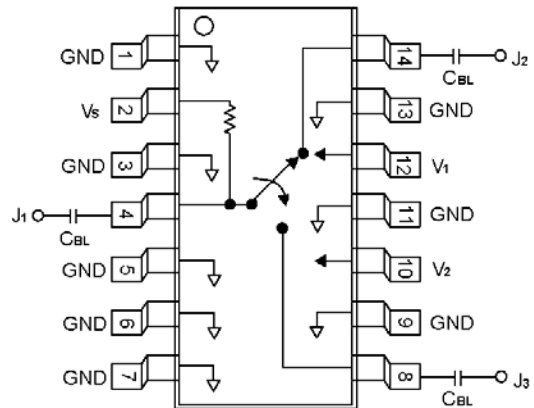


➤ **Features ver3.06**

- Two Positive Control Voltage
- High Isolation (50 dB @ 0.9 GHz and 1.9 GHz)
- Low DC Power Consumption
- SOIC-14 Plastic Package
- Reflective switch
- Lead (Pb)-free, RoHS-compliant packaging

➤ **Description**

**K108** is a GaAs MMIC SPDT switch in a low-cost SOIC-14 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 GSA/CDMA base station.



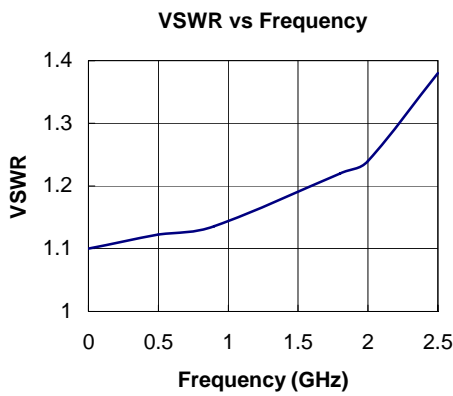
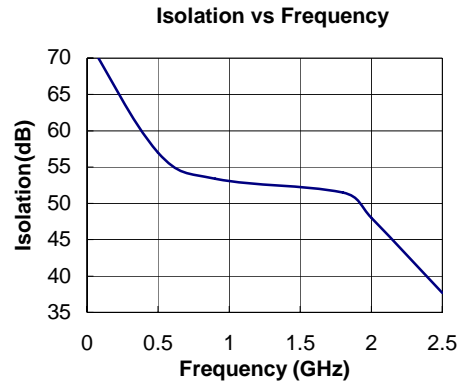
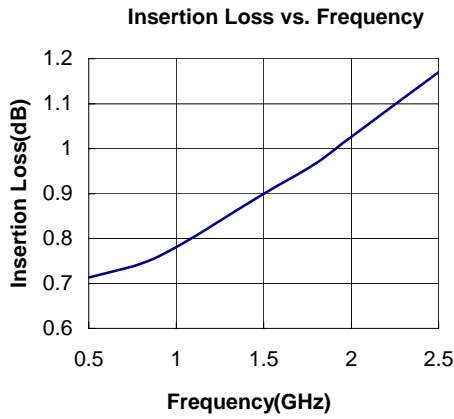
DC blocking Capacitors ( $C_{BL}$ ) must be supplied for positive operation.  
 $C_{BL}=100\text{pF}$  for operation  $>500\text{MHz}$ .

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

Parameter <sup>1</sup>		Frequency <sup>2</sup>	Min.	Typ.	Max.	Units.
Insertion Loss <sup>2,3</sup>		DC-1.0GHz		0.6	0.9	dB
		DC-2.0GHz		0.8	1.1	dB
		DC-2.5GHz		1.2	1.4	dB
Isolation		DC-1.0GHz	44	50		dB
		DC-2.0GHz	45	50		dB
		DC-2.5GHz	33	40		dB
VSWR <sup>4</sup>		DC-2.0GHz		1.3:1	1.4:1	
		DC-2.5GHz		1.4:1	1.7:1	
Trise, Tfall	10%-90% or 90%-10 %RF			100		ns
Ton, Toff	50%CTL to 90/10% RF)			200		ns
IP <sub>3</sub>	Two-tone, input power +5dBm	0.5-2.0GHz		+40		dBm
P <sub>-1</sub>		0.5-2.0GHz		+30		dBm
Control Voltages	$V_{Low}=0-0.2V @ 20 \mu A \text{ Max.}$ $V_{High}=+5V @ 100 \mu A \text{ Max. to } +7V @ 200 \mu A \text{ Max.}$ $V_S = V_{High} \pm 0.2V$					

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**

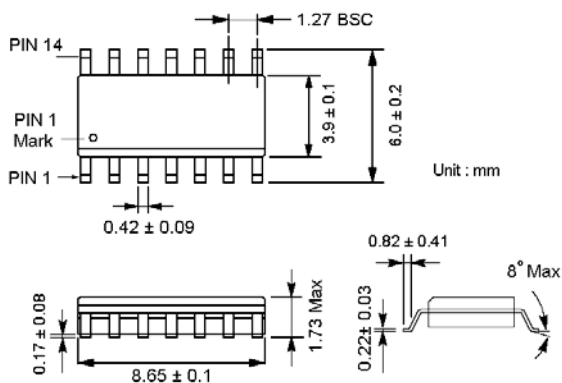
V <sub>1</sub>	V <sub>2</sub>	J <sub>1</sub> -J <sub>2</sub>	J <sub>1</sub> -J <sub>3</sub>
V <sub>HIGH</sub>	0	OFF	ON
0	V <sub>HIGH</sub>	ON	OFF

V<sub>HIGH</sub>=+5 to +7V (V<sub>S</sub>=V<sub>HIGH</sub>±0.2V).

➤ **Absolute Maximum Ratings**

Characteristic	Value
Maximum Input Power	1 W Max. > 500 MHz, 0/+8V Control
Supply Voltage	+8V
Control Voltage	-0.2V, +8V
Operating Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C
θ <sub>JC</sub>	25°C/W

➤ **SOIC-14 Outline Dimensions**



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