S11

10 to 500 MHz
THIN FILM SPST SWITCH

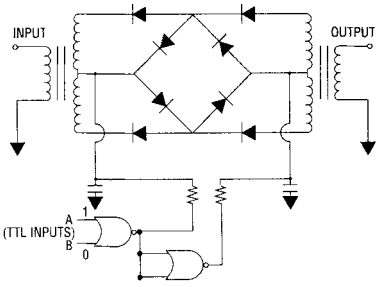
- LOW INSERTION LOSS: < 2.5 dB (TYP.)
- HIGH ON/OFF RATIO: 60 dB (TYP.)
- LOW VSWR: 1.6:1 (TYP.)
- TTL COMPATABLE

Specifications (Rev. Date: 3/02)*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Insertion Loss (max.)			
10-100 MHz	< 1. 7 dB	2.3 dB	2.7 dB
100-300 MHz	< 2.0 dB	2.6 dB	3.0 dB
300-500 MHz	< 2.5 dB	4.0 dB	4.5 dB
Isolation			
10-100 MHz	> 67 dB	54 dB	52 dB
100-300 MHz	> 62 dB	50 dB	48 dB
300-500 MHz	> 48 dB	39 dB	36 dB
VSWR Input/Output (max.) in ON state			
10-500 MHz	1.9:1	2.4:1	2.6:1
Switching Speed (10-90%)	8 ns	20ns	20 ns
DC Current (max.) at +5V	45 mA	55 mA	60 mA

*Measured in a 50-ohm system at +5 Vdc Nominal.

Schematic Diagram



DC volts: 5 ± 1% nominal; DC current 45 mA
TTL logic inputs "0" = 0 volt
"1" = 5 volts nominal
2 volts minimum
6 volts maximum

Absolute Maximum Ratings

Ambient Operating Temperature	-54° to +125°C
Storage Temperature	-62°C to +125°C
Max. Case Temperature	125°C
Max. DC Voltage	+6 Volts
Max. Continuous RF Input Power	+10 dBm
Max. Short Term RF Input Power	100 mW
Max. Peak Power (1 minute max.)	1 W
"S" Series Burn-in Temperature (Case)	125°C

Switching Conditions

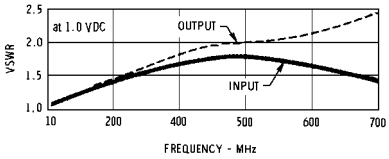
Input Pins	ON State	Off State		
A	0	1	1	0
B	0	1	0	1

Outline Drawings

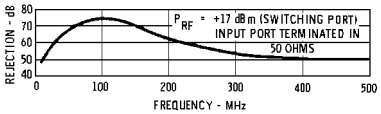
Package	TO-8
Figure	BE
Model	S11

Typical Performance at 25°C

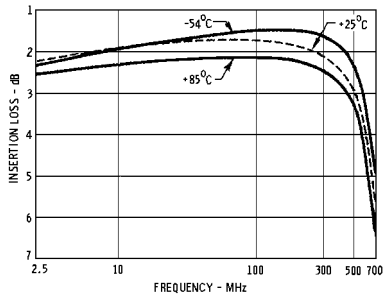
VSWR (ON STATE)



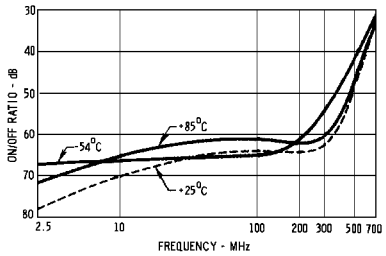
Switching Signal Rejection



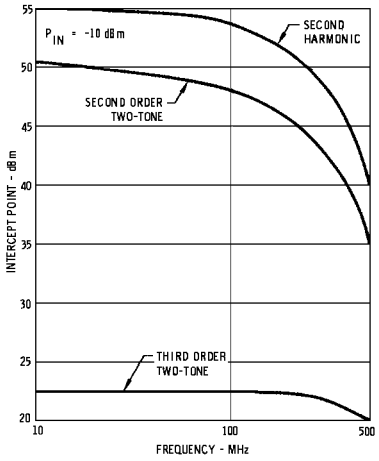
Insertion Loss



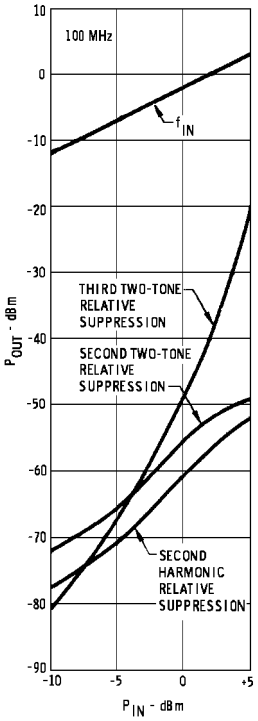
Isolation



Intercept Point



Distortion Products vs. Input Power



Typical Automatic Test Data

Off State: S11

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.82	−22.2	.00	71.4	.00	−118.9	.83	−27.3
200	.81	−45.2	.00	137.4	.00	98.4	.83	−55.0
300	.80	−70.7	.00	−147.9	.00	−141.4	.82	−85.8
400	.78	−98.9	.00	−122.5	.00	−119.2	.80	−118.8
500	.76	−130.0	.00	−120.7	.00	−120.8	.78	−152.2
600	.75	−166.4	.01	−131.5	.01	−129.7	.79	170.7
700	.74	151.6	.02	−146.4	.02	−145.0	.79	129.8

On State: S11

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.03	−90.6	.81	2.2	.81	2.3	.04	−86.7
200	.07	−124.5	.80	4.6	.80	4.4	.08	−120.0
300	.13	−153.1	.78	5.4	.78	5.1	.15	−147.9
400	.21	176.4	.76	5.1	.75	5.1	.24	−177.8
500	.32	145.2	.73	3.4	.72	3.9	.35	150.7
600	.44	114.4	.68	−.5	.68	.4	.47	118.3
700	.55	81.8	.50	−4.3	.54	−3.7	.58	81.6