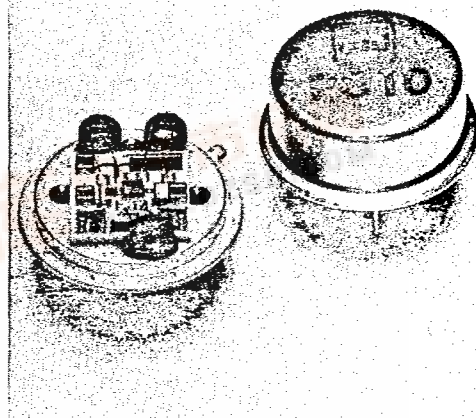


WJ-PS10

100 TO 1000 MHz THIN FILM SPST POWER SWITCH

- LOW INSERTION LOSS: < 1.5 dB (TYP.)
- HIGH CW INPUT POWER CAPABILITY: 2 WATTS
- HIGH ISOLATION: > 50 dB (TYP.)
- HIGH 3_{IP} SUPPRESSION: 45 dBc (TYP.) @ +20 dBm
- FAST SWITCHING SPEED: < 1 μ sec.



Specifications

Characteristic	Typ.	Guaranteed ¹	
		0° - 50°C	-54° - +85°C
Insertion Loss (Max.)	1.8 dB	2.7 dB	3.3 dB
		1.5 dB	2.2 dB
Insertion Flatness (Max.)	±0.5 dB	±0.7 dB	±0.9 dB
		±0.2 dB	±0.4 dB
Isolation (Min.)	>55 dB	50 dB	45 dB
		40 dB	35 dB
VSWR (Max.) Input/Output (ON State)	1.2:1	1.7:1	2.0:1 ²
		1.5:1	1.9:1
Switching Speed (10 to 90%)	<1 μ sec	2 μ sec	2 μ sec

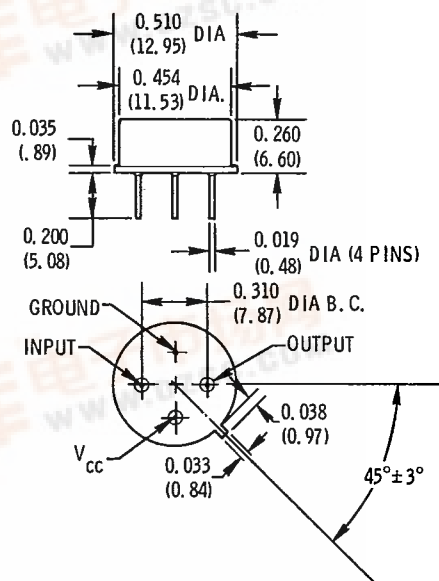
Notes:

1. Measured in a 50-ohm system at +20 Vdc nominal.
2. VSWR < 200 MHz is 2.2:1.

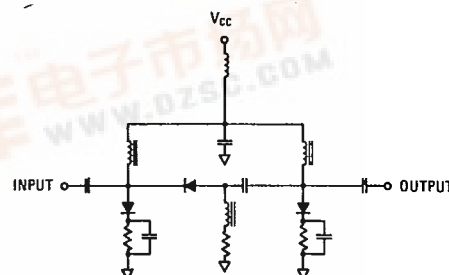
Absolute Maximum Ratings

Ambient Operating Temperature	-54°C to +100°C
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	+100°C
Maximum DC Voltage	+22 Volts
Maximum Continuous RF Input Power	2 Watts
Maximum Short Term RF Input Power	3 Watts
	(1 Minute Max.)
Maximum Peak Power (1 Minute Max.)	10 Watts
	(3 μ sec Max.)
"S" Series Burn-In Temperature	100°C

Outline Drawing PS10



Schematic Diagram

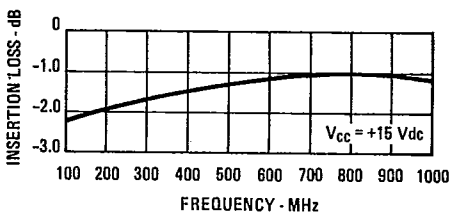
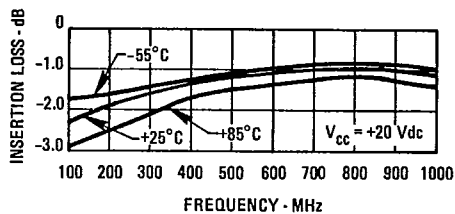


Switching Conditions

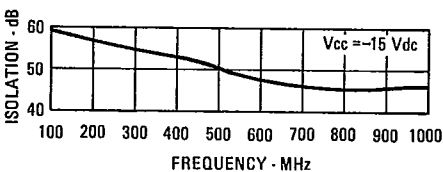
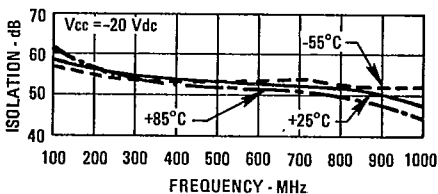
ON	OFF
+55 mA	-55 mA
≈+20 Vdc	≈-20 Vdc
+45 mA	-45 mA
≈+15 Vdc	≈-15 Vdc

