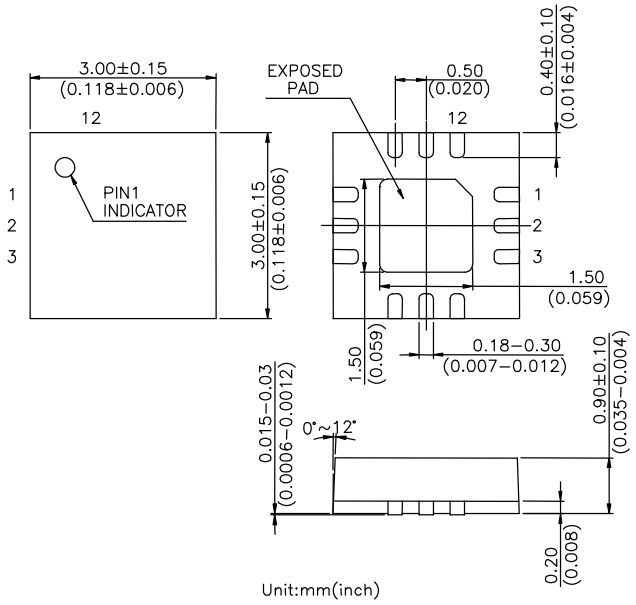
Features

- **Low Insertion Loss :** 0.40 dB @ 0.87 GHz
  0.50 dB @ 2.5 GHz
- **High Isolation:** 55 dB @ 0.87 GHz
  47 dB @ 2.5 GHz
- **50 or 75 Ohm Systems**
- **Low DC Power Consumption**
- **Miniature QFN12L (3x3 mm) Plastic Lead (Pb) Free Package**
- **RoHS (Restrict of Hazardous Substances) Compliant**

QFN12L (3 x 3 mm)



Description

The HWS429 is a GaAs SPDT terminated (non-reflective) switch operating at DC-3 GHz in a low cost QFN12L (3x3 mm) plastic lead (Pb) free package. The HWS429 features low insertion loss and high isolation with very low DC power consumption and can be used in both 50 ohm and 75 ohm systems. Typical applications include CATV and basestation systems for either SPDT or SPST functions.

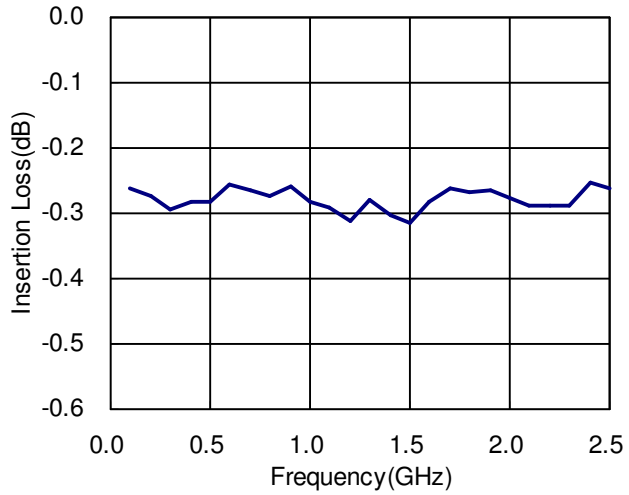
Electrical Specifications at 25℃ with 0, +3V Control Voltages, 50 Ohm system

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	DC-1.5 GHz 1.5-3.0 GHz		0.4 0.5	 0.8	dB dB
Isolation	DC-1.5 GHz 1.5-3.0 GHz	 35	53 43		dB dB
Return Loss	DC-3.0 GHz		15		dB
Input Power for One dB Compression	0.5-3.0 GHz		26		dBm
Input Third Order Intermodulation Intercept Point	0.5-3.0 GHz		45		dBm
Switching Time			50		ns
Control Current			30	300	uA

