

Features

- Freq: 0.5~5GHz
- Insertion Loss: 0.8 dB
- Isolation: 70 dB
- Supply Voltage: +5V
- Control Voltage: 0/+5V
- Chip Size: 1.94mm×1.35mm×0.1mm

General Description

The HG123KA-3 is a non-reflective GaAs pHEMT SPDT switch chip. Covering 0.5 to 5 GHz, this switch offers very high isolation of 70 dB and extremely low insertion loss of 0.8 dB. This switch operates using a positive control voltage of 0/+5V, and requires +5V bias supply.

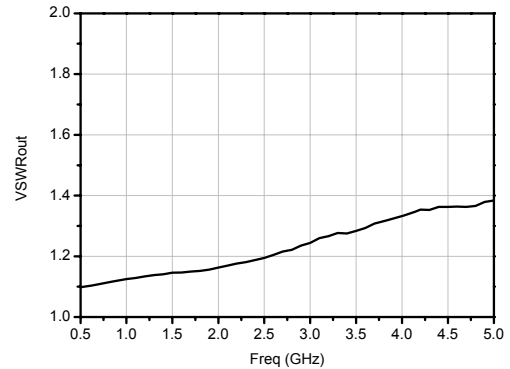
Electrical Specifications ($T_A=25^\circ\text{C}$, $V_{dd}=+5\text{V}$)

Parameter	Min.	Typ.	Max.
Frequency Range(GHz)	0.5~5		
Input VSWR	-	1.4	-
Output VSWR	-	1.2	-
Insertion Loss(dB)	-	0.8	-
Isolation(dB)	-	70	-

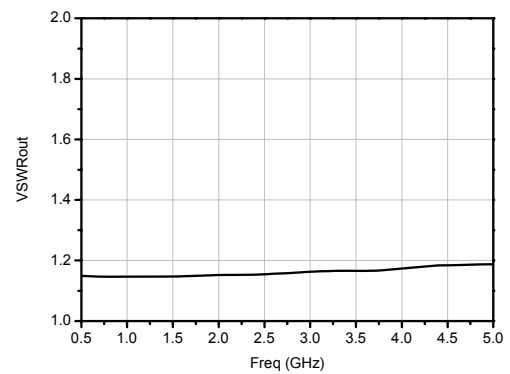
Truth Table

C2	C1	RFC-RF1	RFC-RF2
0V	0V	OFF	OFF
5V	0V	ON	OFF
0V	5V	OFF	ON
5V	5V	N/A	N/A

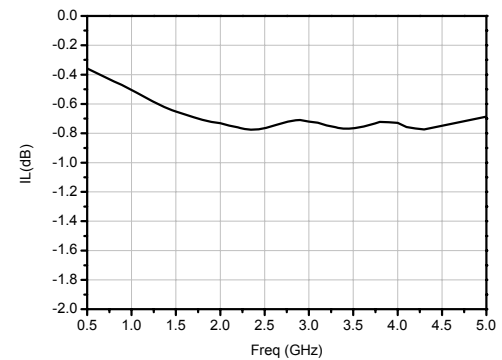
Output VSWR of Open State



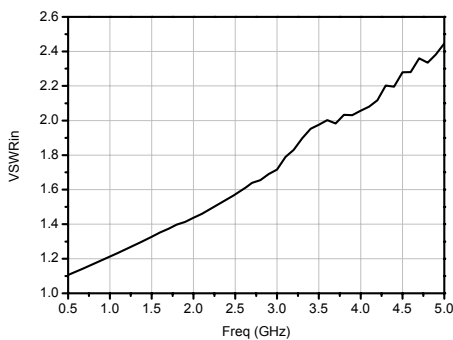
Output VSWR of Close State



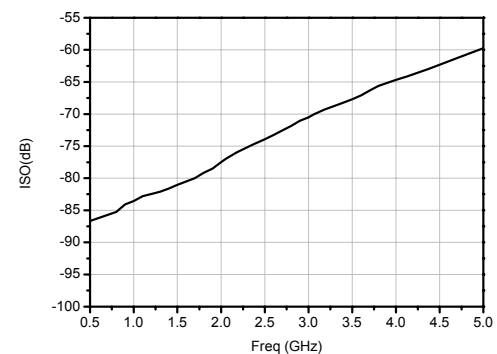
Insertion Loss



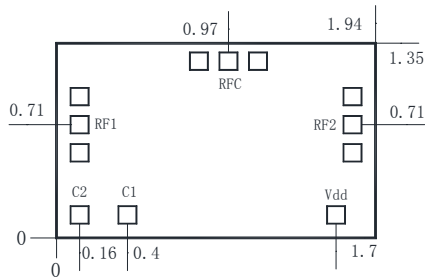
Input VSWR



Isolation



Outline Drawing (mm)



Absolute Maximum Ratings

Supply Voltage	+5.5V	
RF Input Power	+27dBm	
Control Voltage	Low Level: 0~0.5V	High Level: 3.7~5V
Operating Temperature	-55°C ~ 125°C	
Storage Temperature	-65°C ~ 150°C	

Notes:

1. The chip should be stored in a dry and nitrogen environment, and used in a clean environment.
2. GaAs material is brittle, can not touch the surface of the chip, must be careful when using.
3. The chip is welding with conductive adhesive or alloy (alloy temperature should not exceed 300°C, and no more than 30 sec.), and should make it fully grounded.
4. The chip microwave port and substrate gap is not exceeding 0.05mm, with $\Phi 25\mu\text{m}$ double gold wire bonding, suggested length of gold wire 250~400 μm .
5. Chip microwave port without DC blocking capacitor.
6. The chip is sensitive to static electricity, and should be protected against static electricity during storage and use.