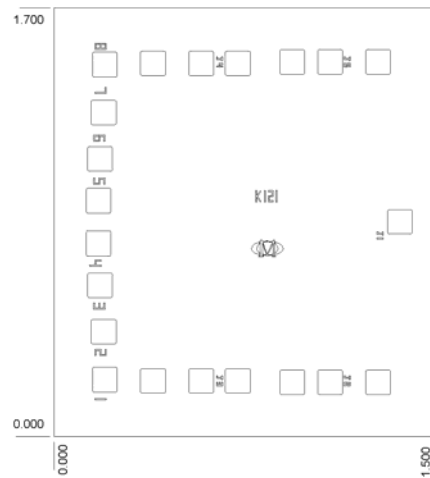


➤ **Features ver1.04**

- GaAs MMIC Chip
- High Isolation
- Non-reflective switch
- 0/+5V control voltage
- Passivation Protection

➤ **Description**

**K121** is a GaAs MMIC SP4T switch with the features of high isolation, low insertion loss in the voltage of +5V, easy to use. The switch is used in many various telecommunication applications including GSM/CDMA base station.. The chip is used by single chip to reach passivation protection. All chips are 100% tested



Unit: mm

Dimension: 0.1mm×0.1mm, Height of Chip: 0.25mm.

➤ **Typical Electrical Specification at 25°C**

Characteristic	Frequency	Min.	Typ.	Max.	Unit
Insertion Loss	DC-1.0GHz		0.9	1.0	dB
	DC-2.0GHz		1.1	1.2	dB
	DC-3.0GHz		1.4	1.6	dB
Isolation	DC-1.0GHz	50	52		dB
	DC-2.0GHz	45	48		dB
	DC-3.0GHz	36	40		dB
VSWR <sup>3</sup>	DC-1.0GHz		1.2:1	1.3:1	
	DC-2.0GHz		1.3:1	1.5:1	
	DC-3.0GHz		1.5:1	1.7:1	

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

Characteristic		Frequency	Min.	Typ.	Max	Unit
Switch Characteristic	Rise or Fall(10/90%or90/10 %RF)			20		ns
	On or Off(50%CTL to 90/10% RF)			20		ns
IP <sub>3</sub>	Two-tone, input power +13dBm	0.5-3.0GHz		40		dBm
P <sub>-1</sub>	0/+5V	0.5-3.0GHz		24		dBm
Control Power	V <sub>Low</sub> =0-0.2V@20 μ A Max. V <sub>High</sub> =5V@20 μ A Max. to 9V@100 μ A Max.					

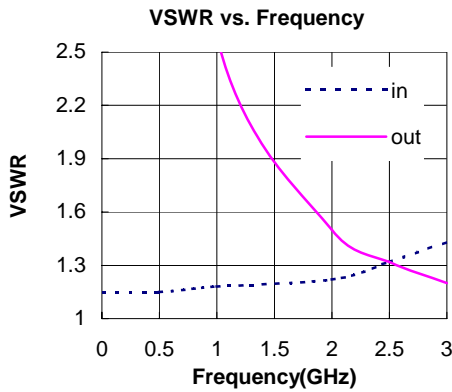
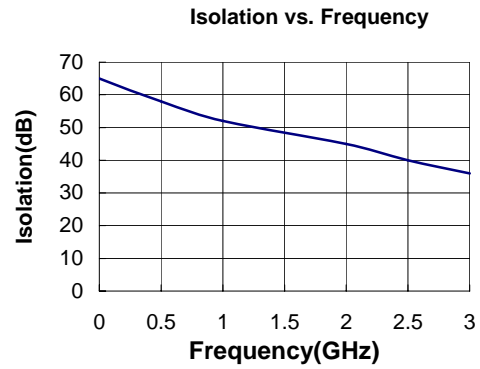
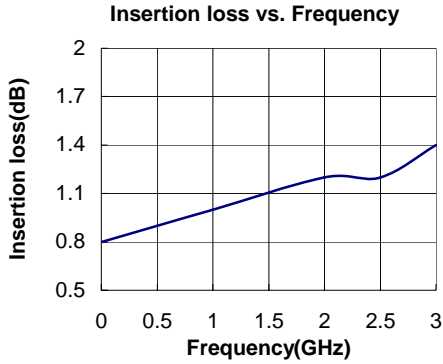
1. All measurements in a 50-Ω system, unless otherwise specified.

2. Insertion Loss changes 0.3dB at 85°C.

3. Insertion Loss state

➤ Typical Performance Curves

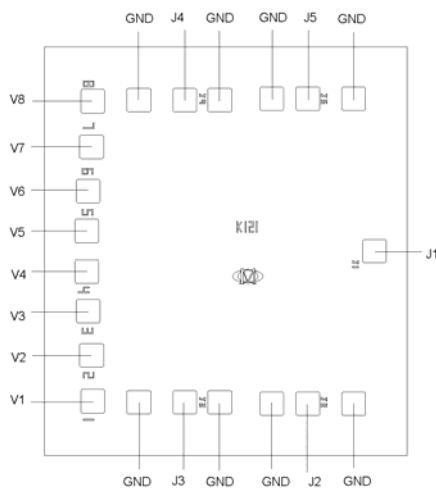
(0, 5V)



➤ Truth Table

IL J1 to	V1	V2	V3	V4	V5	V6	V7	V8
J2	5	0	0	5	0	5	0	5
J3	0	5	5	0	0	5	0	5
J4	5	0	5	0	0	5	5	0
J5	5	0	5	0	5	0	0	5

➤ Chip Picture



➤ Absolute Maximum Ratings

Item	Value
RF input power	2W, >500MHz, 0/8V
Control Voltage	-0.2V, 10V
Operation Temperature	-40°C to 85°C
Storage Temperature	-65°C to 150°C
$\theta_{JC}$	25°C/W

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