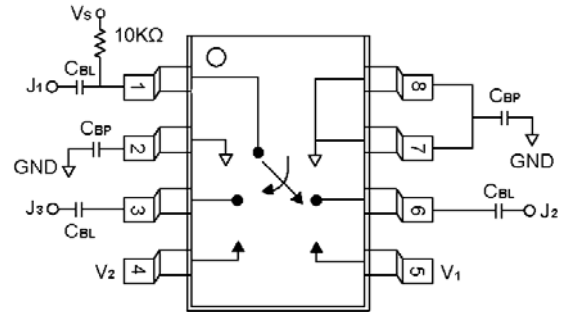


➤ **Features ver2.04**

- High Isolation ([35dB@0.9GHz](#))
- Low Insertion Loss ([0.4dB@0.9GHz](#))
- Reflective Switch
- SOIC-8 Packaging

➤ **Description**

K105 is a GaAs MMIC SPDT switch in a low-cost SOIC-8 plastic package. The switch makes features with high isolation and low insertion loss. IT can work in the two control status of (0V, -5V) or (5V, 0V) .It is a general SPDT switch.



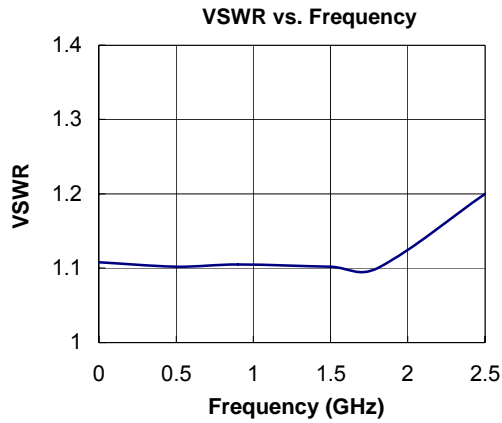
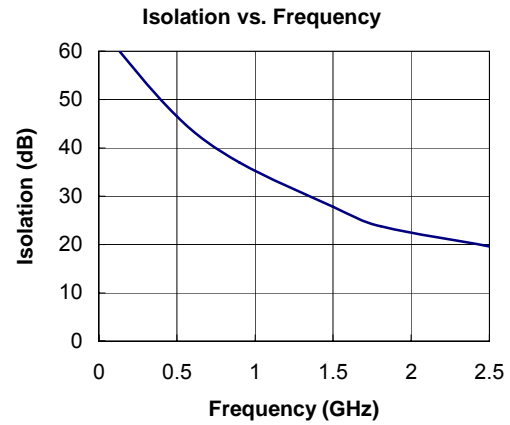
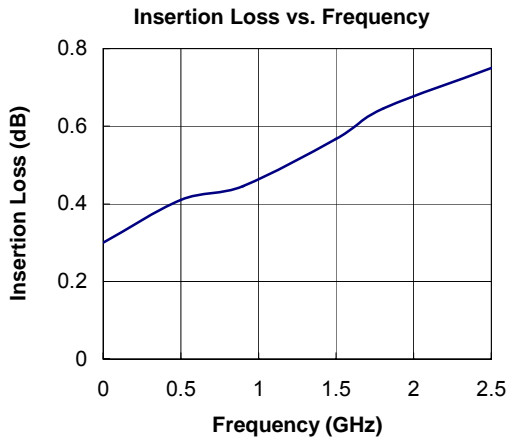
DC blocking Capacitors (C_{BL}) and bypass Capacitors (C_{BP}) must be supplied for positive operation.
 $C_{BL}=100\text{pF}$, $C_{BP}=1000\text{pF}$ for operation $>500\text{MHz}$.

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

Characteristic		Frequency	Min.	Typical	Max.	Unit
Insertion Loss		DC-0.1GHz		0.3	0.5	dB
		DC-0.5GHz		0.4	0.5	dB
		DC-1.0GHz		0.4	0.7	dB
		DC-2.0GHz		0.6	0.8	dB
		DC-2.5GHz		0.7	0.9	dB
Isolation		DC-0.1GHz	55	60		dB
		DC-0.5GHz	40	45		dB
		DC-1.0GHz	30	35		dB
		DC-2.0GHz	20	22		dB
		DC-2.5GHz	17	20		dB
VSWR ³		DC-2.0GHz			1.2: 1	
		DC-2.5GHz			1.5: 1	
Switch Characteristic	Rise or Fall(10/90%or90/10 %RF)			20		ns
	On or Off(50%or90/10% RF)			50		ns
IP ₃	Two-tone, input power +5dBm	0.5-2.0GHz		+40		dBm
P ₋₁		0.5-2.0GHz		27		dBm
Control Voltage	$V_{Low}=0-0.2\text{V}@20\mu\text{A Max.}$ $V_{High}=-5\text{V}@20\mu\text{A Max. to }-7\text{V}@100\mu\text{A Max.}$					

1. All measurements in a 50-Ω system, unless otherwise specified.
2. DC=300kHz.
3. Insertion Loss changes 0.3dB at 85°C.
4. Insertion Loss state

➤ **Typical Performance Curves**
(0, -5V)



➤ **Truth Table**

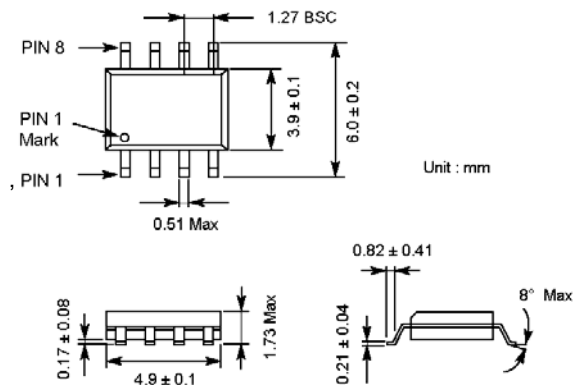
Negative Voltage Operation:

V ₁	V ₂	J ₁ -J ₂	J ₁ -J ₃
0	-5	OFF	ON
-5	0	ON	OFF

Positive Voltage Operation: (V_{HIGH}=+5 to +7V, V_S=V_{HIGH}±0.2V)

V ₁	V ₂	J ₁ -J ₂	J ₁ -J ₃
V _{HIGH}	0	OFF	ON
0	V _{HIGH}	ON	OFF

➤ **SOIC-8 Outline Dimensions**



➤ **Absolute Maximum Ratings**

Item	Value
RF Input Frequency	2W, >500MHz, 0/-8V 0.5W, 50MHz, 0/-8V
Control Voltage	-0.2V, -8V
Operation Temperature	-40°C to 85°C
S	-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