

PHEMT GaAs IC High Power SP5T Switch 0.1–2 GHz



AS195-300

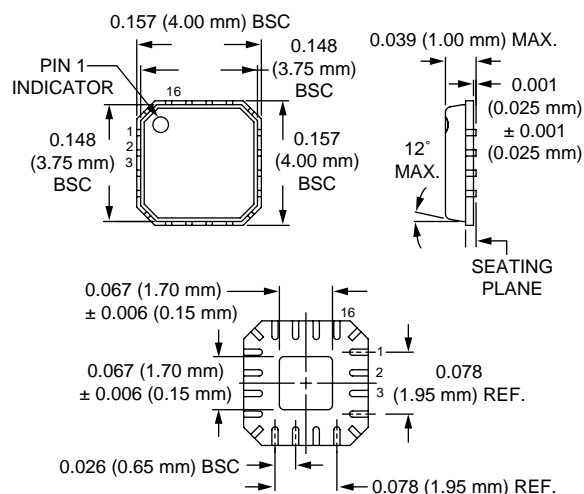
Features

- 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)



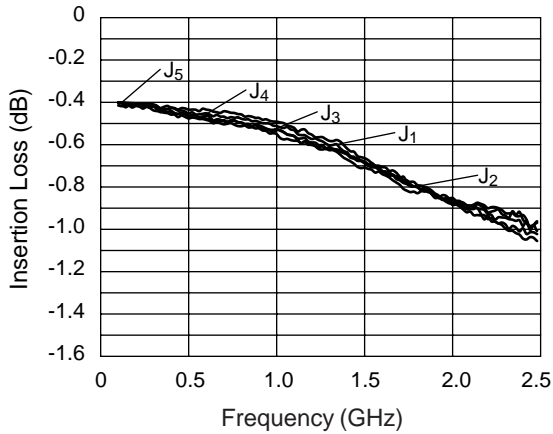
Electrical Specifications at 25°C (0, +3 V)

Parameter	Frequency	Min.	Typ.	Max.	Unit	
Insertion Loss	Ant-J ₁ , J ₂ , J ₃ , J ₄ , J ₅	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 ₁ , J ₂ , J ₃ , J ₄ , J ₅	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		

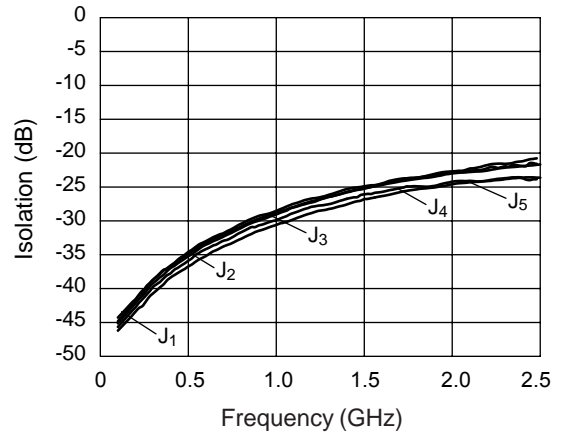
Operating Characteristics at 25°C (0, +3 V)

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 _{Low} = 0 V _{High} = +3 V @ 200 μA Max.					

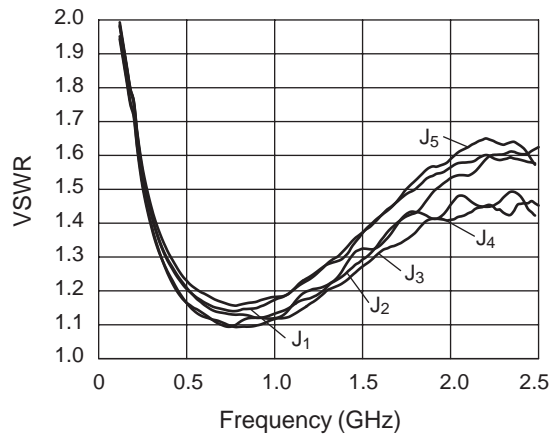
Typical Performance Data



Typical Loss (All Paths) vs. Frequency

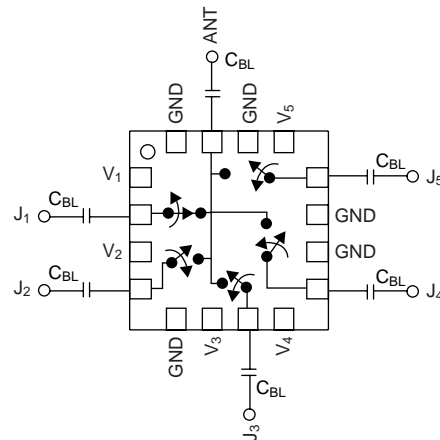


Typical Isolation (All Paths) vs. Frequency



VSWR vs. Frequency

Pin Out



DC blocking capacitors (C_{BL}) must be supplied externally.
C_{BL} = 47 pF for operating frequency >500 MHz.

Truth Table

V ₁	V ₂	V ₃	V ₄	V ₅	Ant-J ₁	Ant-J ₂	Ant-J ₃	Ant-J ₄	Ant-J ₅
V _{High}	0	0	0	0	Ins. Loss	Isol.	Isol.	Isol.	Isol.
0	V _{High}	0	0	0	Isol.	Ins. Loss	Isol.	Isol.	Isol.
0	0	V _{High}	0	0	Isol.	Isol.	Ins. Loss	Isol.	Isol.
0	0	0	V _{High}	0	Isol.	Isol.	Isol.	Ins. Loss	Isol.
0	0	0	0	V _{High}	Isol.	Isol.	Isol.	Isol.	Ins. Loss

"0" = 0 to 0.2 V.
"V_{High}" = 2.7 to 5 V.