

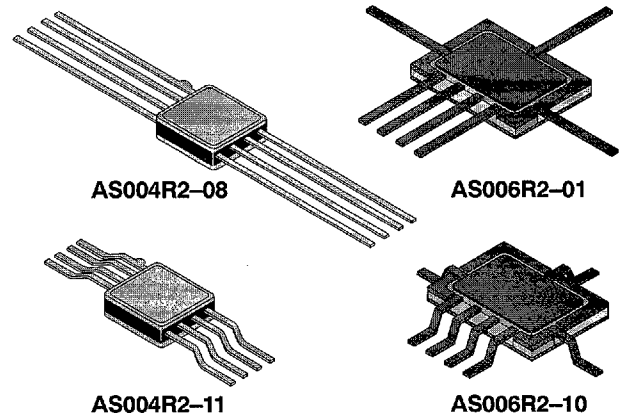
GaAs MMIC SPDT FET Switch Reflective DC-6 GHz



AS006R2-01, AS006R2-10, AS004R2-08, AS004R2-11

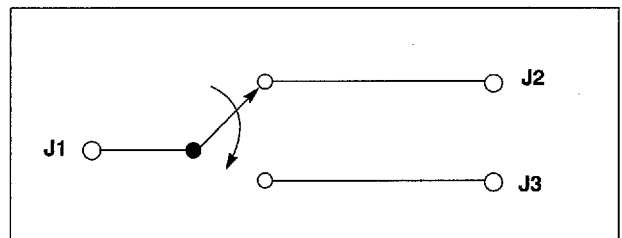
Features

- Broadband DC-6 GHz
- Low Loss
- Reflective (Open)
- Low D.C. Power Consumption
- Excellent Intermodulation Product\Temp. Stability
- Meets MIL-STD-883 Screening Requirements



Description

The GaAs SPDT FET reflective chip is offered in four separate packages for convenience of mounting. At the higher frequencies, 6 GHz, the 7 lead flat pack (AS006R2-01) has optimum performance since all leads are RF isolated. These devices are useful as switches in military, instrumentation and commercial communication applications. The AS006R2-10 is identical to the AS006R2-01 except for "Gull Winged" leads for surface mounting.



Electrical Specifications at 25°C

Option		-01, -10	-08, -11		
Insertion Loss ¹	DC-0.5 GHz	0.9	0.9	dB	Max
	DC-1 GHz	1.0	1.0	dB	Max
	DC-2 GHz	1.2	1.2	dB	Max
	DC-4 GHz	1.5	1.5	dB	Max
	DC-6 GHz	1.8	-	dB	Max
Isolation	DC-0.5 GHz	60	60	dB	Min
	DC-1 GHz	53	50	dB	Min
	DC-2 GHz	48	42	dB	Min
	DC-4 GHz	40	30	dB	Min
	DC-6 GHz	30	-	dB	Min
VSWR	DC-1 GHz	1.3:1	1.3:1		Max
	DC-2 GHz	1.5:1	1.5:1		Max
	DC-4 GHz	1.8:1	1.8:1		Max
	DC-6 GHz	2.0:1	-		

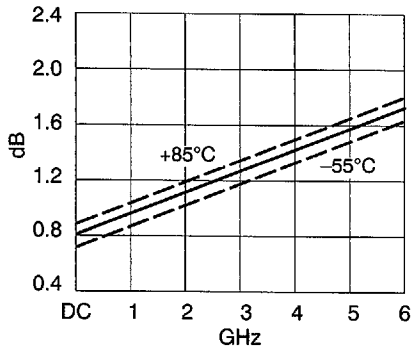
Operating Characteristics at 25°C

Impedance	50Ω 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 ²	20	mV	Typ
Input Power for 1 dB Compression			
Control Voltages (Vdc)	0/-5	0/-8	
0.5-6 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	
0.5-6 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		

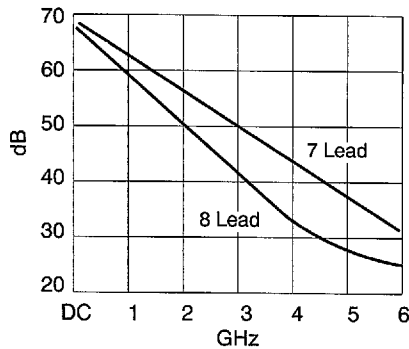
1. Insertion Loss changes by 0.003 dB/°C.

