

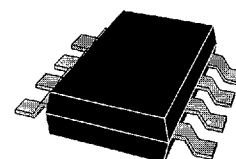
GaAs SPST FET MMIC Switch in 8 Lead SOIC Package Non-Reflective DC – 2.5 GHz



AS002M1-12

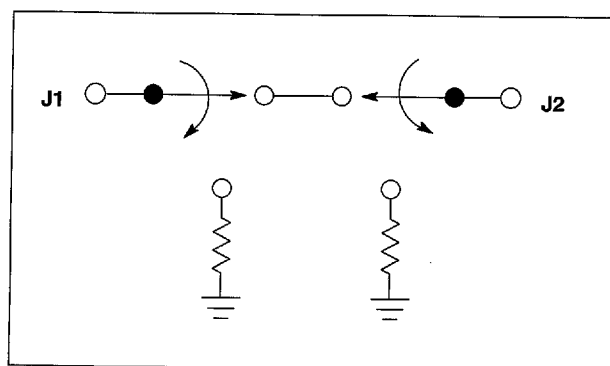
Features

- Small 8 Lead Plastic SOIC Package
- Low DC Drain
- Fast Switching
- Non-Reflective (Both Ports)



Description

This SPST MMIC switch is non-reflective at both the input and output. The device is mounted in a plastic SOIC 8 package for surface mounting in commercial switching, and modulation applications. Ideal for use as building blocks for higher isolation multi-throw switches.



Electrical Specifications at 25°C

Insertion Loss ¹	DC – 0.5 GHz	0.9	dB	Max
	DC – 1 GHz	1.1	dB	Max
	DC – 2.5 GHz	1.4	dB	Max
Isolation	DC – 0.5 GHz	40	dB	Min
	DC – 1 GHz	35	dB	Min
	DC – 2.5 GHz	27	dB	Min
VSWR (I/O) ²	DC – 0.5 GHz	1.3:1	dB	Max
	DC – 1 GHz	1.5:1	dB	Max
	DC – 2.5 GHz	1.8:1	dB	Max

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

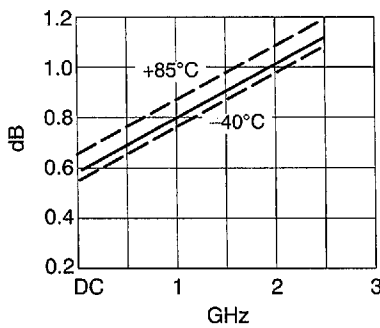
2. VSWR for input and output.

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

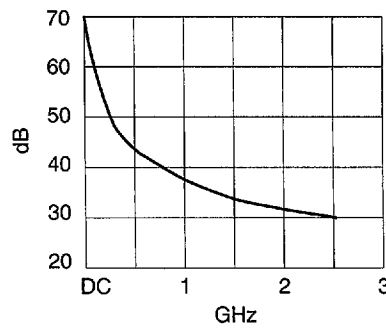
Operating Characteristics at 25°C

Impedance	50 Ohms Nominal			
Switching Characteristics				
RISE, FALL (10/90% or 90/10% RF)	3	ns	Typ	
ON, OFF (50% CTL to 90/10% RF)	6	ns	Typ	
Video Feedthru ³	20	mV	Typ	
Input Power for 1 dB Compression				
Control Voltages (Vdc)	0/-5	0/-8		
0.5-2 GHz	+24	30	dBm	Typ
0.001 GHz	+16	20	dBm	Typ
Intermodulation Intercept Point for two-tone input power up to +13 dBm				
Intercept Points	IP2	IP3		
0.5-2 GHz	+68	+46	dBm	Typ
0.001 GHz	+57	+35	dBm	Typ
Control Voltages				
V ₀ (Low)	0 to -0.2V @ 20 μA Max			
V ₀ (High)	-5V @ 50 μA to -9V @ 200 μA Max			

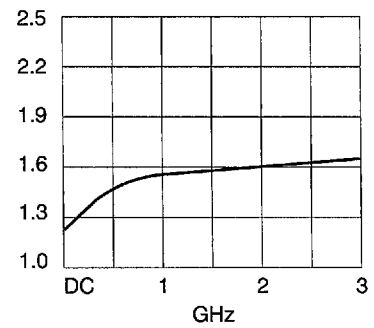
Typical Performance Data



Insertion Loss vs. Frequency

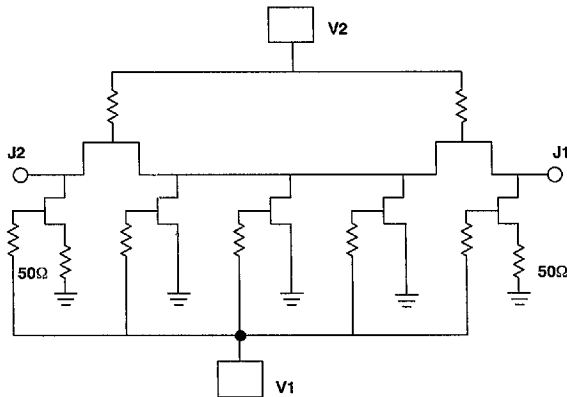


Isolation vs. Frequency

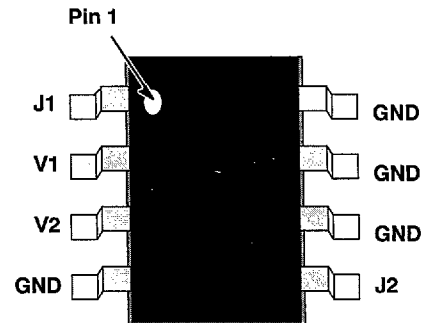


VSWR vs. Frequency

Switch Schematic



Pin Out¹



Absolute Maximum Ratings

RF Input Power: 2W > 500 MHz 0/-8V
0.5W @ 50 MHz 0/-8V

Control Voltage: +0.2V, -10V

Operating Temperature: -40°C to 85°C

Storage Temperature: -65°C to 150°C

Θ_{JC} : 25°C/W

Note: Exceeding these parameters may cause irreversible damage.

Truth Table

V1	V2	J1 - J2
0	-5	Isolation
-5	0	Insertion Loss

1. See AS259M1-12 for alternate pin out.

RF GaAs MMIC Products in Metal Packages

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