Typical Performance at 25°C

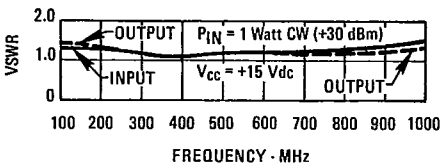
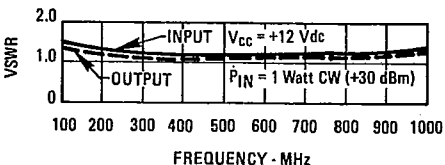
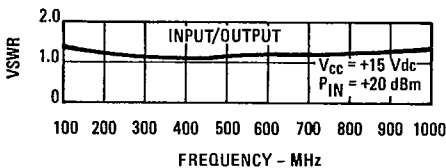
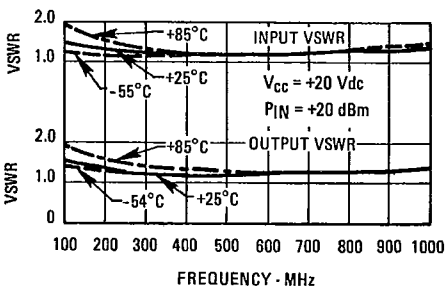
Insertion Loss



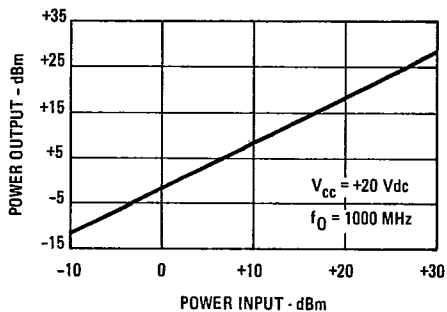
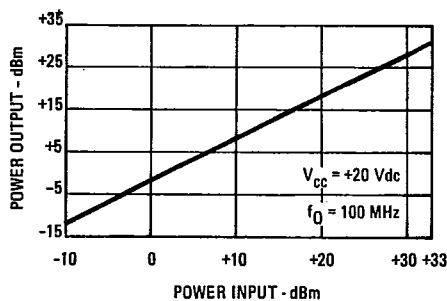
Isolation



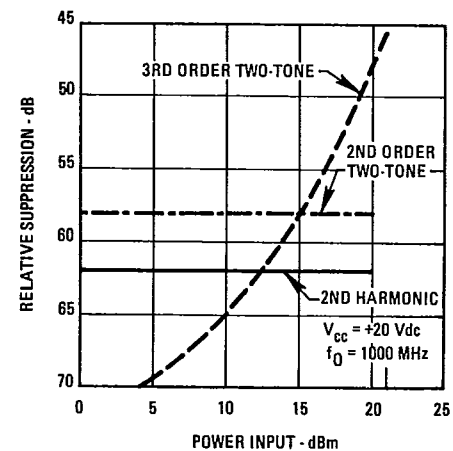
VSWR



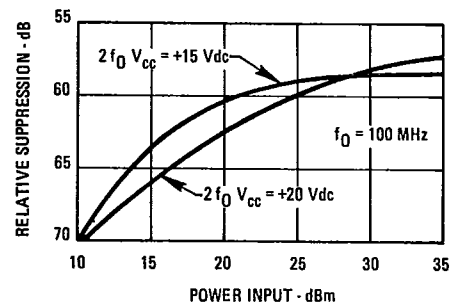
Power Output



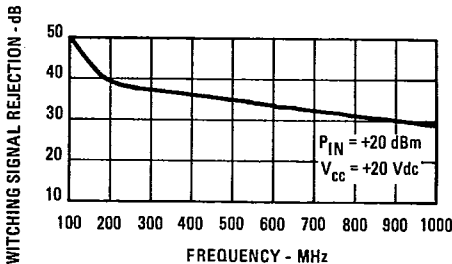
Relative Suppression



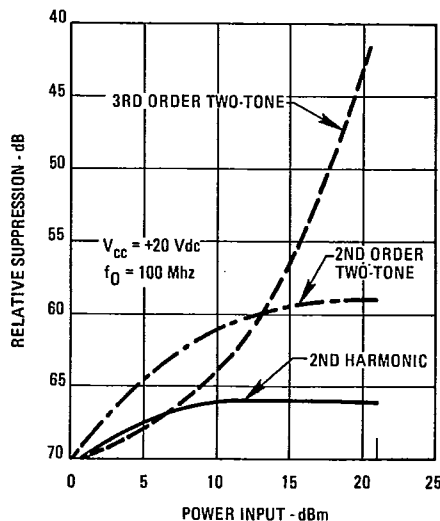
Harmonic Suppression



Switching Signal Rejection



Relative Suppression



Typical Automatic Test Data

V_{CC} = +20 Vdc @ Pin = +20 dBm

FREQ MHZ	USWR IN	USWR OUT	GAIN DB
100.	1.4	1.4	-2.3
200.	1.3	1.3	-1.9
300.	1.2	1.2	-1.6
400.	1.2	1.2	-1.4
500.	1.1	1.1	-1.3
600.	1.2	1.2	-1.2
700.	1.2	1.2	-1.1
800.	1.3	1.2	-1.0
900.	1.3	1.3	-1.1
1000.	1.4	1.4	-1.2
1100.	1.5	1.4	-1.4
1200.	1.6	1.5	-1.4

