

GaAs IC SPDT Switch Non-Reflective DC–6 GHz



AS006L2-93

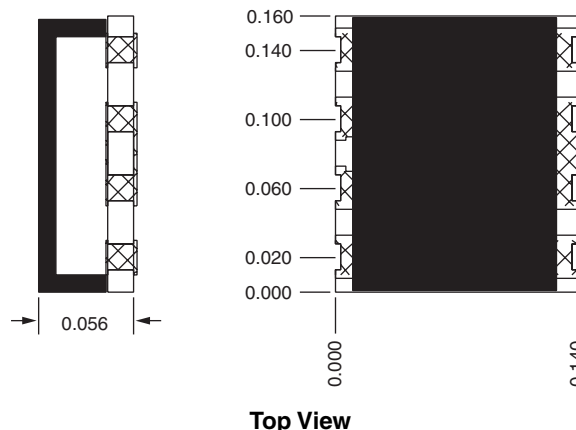
Features

- Low DC Power Consumption
- Low Loss
- Broadband DC–6 GHz
- Excellent Intermodulation Products
- Small Low Cost “Chip on Board” Package

Description

The AS006L2-93 is a GaAs IC FET SPDT low loss reflective switch. This broadband switch operates from DC–6 GHz. It is ideal for surface mount applications when requirements call for low insertion loss and medium isolation.

-93



Electrical Specifications at 25°C

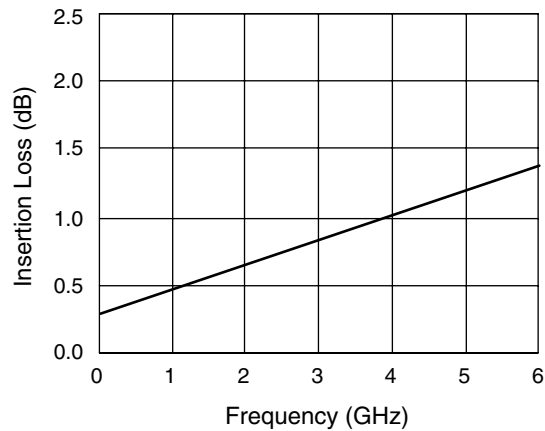
Parameter ¹	Frequency ⁴	Min.	Typ.	Max.	Unit
Insertion Loss ²	DC–1.0 GHz		0.5	0.7	dB
	DC–2.0 GHz		0.7	0.9	dB
	DC–4.0 GHz		1.0	1.2	dB
	DC–6.0 GHz		1.5	1.8	dB
Isolation	DC–1.0 GHz	35	44		dB
	DC–2.0 GHz	30	38		dB
	DC–4.0 GHz	20	24		dB
	DC–6.0 GHz	16	20		dB
VSWR (I/O)	DC–1.0 GHz		1.3:1	1.4:1	
	DC–2.0 GHz		1.4:1	1.6:1	
	DC–4.0 GHz		1.6:1	1.8:1	
	DC–6.0 GHz		1.8:1	2.0:1	

Operating Characteristics at 25°C

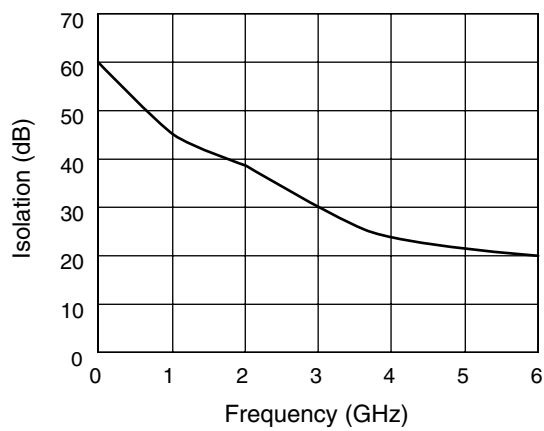
Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Switching Characteristics	Rise, Fall (10/90% or 90/10% RF)			3		ns
	On, Off (50% CTL to 90/10% RF)			6		ns
	Video Feedthru ³			20		mV
Input Power for 1 dB Compression		0.50–6 GHz		24		dBm
		0.05 GHz		16		dBm
Intermodulation Intercept Point (IP3)	For Two-tone Input Power 13 dBm	0.50–6 GHz		46		dBm
Control Voltages	$V_{Low} = 0 \text{ to } -0.2 \text{ V @ } 20 \mu\text{A Max.}$ $V_{High} = -5 \text{ V @ } 50 \mu\text{A to } -8 \text{ V @ } 200 \mu\text{A Max.}$					

1. All measurements made in a 50 Ω system, unless otherwise specified.
2. Insertion loss changes by 0.003 dB/°C.
3. Video feedthru measured with 1 ns risetime pulse and 500 MHz bandwidth.
4. DC = 300 kHz.

Typical Performance Data



Insertion Loss vs. Frequency



Isolation vs. Frequency

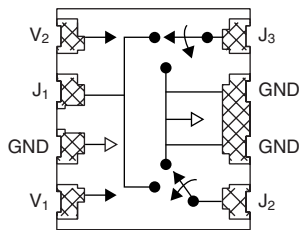
Truth Table

V ₁	V ₂	J ₁ –J ₂	J ₁ –J ₃
-5	0	Insertion Loss	Isolation
0	-5	Isolation	Insertion Loss

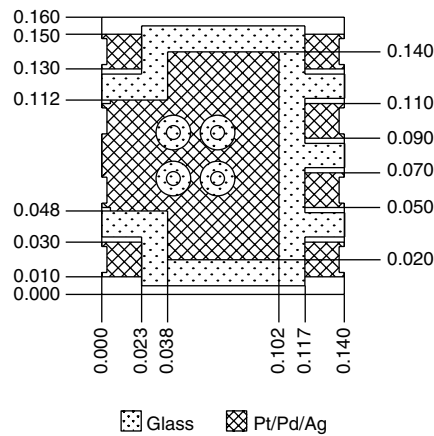
Absolute Maximum Ratings

Characteristic	Value
RF Input Power (RF In)	2 W Max. > 500 MHz 0/-8 V Control
Control Voltage (V _C)	-0.2 V, -10 V
Operating Temperature (T _{OP})	-40°C to +90°C
Storage Temperature (T _{ST})	-65°C to +150°C
Thermal Resistance (Θ _{JC})	25°C/W

Pin Out



-93



Bottom View

The “chip on board” package is a ceramic leadless chip carrier with a ceramic lid, which allows for automatic pick and place. The external terminals and backside ground plane are Pt/Pd/Ag, which is highly leach resistant and very tolerant to variations in solder conditions. The glass fingers between contacts prevent the possibility of shorted terminals. The recommended solder attachment is a SN6337 (Pb/SN).