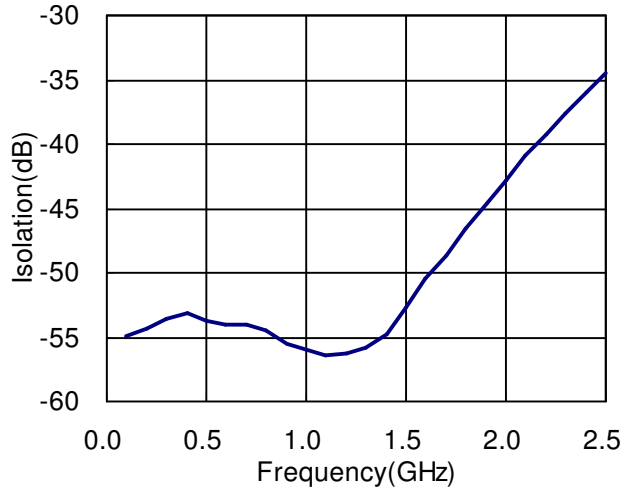
Note: All measurements made in a 50 ohm system with related application circuits and 0/+3V control voltages, unless otherwise specified.

Typical Performance Data With Application Circuit A @ +25℃

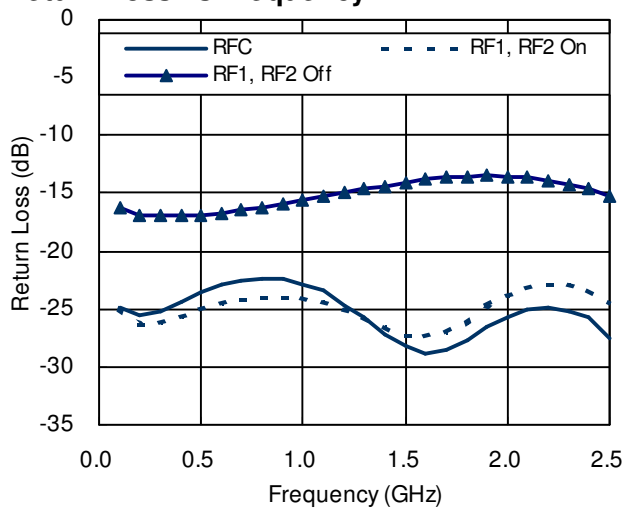
Insertion Loss vs Frequency



Isolation vs Frequency

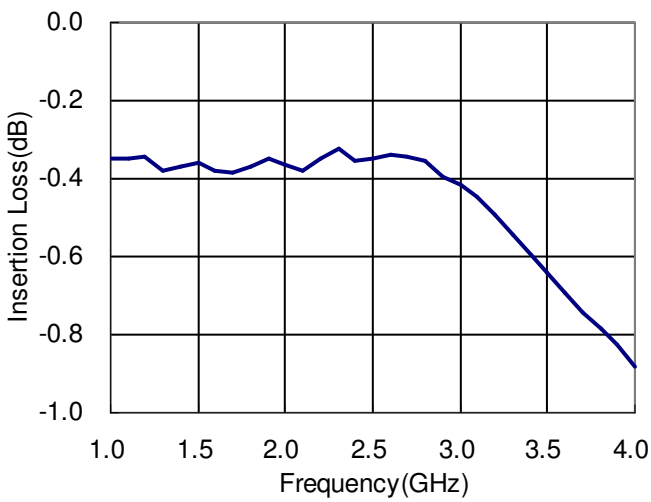


Return Loss vs Frequency

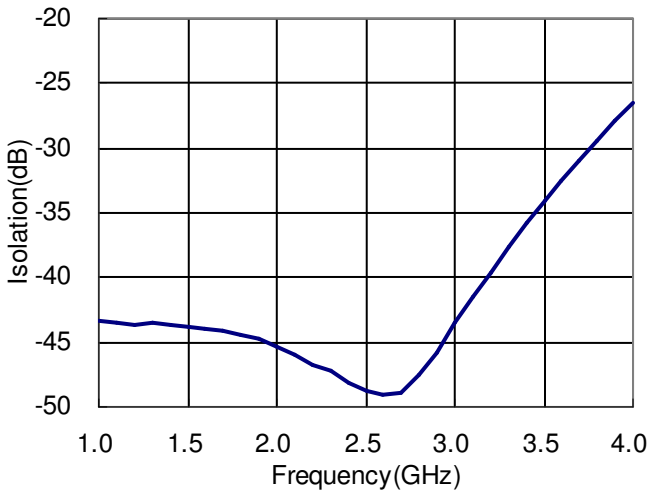


Typical Performance Data With Application Circuit B @ +25℃

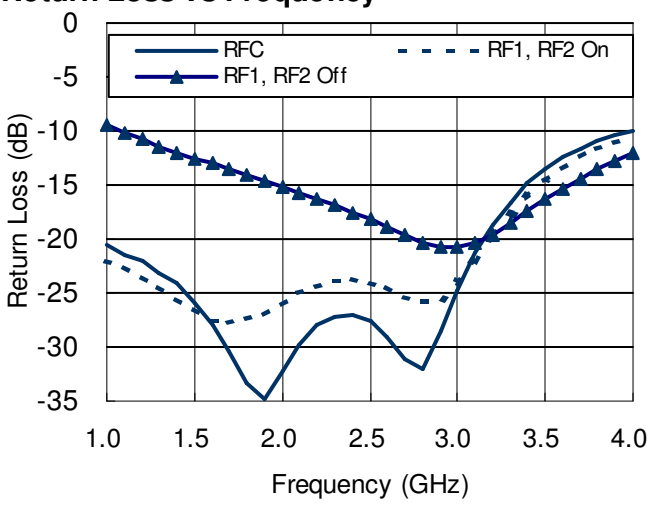
Insertion Loss vs Frequency



Isolation vs Frequency



Return Loss vs Frequency



Absolute Maximum Ratings

