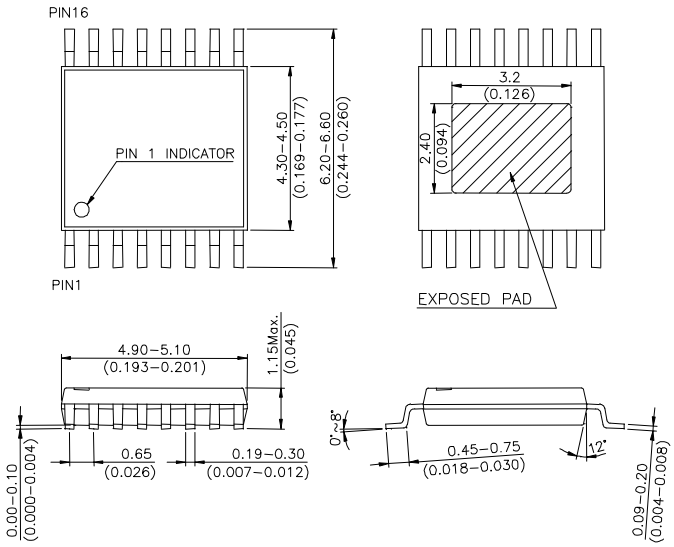
Features

- **Four Inputs, Two Outputs switch**
- **Insertion Loss:** 5.5 dB
- **Isolation:** 30.5 dB
- **Low DC Power Consumption**
- **Small TSSOP16 Plastic Package**
- **PHEMT process**

TSSOP-16



Description

The HWS388 is a GaAs PHEMT 4x2 switch operating at 0.95 to 2.15 GHz in a low cost TSSOP16 plastic package. Any of the four inputs can be directed to any of the two outputs. The HWS388 is suitable for use in Direct Broadcast Satellite (DBS) switching system applications.

Electrical Specifications at 25℃ with 0V/+5V Control Voltages and 0 dBm Pin

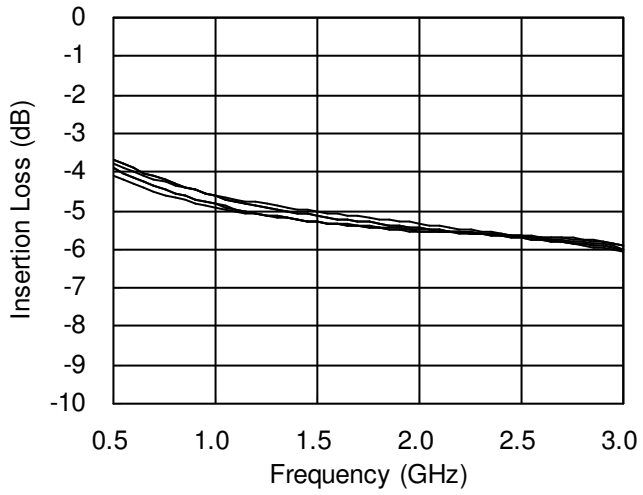
Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Insertion Loss	0.95-2.15 GHz		5.5	7.0	dB
Insertion Loss Flatness	0.95-2.15 GHz		1.0		dB
Isolation (Above Insertion Loss)	0.95-1.50 GHz 1.50-2.15 GHz	25.0 22.0	28.0 25.0		dB dB
Output Return Loss	0.95-2.15 GHz		15		dB
Control Current	Per control pin			500	uA

Note: 1. All measurements made in a 50 ohm system with 0/+5.0V control voltages, unless otherwise specified.

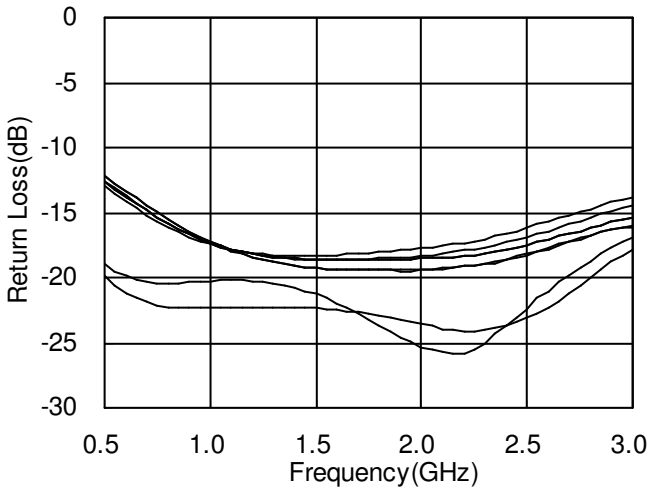
2. 'Isolation (Above Insertion Loss)' = ｜'isolation (off-state)' – 'insertion loss (on-state)'｜

