

GaAs IC SPDT Non-Reflective Switch With Driver DC–6 GHz



AB006M2-11

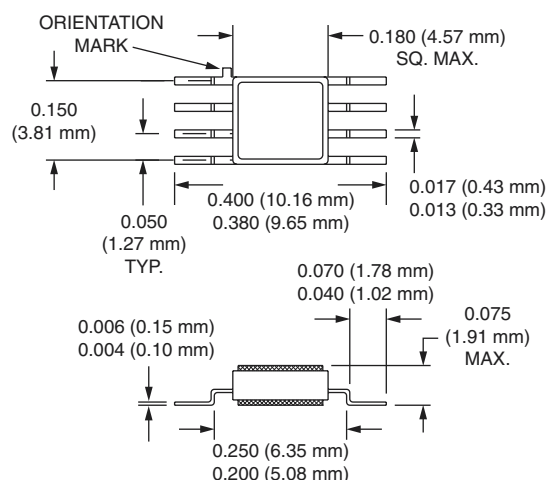
Features

- Single Positive Voltage Control (0/+5 V)
- High Isolation, Non-Reflective
- 8 Lead Hermetic Surface Mount Package
- Integrated Silicon CMOS Driver
- Capable of Meeting MIL-STD Requirements⁵

Description

The AB006M2-11 is a GaAs IC FET SPDT non-reflective switch with driver. It is useful as a modulator and switch in high reliability and commercial applications. It is ideal as building blocks for high isolation, multithrow switches. The internal driver simplifies the external circuit, thus saving PC board space and reducing component count.

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Electrical Specifications at 25°C

Parameter ¹	Frequency ⁴	Min.	Typ.	Max.	Unit
Insertion Loss ²	DC–1.0 GHz		1.0	1.2	dB
	DC–2.0 GHz		1.3	1.4	dB
	DC–4.0 GHz		1.5	1.7	dB
	DC–6.0 GHz		1.8	2.0	dB
Isolation	DC–1.0 GHz	44	46		dB
	DC–2.0 GHz	38	40		dB
	DC–4.0 GHz	30	33		dB
	DC–6.0 GHz	24	26		dB
VSWR (I/O)	DC–1.0 GHz		1.2:1	1.3:1	
	DC–2.0 GHz		1.3:1	1.5:1	
	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)			10	20	ns
	On, Off (50% CTL to 90/10% RF)			20	40	ns
	Video Feedthru ³			30	40	mV
Input Power for 1 dB Compression		0.5–6.0 GHz		27		dBm
Intermodulation Intercept Point (IP3)	For Two-tone Input Power +8 dBm	0.5–6.0 GHz		46		dBm
Control Voltages	V _{Low} (0)		0		+0.5	V
	V _{High} (1)		+ 3.5		+5.0	V
Supply Voltages	V _{CC}		+4.75		+5.25	V
	I _{CC}				100	μA

1. All measurements made in a 50 Ω system, unless otherwise specified.

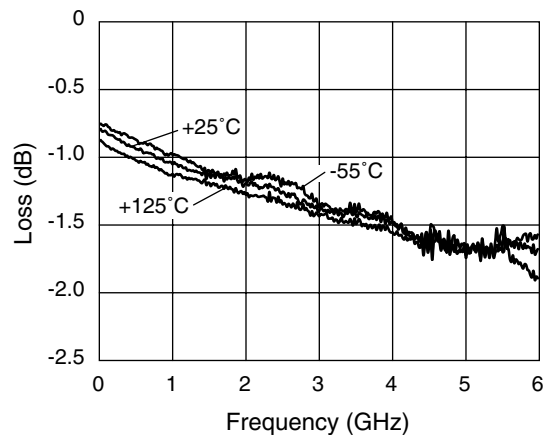
2. Insertion loss changes by 0.003 dB/°C.

3. Video feedthru measured with 1 ns risetime pulse and 500 MHz bandwidth.

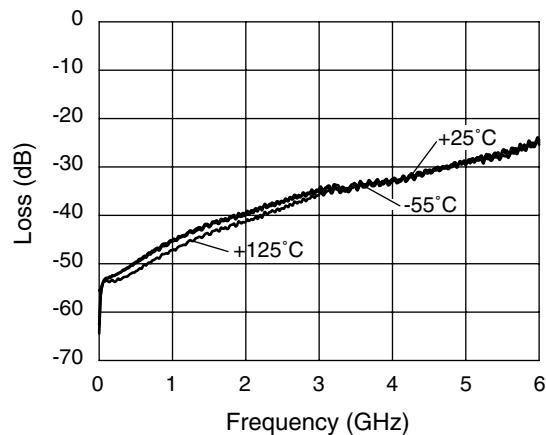
4. DC = 300 kHz. Dependent on C_{BL}.

5. See Quality/Reliability section.

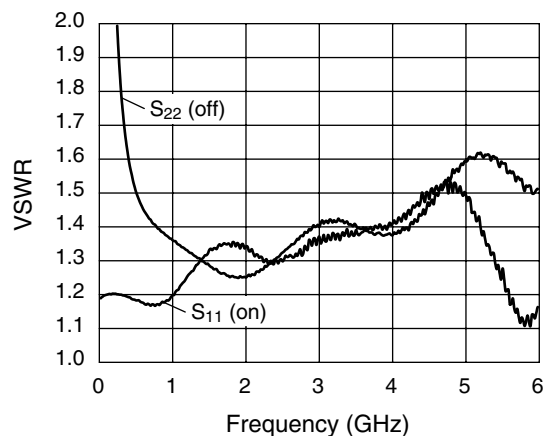
Typical Performance Data



Insertion Loss vs. Frequency



Isolation vs. Frequency



VSWR @ 25°C

Truth Table

V _{CTRL}	J ₁ –J ₂	J ₁ –J ₃
0	Insertion Loss	Isolation
1	Isolation	Insertion Loss

Absolute Maximum Ratings

Characteristic	Value
RF Input Power (RF In)	1 W > 500 MHz 0/+8 V C _{TRL}
Supply Voltage (V _S)	+7.0 V
Control Voltage (V _C)	-0.2 V, +8.0 V
Operating Temperature (T _{OP})	-55°C to +125°C
Storage Temperature (T _{ST})	-65°C to +150°C
Thermal Resistance (Θ _{JC})	25°C/W

Pin Out

