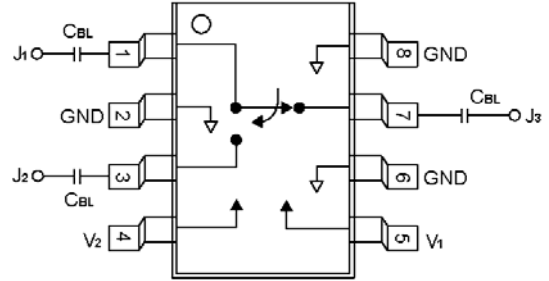


➤ **Features ver2.04**

T/R Switch  
 High reliability of high power,  $P_{-1dB} > 10\text{ W @ }0.9\text{ GHz}$   
 Low insertion loss  $0.7\text{ dB@}2\text{GHz}$   
 High isolation  $21\text{dB@}2\text{GHz}$   
 SOIC-8-EDP Package.

➤ **Description**

**K113** is a high power GaAs PHEMT MMIC SPDT switch in the package of SOIC-8-EDP. It may be controlled by positive voltage or negative voltage or the two voltage the same time, easy to use. It adapts to high rlinearity power operation, specially in mobile phone and digital wireless telecommunication, used as inside or outside antenna switch. Additionally, it also can be used in beehive, PCM, GSM or other analog digital wireless telecommunication systems. The power reliability can reach 10W.



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

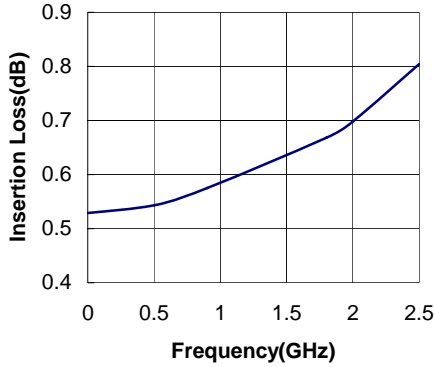
➤ **Typical Electrical Specification at 25°C (0, -5V)**

Characteristic		Frequency	Min.	Typ.	Max.	Unit
Insertion Loss		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	28	31		dB
		DC-1.0GHz	24	26		dB
		DC-2.5GHz	17	20		dB
VSWR		DC-1.0GHz		1.2:1	1.4:1	
		DC-2.5GHz		1.3:1	1.5:1	
Switch Characteristic	Rise or Fall(10/90%-90/10% RF)			12		ns
	On or Off(50%-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
1dB Press Point (P <sub>-1</sub> )	-5V	0.9GHz		+35		dBm
	-10V	0.9GHz		+40		dBm
Control Voltage	$V_{Low} = -12.0\text{ V} \leq V_{Low} \leq 0\text{ V}, 300\ \mu\text{A Max.}$ $V_{High} = 0\text{ V} \leq V_{High} \leq +12.0\text{ V}, 300\ \mu\text{A Max.}$ Differential = $+5.0\text{ V} \leq (V_{High} - V_{Low}) < +12.0\text{ V}$					

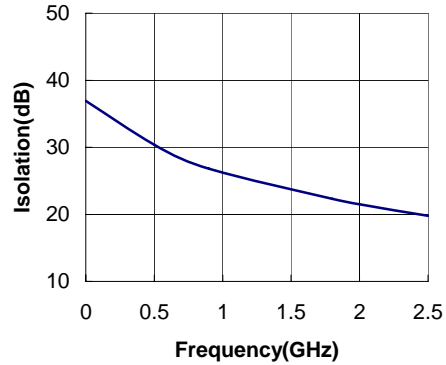
1. All measurements in a 50-Ω system, unless otherwise specified.
2. DC = 300 kHz.
3. Insertion Loss changes 0.3dB at 85°C.

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

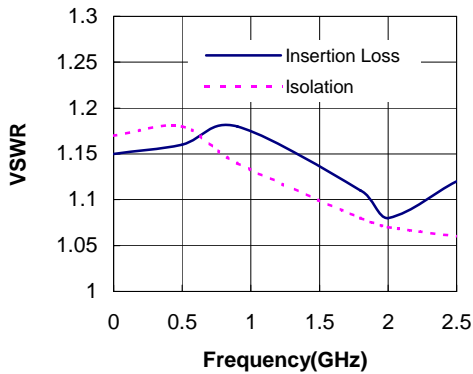
Insertion Loss vs. Frequency



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

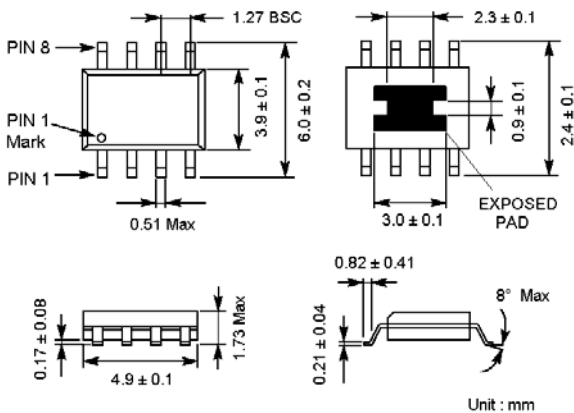
V<sub>High</sub>=0~+12.0V

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

➤ **Absolute Maximum Ratings**

Item	Value
RF input power	11W >900MHz, (0, -12V)
Control Voltage	(V <sub>High</sub> - V <sub>Low</sub> ) < 12 V
Operation Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C
θ <sub>JC</sub>	85°C/W

➤ **SOIC-8-EDP Outline Dimension**



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