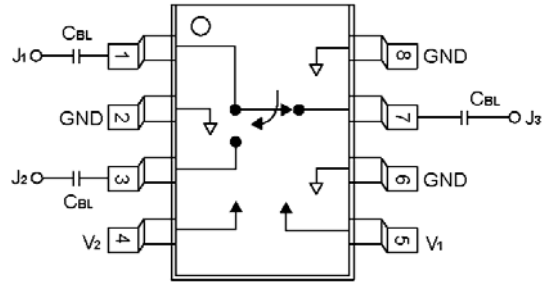


➤ **Features ver3.06**

Power T/R switch  
 $P_{-1\text{ dB}} > 10\text{ W @ } 0.9\text{ GHz}$   
 High Isolation 30dB@0.9GHz  
 SOIC-8 Plastic Package

➤ **Description**

**K110** is a high power GaAs MMIC SPDT switch in a low-cost SOIC-8 plastic package. It can be controlled with positive, negative or a combination of both voltages. This switch is used where extremely high linearity is required. This switch can be used in many analog and digital wireless communication systems including cellular, GSM and PCS applications.



Only if  $V_{\text{HIGH}} > 0$ , DC blocking Capacitors ( $C_{\text{BL}}$ ) must be supplied for positive operation.  
 $C_{\text{BL}} = 100\text{pF}$  for operation  $> 500\text{MHz}$ .

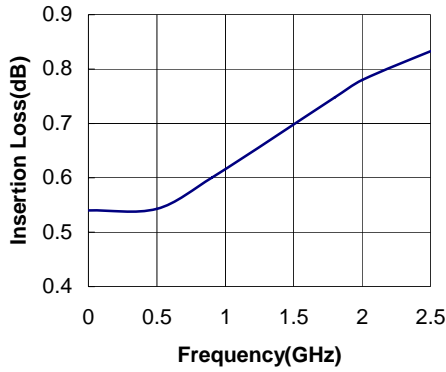
➤ **Typical Electrical Specification at 25°C (0,-5V)**

Parameter <sup>1</sup>		Frequency <sup>2</sup>	Min.	Typ.	Max.	Unit s.
Insertion Loss <sup>3</sup>		DC-0.5GHz		0.5	0.7	dB
		DC-1.0GHz		0.6	0.8	dB
		DC-2.5GHz		0.7	0.9	dB
Isolation		DC-0.5GHz	32	34		dB
		DC-1.0GHz	26	30		dB
		DC-2.5GHz	19	23		dB
VSWR		DC-1.0GHz		1.2:1	1.4:1	
		DC-2.5GHz		1.3:1	1.5:1	
Trise, Tfall	10%-90% or 90%-10 %RF			12		ns
Ton, Toff	50%CTL to 90/10% RF)			20		ns
IP <sub>2</sub>	Two-tone, input power +13dBm	0.9GHz		+72		dBm
IP <sub>3</sub>	Two-tone, input power +13dBm	0.9GHz		+60		dBm
P <sub>-1</sub>	5V	0.9GHz		+35		dBm
	10V	0.9GHz		+40		dBm
Control Voltages	$V_{\text{Low}} = -12.0\text{ V} \leq V_{\text{Low}} \leq 0\text{ V}, 300\ \mu\text{A Max.}$ $V_{\text{High}} = 0\text{ V} \leq V_{\text{High}} \leq +12.0\text{ V}, 300\ \mu\text{A Max.}$ Differential = $+5.0\text{ V} \leq (V_{\text{High}} - V_{\text{Low}}) < +12.0\text{ V}$					

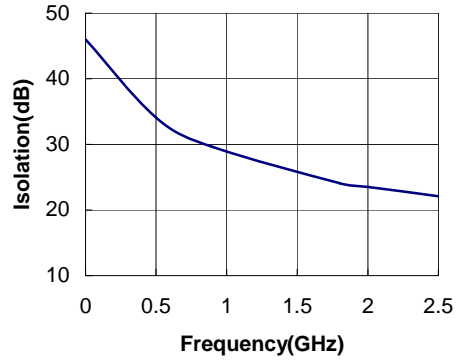
1. All measurements in a 50-Ω system, unless otherwise specified.
2. DC=300kHz
3. Insertion Loss changes 0.3dB at 85°C.

### Typical Performance Curves

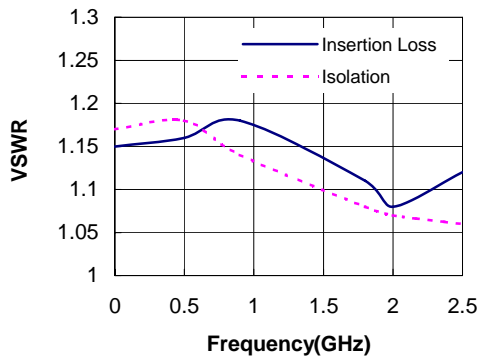
(0, -5V)  
Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR vs. Frequency



### 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>Low</sub>	V <sub>High</sub>	ON	OFF
V <sub>High</sub>	V <sub>Low</sub>	OFF	ON

V<sub>Low</sub>=0~-12.0V

V<sub>High</sub>=0~+12.0V

Differential =+5.0 V≤(V<sub>High</sub> - V<sub>Low</sub>) <+12.0 V

### Absolute Maximum Ratings

Characteristic	Value
Maximum Input Power	11W >900MHz, (0, -12V)
Control Voltage	(V <sub>High</sub> - V <sub>Low</sub> ) < 12 V
Operating Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C
θ <sub>JC</sub>	85°C/W

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

### SOIC-8 Outline Dimensions