Linear S-Parameters

FREQ MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.	.18	158.0	.76	.6	.77	.4	.18	157.0
200.	.13	149.3	.81	-5.1	.81	-5.4	.14	146.3
300.	.10	150.1	.83	-11.7	.83	-12.1	.10	141.8
400.	.07	162.6	.85	-18.7	.85	-18.9	.07	151.6
500.	.07	-177.6	.86	-25.6	.86	-25.6	.06	172.8
600.	.08	-159.4	.87	-32.7	.87	-32.9	.07	-172.8
700.	.10	-153.3	.88	-39.2	.88	-39.2	.09	-164.3
800.	.13	-149.3	.89	-45.3	.89	-45.1	.11	-161.8
900.	.15	-152.2	.88	-51.0	.88	-50.9	.14	-163.3
1000.	.18	-154.9	.87	-56.8	.87	-56.9	.13	-166.5
1100.	.19	-156.1	.85	-63.6	.85	-63.8	.18	-169.8
1200.	.22	-161.5	.85	-70.5	.85	-70.7	.20	-174.3

Deviation from Linear Phase, Gain and Group Delay

FREQ MHZ	DEV LIN Ø DEG	REL Ø DEG	GAIN DEV DB	ABS GAIN DB	GROUP DELAY N-SEC
100.	-.15	.00	-.65	-2.33	.16
200.	-.66	-5.70	-.18	-1.86	.17
300.	.57	-12.30	.10	-1.57	.19
400.	.05	-19.33	.27	-1.40	.19
500.	-.27	-26.16	.39	-1.28	.19
600.	-.93	-33.33	.48	-1.19	.19
700.	-.86	-39.77	.59	-1.09	.17
800.	-.44	-45.85	.65	-1.02	.16
900.	.34	-51.59	.58	-1.10	.16
1000.	1.04	-57.48	.46	-1.22	.16

V_{CC} = +15 Vdc @ Pin = +20 dBm

FREQ MHZ	USWR IN	USWR OUT	GAIN DB
100.	1.4	1.4	-2.2
200.	1.3	1.3	-1.8
300.	1.2	1.2	-1.6
400.	1.1	1.1	-1.4
500.	1.1	1.1	-1.3
600.	1.2	1.2	-1.2
700.	1.2	1.2	-1.1
800.	1.3	1.3	-1.0
900.	1.4	1.3	-1.1
1000.	1.4	1.4	-1.2
1100.	1.5	1.4	-1.4
1200.	1.6	1.5	-1.4

Linear S-Parameters

FREQ MHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.	.16	164.2	.78	-1.0	.78	-1.1	.16	162.4
200.	.12	155.2	.81	-6.3	.82	-6.3	.12	151.9
300.	.09	156.4	.83	-12.5	.84	-12.7	.09	147.5
400.	.07	168.9	.85	-19.4	.85	-19.4	.07	157.8
500.	.07	-170.2	.86	-26.5	.86	-26.1	.06	-179.0
600.	.08	-154.0	.87	-33.2	.87	-33.2	.07	-166.5
700.	.10	-149.5	.88	-39.6	.89	-39.5	.09	-159.8
800.	.13	-145.7	.89	-45.5	.89	-45.4	.11	-158.1
900.	.15	-149.8	.88	-51.3	.88	-51.2	.14	-160.6
1000.	.18	-152.6	.87	-57.0	.87	-57.1	.16	-164.1
1100.	.20	-154.5	.86	-63.9	.86	-64.1	.18	-167.9
1200.	.22	-159.6	.85	-70.8	.85	-70.9	.20	-172.8

Deviation from Linear Phase, Gain and Group Delay

FREQ MHZ	DEV LIN Ø DEG	REL Ø DEG	GAIN DEV DB	ABS GAIN DB	GROUP DELAY N-SEC
100.	-.44	.00	-.57	-2.15	.15
200.	.60	-5.33	-.22	-1.80	.16
300.	.79	-11.51	.02	-1.57	.18
400.	.29	-18.39	.19	-1.40	.19
500.	-.42	-25.47	.27	-1.31	.19
600.	-.76	-32.18	.41	-1.18	.18
700.	-.80	-38.60	.51	-1.08	.17
800.	-.39	-44.56	.57	-1.02	.16
900.	.22	-50.32	.50	-1.03	.16
1000.	.91	-56.00	.38	-1.20	.16