2. Measured in 500 MHz bandwidth with 1 ns risetime pulse.

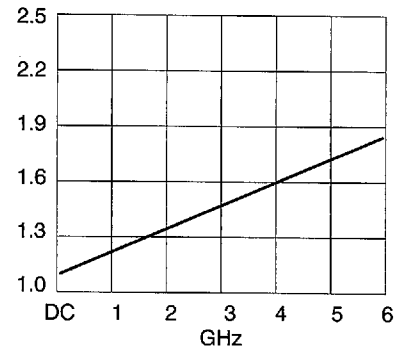
Performance Data



Insertion Loss vs. Frequency

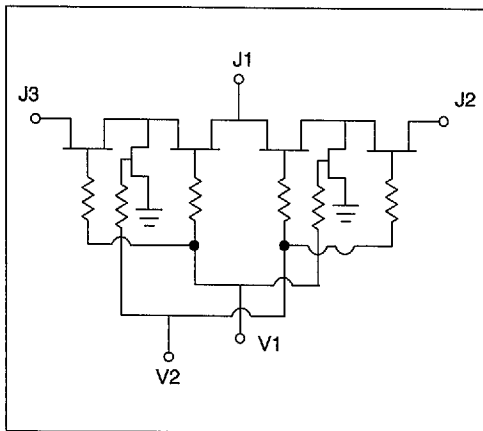


Isolation vs. Frequency



VSWR vs. Frequency

Switch Schematic



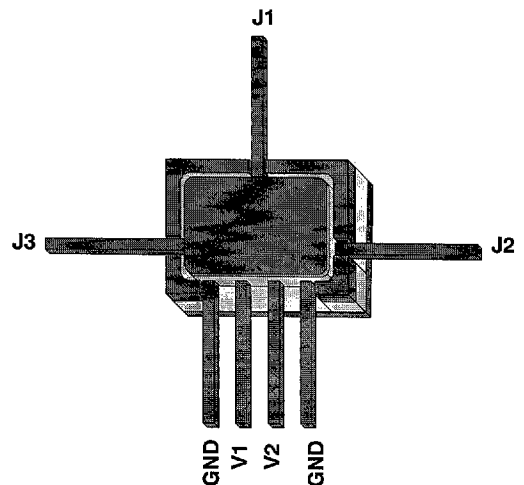
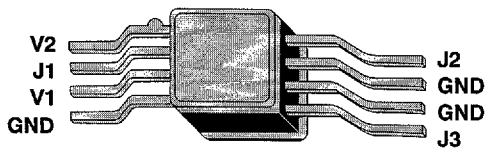
Absolute Maximum Ratings

RF Input Power: 2W > 500 MHz 0/-8V
 0.5W @ 50 MHz 0/-8V
 Control Voltage: +0.2V, -10V
 Operating Temperature: -55°C to 125°C
 Storage Temperature: -65°C to 150°C
 Thermal Resistance: 25°C/W

Truth Table

V1	V2	J1-J2	J1-J3
-5	0	Insertion Loss	Isolation
0	-5	Isolation	Insertion Loss

Pin Outs



RF GaAs MMIC Products in Metal Packages

Numerical Index

Part Number	Page	Part Number	Page	Part Number	Page
AD004T2-00	2-44	AK006R2-01	2-30	AS006M1-01	2-8
AD004T2-11	2-44	AK006R2-10	2-30	AS006M1-10	2-8
AE002M2-29	2-74	AK006R2-00	2-28	AS006M2-00	2-16
AE002M4-05	2-42	AK402D4-11	2-64	AS006M2-01	2-22
AH002R2-11	2-26	AK402D4-31	2-68	AS006M2-10	2-22
AK002D2-11	2-70	AN002M2-29	2-72	AS006R1-00	2-4
AK002D4-11	2-62	AN002M4-31	2-38	AS006R2-00	2-16
AK002D4-31	2-66	AN002M4-05	2-40	AS006R2-01	2-20
AK002M4-00	2-36	AS002M4-00	2-34	AS006R2-10	2-20
AK002M4-31	2-38	AS004L1-08	2-6	AS406M2-01	2-24
AK004L1-11	2-12	AS004L1-11	2-6	AS406R2-01	2-24
AK004M1-11	2-14	AS004L2-11	2-18	AT001D3-11	2-60
AK004M2-11	2-32	AS004M1-08	2-8	AT001D4-31	2-56
AK004R2-11	2-30	AS004M1-11	2-8	AT001D6-31	2-58
AK006L1-00	2-10	AS004M2-08	2-22	AT002D8-31	2-54
AK006L1-01	2-12	AS004M2-11	2-22	AT002N5-00	2-49
AK006L1-10	2-12	AS004R2-08	2-20	AT002N5-01	2-49
AK006M1-00	2-10	AS004R2-11	2-20	AT002N5-10	2-49
AK006M1-01	2-14	AS006L1-00	2-4	AT002N5-11	2-49
AK006M1-10	2-14	AS006L1-01	2-6	AT002S3-11	2-52
AK006M2-01	2-32	AS006L1-10	2-6	AT004N3-11	2-46
AK006M2-10	2-32	AS006L2-00	2-18	AT006N3-00	2-46
AK006M2-00	2-28	AS006L2-01	2-18	AT006N3-10	2-46
AK006R1-00	2-10	AS006M1-00	2-4	AT006N3-01	2-46

0585443 0002501 710