

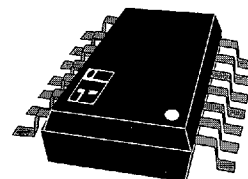
GaAs MMIC FET 10 Watt Diversity Switch In 14 Lead SOIC DC-1.6 GHz

Alpha

ADH01D2-24

Features

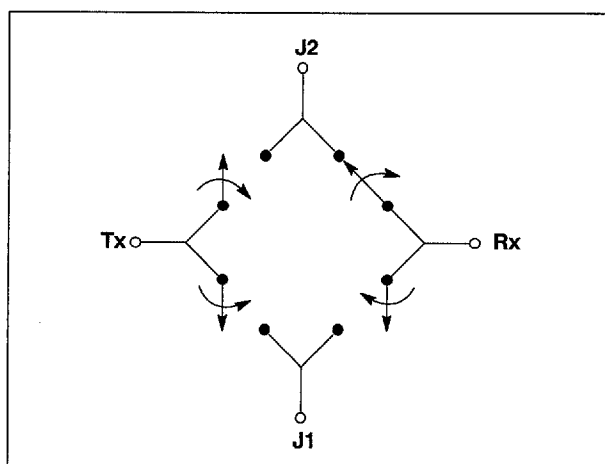
- High Power Handling Capability ($P-1 \text{ dB} \geq 10\text{W}$)
- Independent Four Port Switching
- Portable Radio TR Switching
- Individual Voltage Control on Each Port



Description

The ADH01D2-24 is a 4 port switch with independent DC voltage control on each port. This device is designed for portable radio TR switching with up to 10 watt capability.

In transmit or receive applications, the asymmetric design allows for good isolation between transmit and receive path while maintaining high power handling in transmit port.



Electrical Specifications at 25°C

Insertion Loss	DC - 500 MHz	0.8	dB	Max
Receiver	DC - 1000 MHz	1.0	dB	Max
(Rx - J1, J2)	DC - 1600 MHz	1.2	dB	Max
Insertion Loss	DC - 500 MHz	0.6	dB	Max
Transmit	DC - 1000 MHz	0.8	dB	Max
(Tx - J1, J2)	DC - 1600 MHz	1.0	dB	Max
Isolation	DC - 500 MHz	34	dB	Min
(Rx - J1, J2)	DC - 1000 MHz	28	dB	Min
	DC - 1600 MHz	23	dB	Min
Isolation	DC - 500 MHz	28	dB	Min
(Tx - J1, J2)	DC - 1000 MHz	22	dB	Min
	DC - 1600 MHz	17	dB	Min
Isolation	DC - 500 MHz	31	dB	Min
(Tx - Rx)	DC - 1000 MHz	25	dB	Min
	DC - 1600 MHz	23	dB	Min
VSWR ¹	DC - 500 MHz	1.5:1	dB	Max
	DC - 1000 MHz	1.8:1	dB	Max

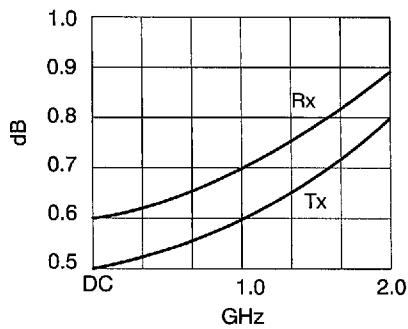
1. Insertion loss state.

Operating Characteristics at 25°C

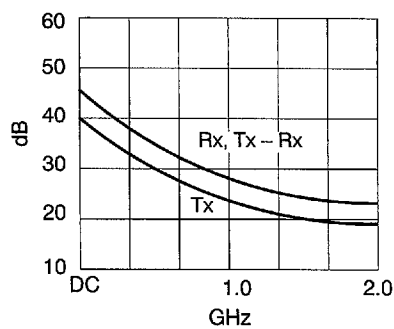
Impedance	50 Ohms Nominal			
Switching Characteristics				
RISE, FALL (10/90% or 90/10% RF)	6	ns	Typ	
ON, OFF (50% CTL to 90/10% RF)	12	ns	Typ	
Video Feedthru	30	mV	Typ	
Input Power for 1 dB Compression (Tx Path)				
Control Voltages (Vdc)	0/-5	0/-10		
850 MHz	33	40	dBm	Typ
450 Mhz	30	36	dBm	Typ
Intermodulation Intercept Point for two-tone input power up to +13 dBm				
Intercept Points	IP2	IP3		
850 MHz	72	53	dBm	Typ
450 MHz	68	49	dBm	Typ
Control Voltages				
V ₀ (Low)	0 to - 0.2V' @ 20 μ A Max			
V ₀ (High)	-5V @ 50 μ A to -10V @ 400 μ A Max			

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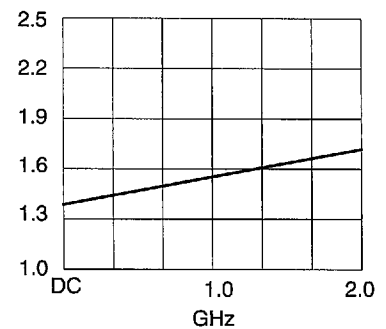
Typical Performance Data



Insertion Loss vs. Frequency

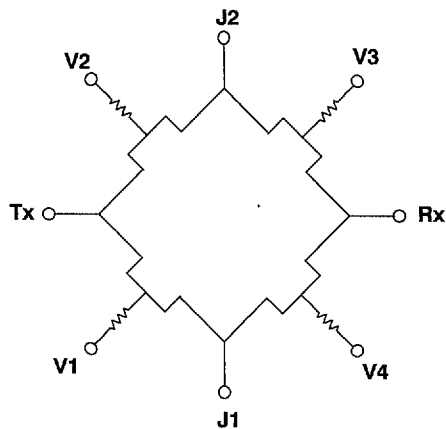


Isolation vs. Frequency



VSWR vs. Frequency

Functional Diagram

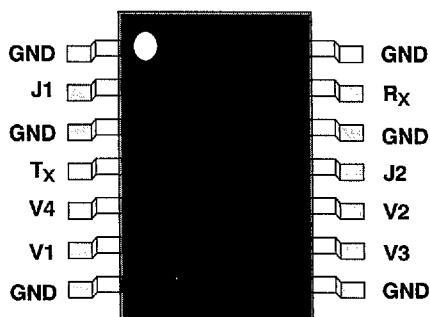


Truth Table

V1	V2	V3	V4	"On" Path
0	-10	-10	-10	Tx - J1
-10	0	-10	-10	Tx - J2
-10	-10	0	-10	Rx - J2
-10	-10	-10	0	Rx - J1

-5V may be used with reduced power handling capability.

Pin Out



Absolute Maximum Ratings

RF Input Power:	12W > 450 MHz, 0/-12V
Control Voltage:	+0.2, -12V
Operating Temperature:	-40°C to +85°C
Storage Temperature:	-65°C to +150°C
Thermal Resistance:	18°C/W

RF GaAs MMIC Products in Metal Packages

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