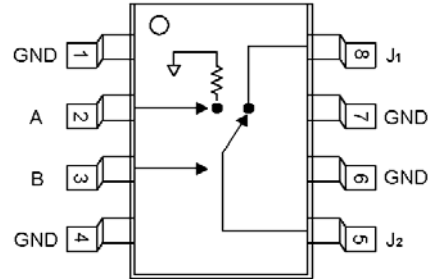


➤ **Features ver2.04**

- Low Power Loss: 50 μW
- Low Insertion: 1.0 dB
- High Isolation: 35dB@2GHz
- IP3: 45 dBm
- J2 Port Non-Reflective
- SOIC-8 Packaging

➤ **Description**

K109 is a GaAs MMIC SPST switch in a low-cost SOIC-8 plastic package. The switch makes features with high isolation and low insertion loss with +5V control voltage operation. The switch is used in many various telecommunication applications include mobile telephone and GSM/CDMA base station.



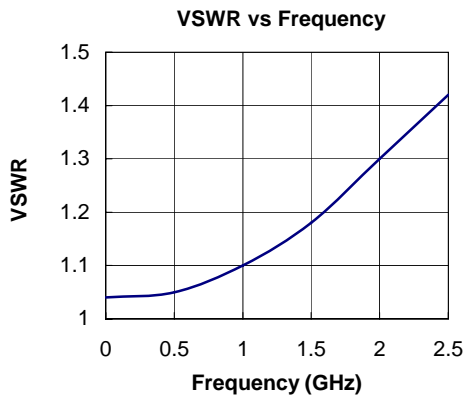
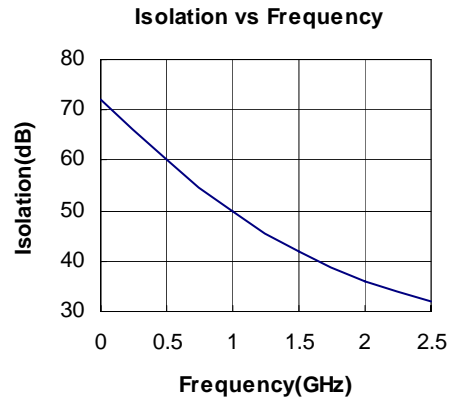
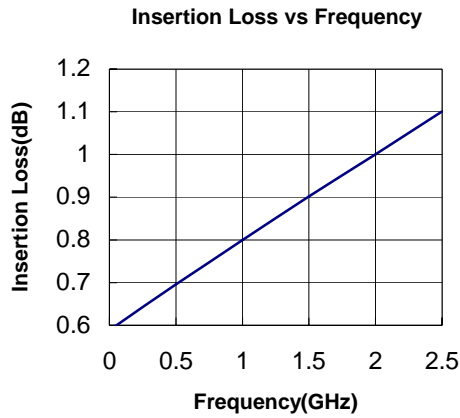
➤ **Typical Electrical Specification at 25°C (0, -5V)**

| Parameter ¹ | | Frequency | Min. | Typ. | Max. | Units. |
|--|---|------------|------|-------|------|--------|
| Insertion Loss ² | | DC~0.1GHz | | 0.5 | 0.6 | dB |
| | | DC~0.5GHz | | 0.8 | 1.0 | dB |
| | | DC~1.0GHz | | 0.9 | 1.2 | dB |
| | | DC~2.0GHz | | 1.2 | 1.4 | dB |
| Isolation | | DC~0.1GHz | 62 | 65 | | dB |
| | | DC~0.5GHz | 55 | 59 | | dB |
| | | DC~1.0GHz | 45 | 49 | | dB |
| | | DC~2.0GHz | 32 | 36 | | dB |
| VSWR ³ (on) (off) ³ | | DC~2.0GHz | | 1.2:1 | | |
| | | DC~2.0GHz | | 1.3:1 | | |
| Trise, Tfall | 10%-90% or 90%-10 %RF | | | 50 | | ns |
| Ton, Toff | 50%CTL to 90/10% RF) | | | 50 | | ns |
| IP ₃ | Two-tone, input power +5dBm | 0.5-2.0GHz | | 45 | | dBm |
| P ₋₁ | | 0.5-2.0GHz | | 23 | | dBm |
| Control Voltages | V _{LOW} =0~-0.2V@20 μ A Max. V _{HIGH} =-5V@20 μ A Max. to -8V@100 μ A Max. | | | | | |

1. All measurements in a 50-Ω system, unless otherwise specified.
2. . Insertion Loss changes 0.3dB at 85°C.
3. Insertion Loss state and J2 port.

➤ **Typical Performance Curves**

(0, +5V)



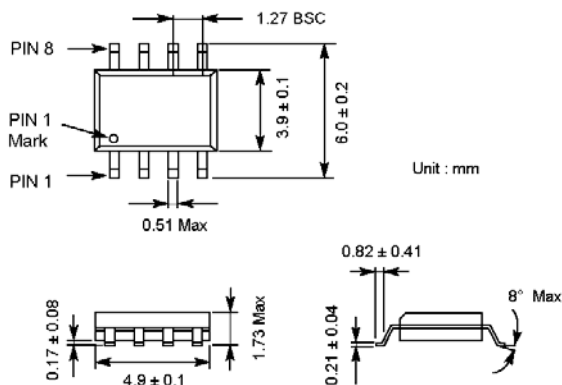
➤ **Truth Table**

| A | B | J ₁ -J ₂ |
|---|---|--------------------------------|
| 1 | 0 | ON |
| 0 | 1 | OFF |

“0” : 0~-0.2V @ 20 μA max ;

“1” : -5V @ 20 μA type to -8V @ 100 μA max.

➤ **SOIC-8 Outline Dimension**



➤ **Absolute Maximum Ratings**

| Characteristic | Value |
|-----------------------|--------------------------------|
| Maximum Input Power | 2.5W, >500MHz, 0.5W, 50MHz, |
| Control Voltage | -8.5V |
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -65°C to 150°C |
| θ _{JC} | 25°C/W |

1. Operation of this device above any one of these parameters may cause permanent damage.