

# PHEMT GaAs IC High Power SP5T Switch 0.1–2 GHz



AS195-306

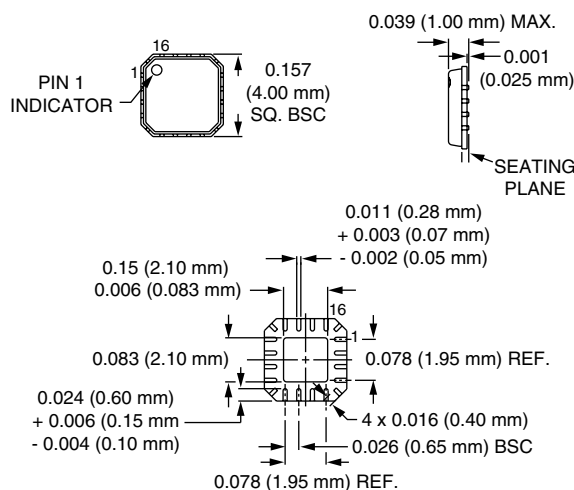
## Features

- 5 Symmetric RF Paths
- Positive Voltage Control
- High IP3
- Excellent Harmonic Performance
- Handles GSM Power Levels
- Available in MLF-16 (4 x 4 mm) Package

## Description

The AS195-300 is a reflective SP5T switch. It is an ideal switch for higher power applications. It can be used for GSM dual band handset applications where both low loss, low current and small size are critical parameters.

## MLF-16 (4 x 4 mm)



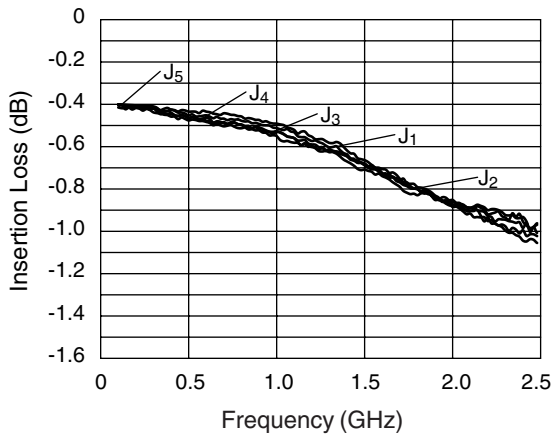
## Electrical Specifications at 25°C (0, +3 V)

Parameter		Frequency	Min.	Typ.	Max.	Unit
Insertion Loss	Ant-J <sub>1</sub> , J <sub>2</sub> , J <sub>3</sub> , J <sub>4</sub> , J <sub>5</sub>	0.1–0.5 GHz		0.5	0.7	dB
		0.5–1.0 GHz		0.6	0.8	dB
		1.0–2.0 GHz		1.0	1.1	dB
Isolation	Ant-J <sub>1</sub> , J <sub>2</sub> , J <sub>3</sub> , J <sub>4</sub> , J <sub>5</sub>	0.1–0.5 GHz	30	35		dB
		0.5–1.0 GHz	25	27		dB
		1.0–2.0 GHz	21	23		dB
VSWR		0.1–1.0 GHz		1.4:1		
		1.0–2.0 GHz		1.6:1		

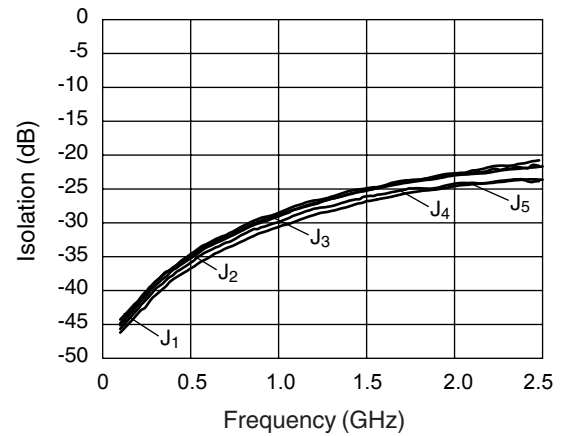
## Operating Characteristics at 25°C (0, +3 V)

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching Characteristics	Rise, Fall (10/90% or 90/10% RF)			50		ns
	On, Off (50% CTL to 90/10% RF)			100		ns
	Video Feedthru			50		mV
IP3	13 dBm/Tone			+55		dBm
2nd and 3rd Harmonics	34 dBm Input 900 MHz			+65		dBc
Control Voltages	V <sub>Low</sub> = 0 V <sub>High</sub> = +3 V @ 200 μA Max.					

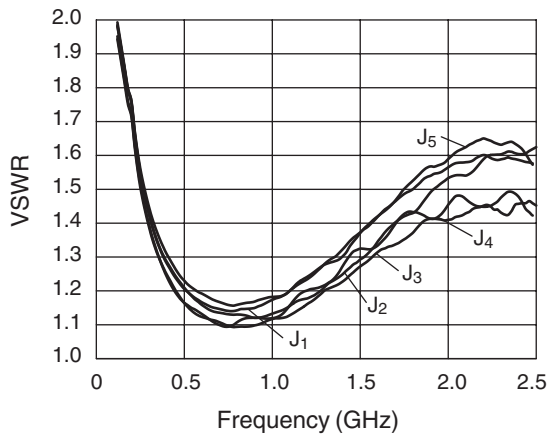
### Typical Performance Data



Typical Loss (All Paths) vs. Frequency

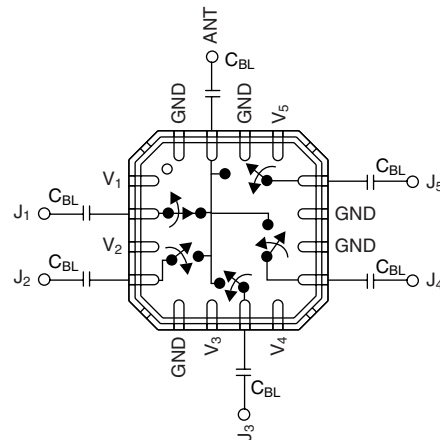


Typical Isolation (All Paths) vs. Frequency



VSWR vs. Frequency

### Pin Out



DC blocking capacitors (C<sub>BL</sub>) must be supplied externally.  
C<sub>BL</sub> = 47 pF for operating frequency >500 MHz.

### Truth Table

V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	Ant-J <sub>1</sub>	Ant-J <sub>2</sub>	Ant-J <sub>3</sub>	Ant-J <sub>4</sub>	Ant-J <sub>5</sub>
V <sub>High</sub>	0	0	0	0	Ins. Loss	Isol.	Isol.	Isol.	Isol.
0	V <sub>High</sub>	0	0	0	Isol.	Ins. Loss	Isol.	Isol.	Isol.
0	0	V <sub>High</sub>	0	0	Isol.	Isol.	Ins. Loss	Isol.	Isol.
0	0	0	V <sub>High</sub>	0	Isol.	Isol.	Isol.	Ins. Loss	Isol.
0	0	0	0	V <sub>High</sub>	Isol.	Isol.	Isol.	Isol.	Ins. Loss

"0" = 0 to 0.2 V.  
"V<sub>High</sub>" = 2.7 to 5 V.