
| Switching Speed | | 50 ns | 100 ns |
| Switch Type | | Absorptive | |
| Specification Temperature | | +25 °C | |
| Operating Temperature | -25 °C | | +85 °C |

### Mechanical Specifications:

| Item | Specification |
|---|---|
| RF Ports | 2.4 mm Female |
| Bias & Control Port | Micro-D15 Female |
| Case Material | Aluminum |
| Finish | Gold Plated |
| Weight | 7.1 Oz |
| Outline | K16-AC-Z3 |

### ECCN

EAR99

### FEATURES

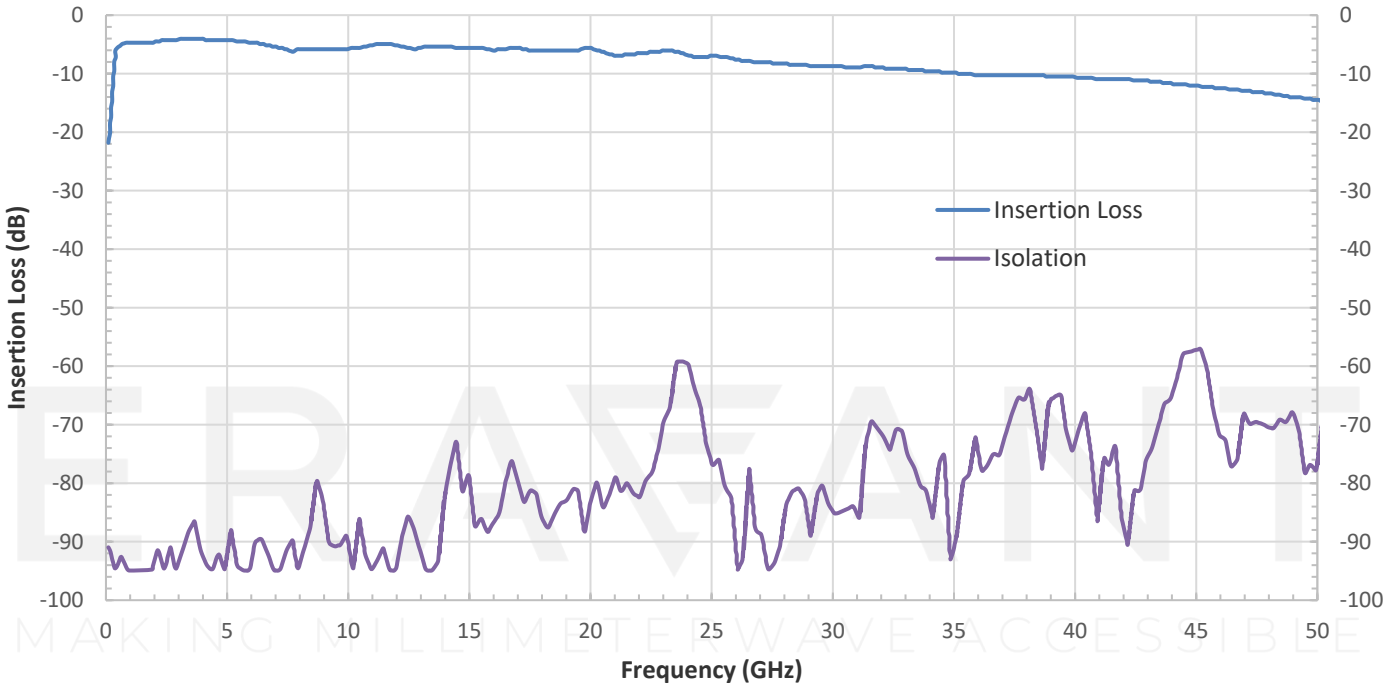
- Low Insertion Loss
- High Isolation
- Absorptive
- TTL Controlled

