



# S11



## 10 to 500 MHz THIN FILM SPST SWITCH

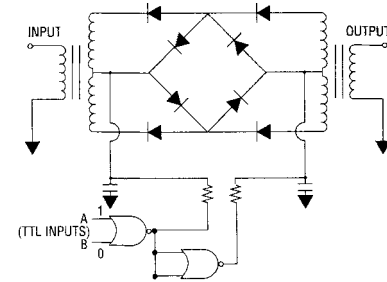
- LOW INSERTION LOSS: < 2.5 dB (TYP.)
- HIGH ON/OFF RATIO: 60 dB (TYP.)
- LOW VSWR: 1.6:1 (TYP.)
- TTL COMPATIBLE

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

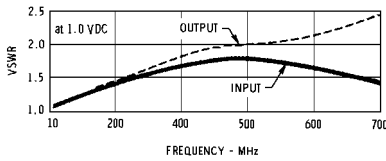
Package	TO-8
Figure	BE
Model	S11

M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

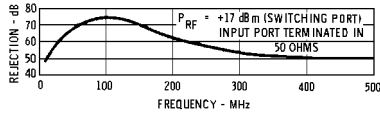
North America: 1-800-366-2266  
 Visit [www.macom.com](http://www.macom.com) for complete contact and product information.

Typical Performance at 25°C

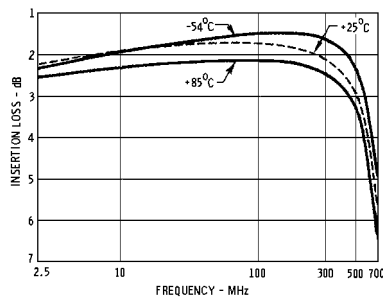
VSWR (ON STATE)



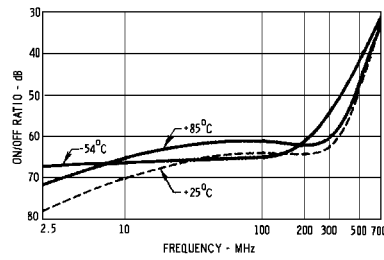
Switching Signal Rejection



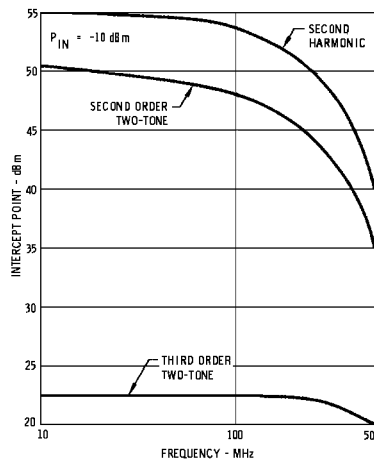
Insertion Loss



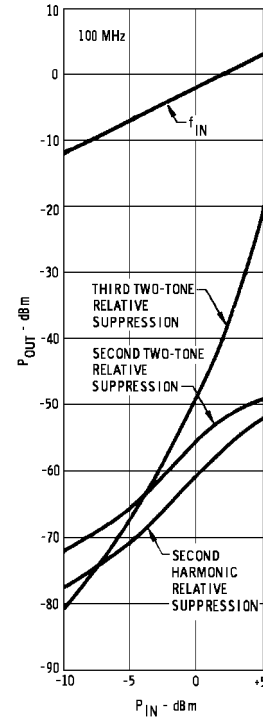
Isolation



Intercept Point



Distortion Products vs. Input Power



Typical Automatic Test Data

Off State: S11

Frequency MHz	S11		S21		S12		S22	
	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 MHz	S11		S21		S12		S22	
	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	.66	-5	.66	4	.47	118.3
700	.56	81.8	.50	-4.3	.54	-3.7	.58	81.8