Typical Performance Data of Various States @ +25℃

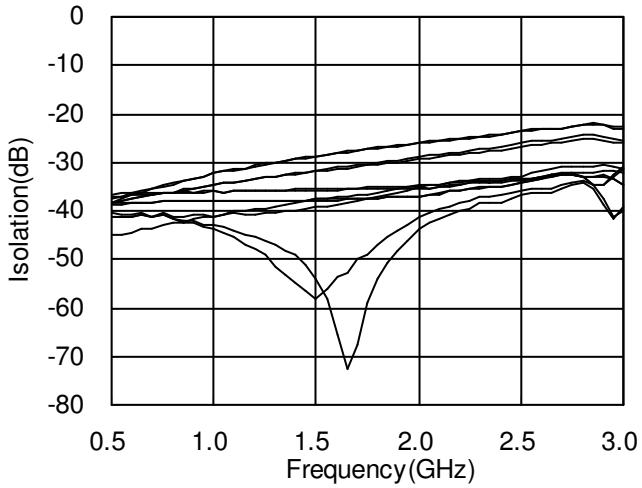
Insertion Loss vs Frequency



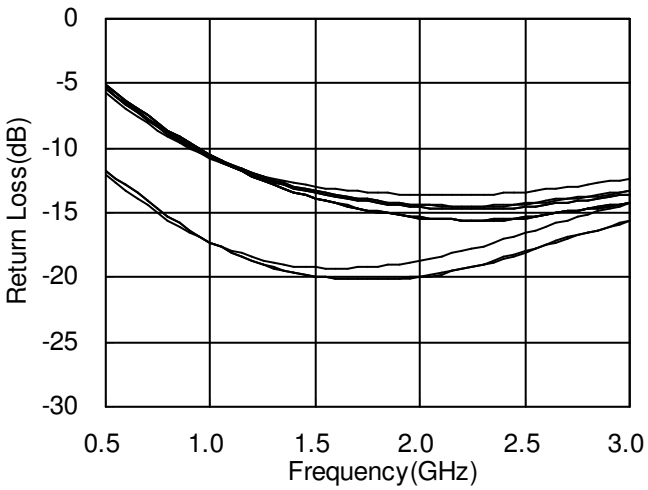
Input Return Loss(On-Path) vs Frequency



Isolation* vs Frequency

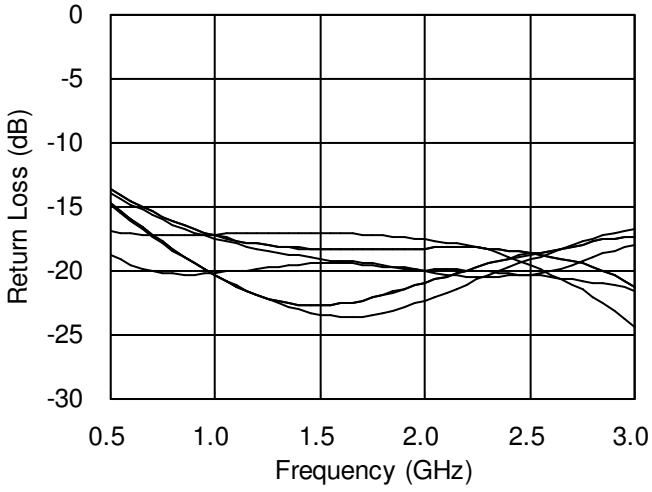


Input Return Loss(Off-Path) vs Frequency

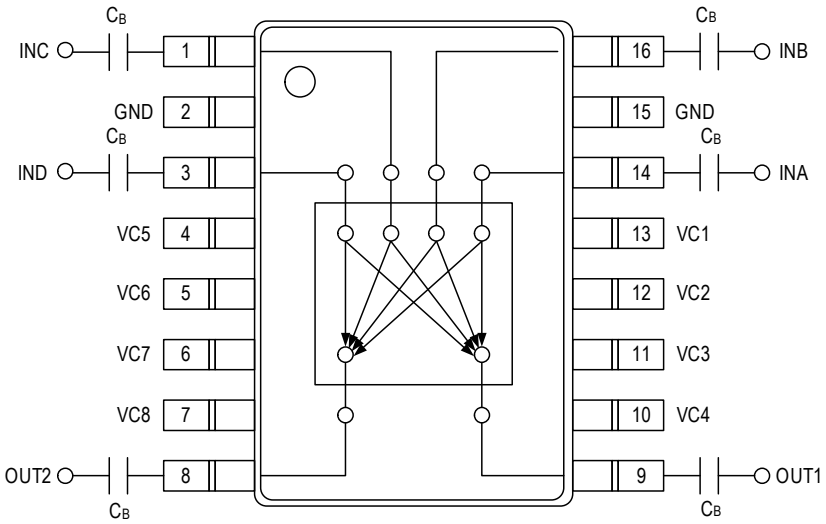


* Isolation is recorded above insertion loss.

Output Return Loss vs Frequency



Pin Out (Top View)



Note:
1. DC blocking capacitors C_B=51pF are required on all RF ports.
2. Exposed pad in the bottom must be connected to ground by via holes.

Logic Table for Switch On-Path

On Path		Control Pins							
OUT1	OUT2	VC1	VC2	VC3	VC4	VC5	VC6	VC7	VC8
INA	-	1	0	1	0	-	-	-	-
INB	-	1	0	0	1	-	-	-	-
INC	-	0	1	1	0	-	-	-	-
IND	-	0	1	0	1	-	-	-	-
-	INA	-	-	-	-	1	0	1	0
-	INB	-	-	-	-	1	0	0	1
-	INC	-	-	-	-	0	1	1	0
-	IND	-	-	-	-	0	1	0	1

'1' = +5V
'0' = 0V

Recommended Operating Conditions (T_A=+25°C)

Parameter	Min.	Typ.	Max.	Unit
Control Voltage (1)	+4.5	+5.0	+5.5	V
Control Voltage (0)	-0.5	0	+0.5	V

Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Input Power	+15 dBm @ +6V
Control Voltage	+6V
Operating Temperature	-40℃ to +85℃
Storage Temperature	-65℃ to +150℃