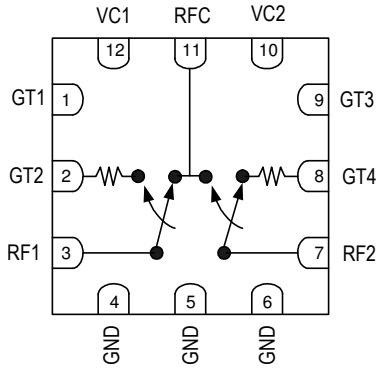
Parameter	Absolute Maximum
RF Input Power	+32 dBm @ +5V
Control Voltage	+6V
Operating Temperature	-40℃ to +85℃
Storage Temperature	-65℃ to +150℃

Logic Table for Switch On-Path

VC1	VC2	RFC-RF1	RFC-RF2
0	1	Insertion Loss	Isolation
1	0	Isolation	Insertion Loss

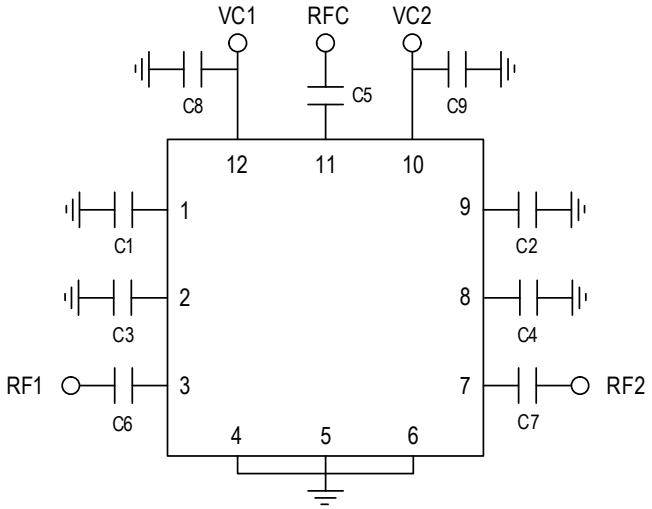
'1' = +3V to +5V
'0' = 0V to +0.2V

Pin Out (Top View)



Exposed pad in the bottom must be connected to ground by via holes.

Application Circuits



Component Values:

Circuit	C1, C2	C3, C4	C5, C6, C7	C8, C9
A	47pF	330pF	1000pF	47pF
B	2pF	4pF	47pF	47pF

Note: Circuit A and B are optimized for DC-1.5 GHz and 1.5-3.0 GHz, respectively.