

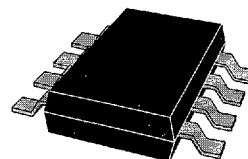
GaAs MMIC SPST FET Switch in 8 Lead SOIC Package Non-Reflective DC-2.5 GHz

Alpha

AS259M1-12

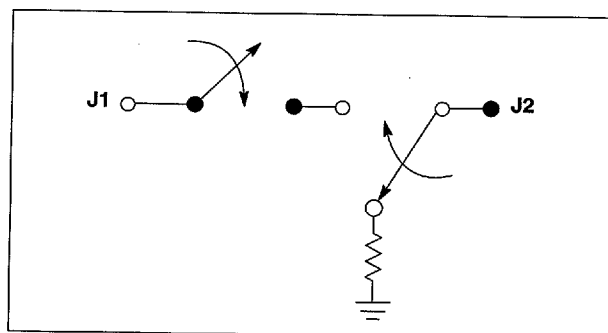
Features

- Low Cost
- High Isolation
- Low DC Drain
- Small 8 Lead SOIC Package
- Reflective Open, J1 Port
- Non-Reflective, J2 Port



Description

The AS259M1-12 is a non-reflective SPST switch designed for low cost, low power commercial applications. Ideal for use as building blocks for high isolation multi-throw switches.



Electrical Specifications at 25°C

Insertion Loss ¹	DC-0.1 GHz	0.6	dB	Max
	DC-0.5 GHz	1.0	dB	Max
	DC-1.0 GHz	1.2	dB	Max
	DC-2.5 GHz	1.6	dB	Max
Isolation	DC-0.1 GHz	62	dB	Min
	DC-0.5 GHz	55	dB	Min
	DC-1.0 GHz	45	dB	Min
	DC-2.5 GHz	30	dB	Min
VSWR ²	DC-1.0 GHz	1.2:1		Max
	DC-2.0 GHz	1.3:1		Max
	DC-2.5 GHz	1.5:1		Max

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

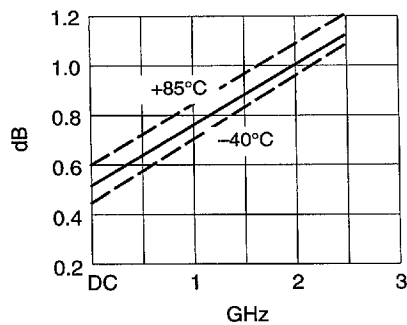
2. Insertion loss state and J2 Port (in Isolation State).

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

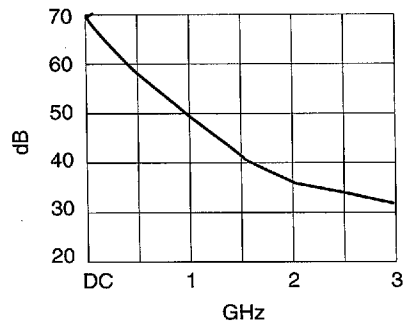
Operating Characteristics at 25°C

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 @ 20 μA to -9V @ 200 μA Max			

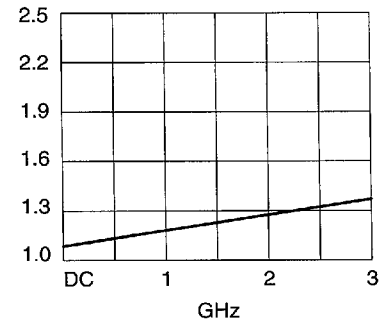
Typical Performance Data



Insertion Loss vs. Frequency

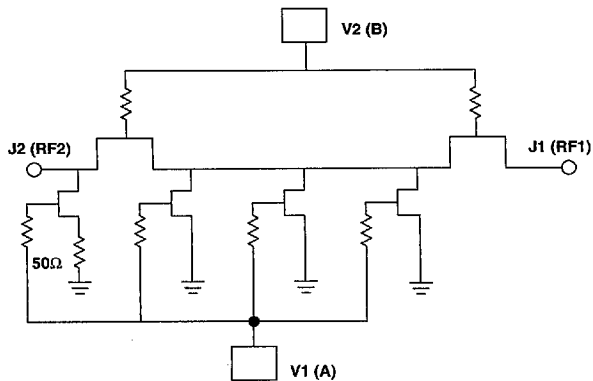


Isolation vs. Frequency



VSWR vs. Frequency

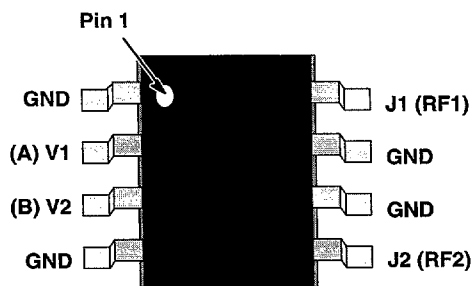
Switch Schematic



Truth Table

V1 (A)	V2 (B)	State J1–J2
–5	0	Insertion Loss
0	–5	Isolation

Pin Out



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.