

S10

10 to 500 MHz Thin Film SPST Switch

Rev. 03/02

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

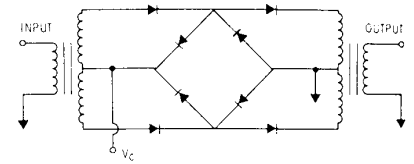


Specifications (Rev. Date: 03/02)*

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%)	2 ns	5ns	6 ns
DC Current (max.) at ±0.7 V	±20 mA		

*Measured in a 50-ohm system.

Schematic Diagram



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

ON State	Off State
+20 mA	-20 mA
≈ +0.7 V	≈ -0.7 V

Outline Drawings

Package	TO-8
Figure	BD
Model	S10

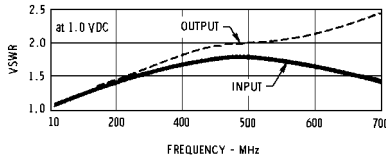
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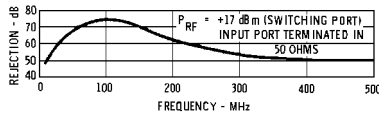
Rev. 03/02

Typical Performance at 25°C

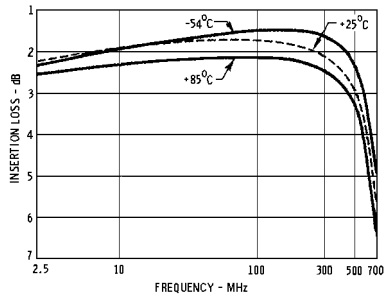
VSWR (ON STATE)



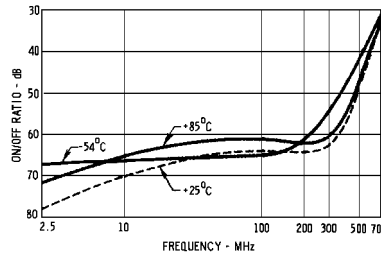
Switching Signal Rejection



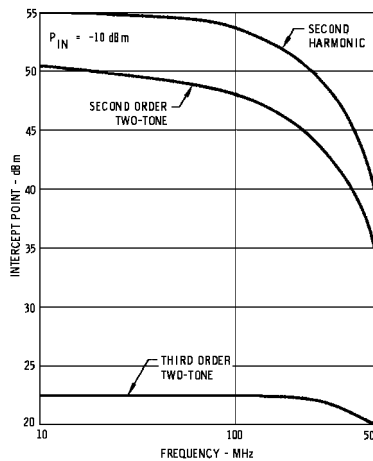
Insertion Loss



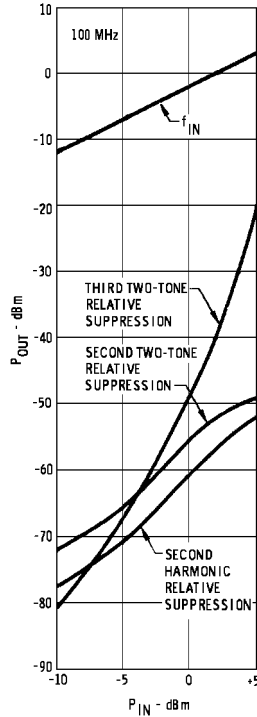
Isolation



Intercept Point



Distortion Products vs. Input Power



Typical Automatic Test Data

Off State: S10

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.84	-25.7	.00	127.7	.00	-167.2	.84	-24.9
200	.83	-52.3	.00	104.7	.00	74.6	.83	-50.7
300	.81	-80.9	.00	-176.9	.00	-179.2	.81	-80.5
400	.80	-112.0	.00	-119.8	.00	-117.0	.78	-114.0
500	.78	-145.3	.00	-109.1	.00	-106.3	.75	-149.5
600	.76	176.4	.01	-115.0	.01	-116.1	.74	169.8
700	.74	134.5	.01	-147.3	.01	-146.6	.73	126.1

On State: S10

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.04	-86.6	.81	.7	.81	.9	.04	-86.6
200	.09	-122.7	.79	1.7	.79	1.7	.10	-122.2
300	.16	-154.2	.77	1.4	.77	1.1	.17	-152.1
400	.25	173.4	.74	-2	.73	-5	.26	177.2
500	.36	140.0	.70	-3.3	.70	-2.6	.37	145.8
600	.47	106.9	.62	-8.1	.62	-7.2	.48	113.9
700	.55	71.4	.48	-10.0	.48	-9.0	.55	78.1