### APPLICATIONS

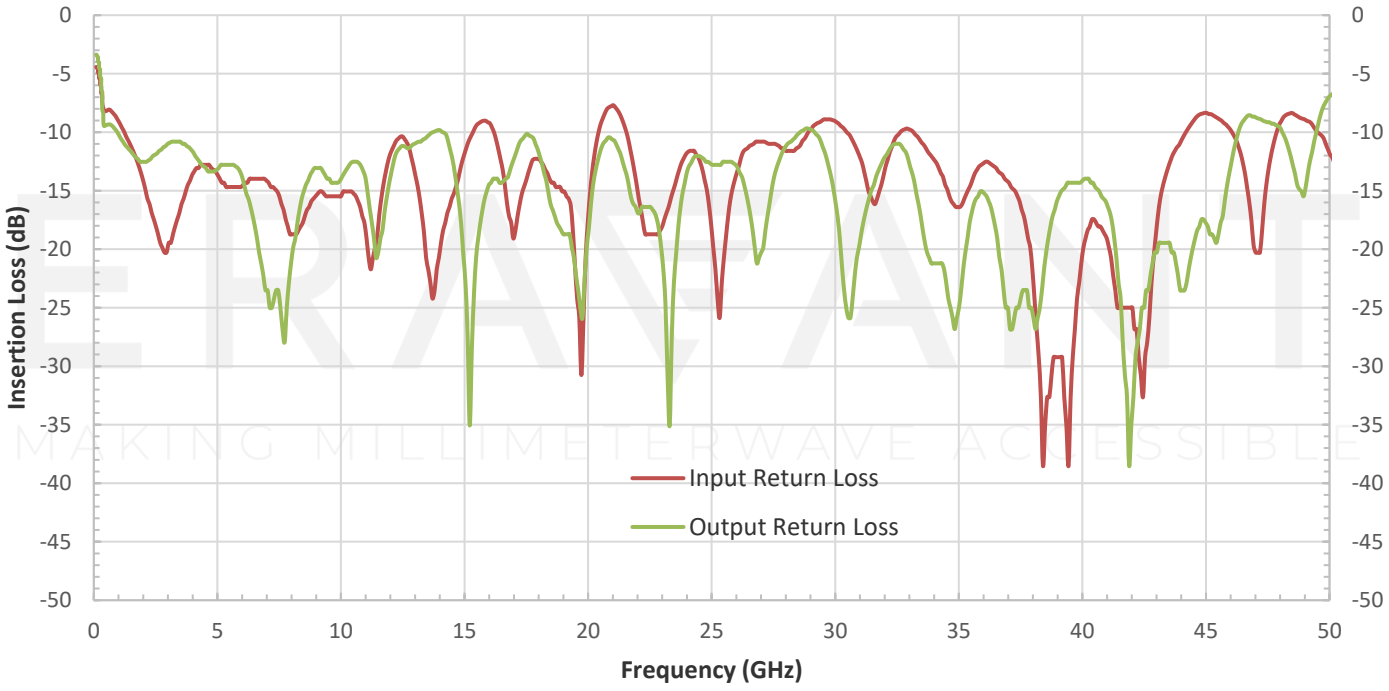
- Automatic Test Equipment
- Switching Network

### SUPPLEMENTAL DETAILS

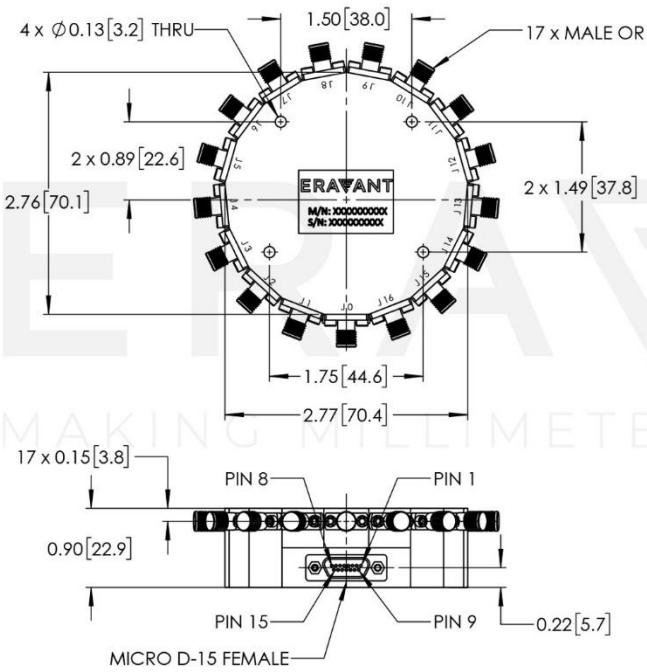
## Typical Performance vs. Frequency




## Typical Performance vs. Frequency



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




| MICRO-D15 Female Define | |
|---|---|
| 1 | C1 |
| 2 | C2 |
| 3 | C3 |
| 4 | C4 |
| 5 | NC |
| 6 | NC |
| 7 | NC |
| 8 | NC |
| 9 | GND |
| 10 | +5V |
| 11 | -5V |
| 12 | GND |
| 13 | +5V |
| 14 | -5V |
| 15 | NC |

| Truth Table | | | | |
|---|---|---|---|---|
| Control Input TTL | | | | Signal Path State |
| C4 | C3 | C2 | C1 | |
| 0 | 0 | 0 | 0 | J0-J1 |
| 0 | 0 | 0 | 1 | J0-J2 |
| 0 | 0 | 1 | 0 | J0-J3 |
| 0 | 0 | 1 | 1 | J0-J4 |
| 0 | 1 | 0 | 0 | J0-J5 |
| 0 | 1 | 0 | 1 | J0-J6 |
| 0 | 1 | 1 | 0 | J0-J7 |
| 0 | 1 | 1 | 1 | J0-J8 |
| 1 | 0 | 0 | 0 | J0-J9 |
| 1 | 0 | 0 | 1 | J0-J10 |
| 1 | 0 | 1 | 0 | J0-J11 |
| 1 | 0 | 1 | 1 | J0-J12 |
| 1 | 1 | 0 | 0 | J0-J13 |
| 1 | 1 | 0 | 1 | J0-J14 |
| 1 | 1 | 1 | 0 | J0-J15 |
| 1 | 1 | 1 | 1 | J0-J16 |

**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.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- Other mechanical configurations are available under different model numbers.
- Eravant reserves the right to change the information presented without notice.

**CAUTION:**

- Exceeding absolute maximum ratings shown will damage the device.
- The switch is static sensitive device. Always follow ESD rules when working with the switch.
- Reversing polarity will destroy the device.
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model SCH-08008-S1 is highly recommended.