

Plug-In Switch

50Ω SPDT Pin Diode Reflective 10 to 2500 MHz

PSW-1211



Generic photo used for illustration purposes only
CASE STYLE: A06

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power	+20 dBm
Control Current	5mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

RF IN	5
RF OUT 1	2
RF OUT 2	8
CONTROL 1	1
CONTROL 2	7
GROUND	3,4,6
CASE GND	3,6

Features

- wideband, 10 to 2500 MHz
- hermetic, metal case

Applications

- military, hi-rel application
- antenna switching
- UHF/VHF
- satellite communications
- test set-ups

Switch Electrical Specifications

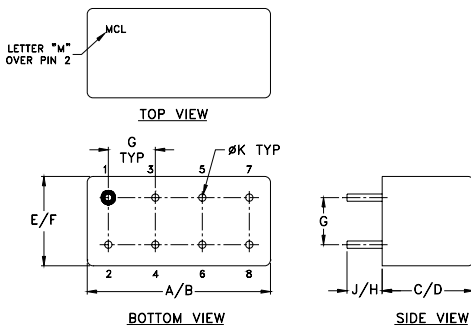
MODEL NO.	FREQ. (MHz)		INSERTION LOSS (dB)				IN-OUT ISOLATION (dB)					
	f_L	f_U	Low band lw		Upper band U		Frequency Band					
			Typ.	Max.	Typ.	Max.	L		M		U	
							Typ.	Min.	Typ.	Min.	Typ.	Min.
PSW-1211	10	2500	1.1	1.9	1.9	2.7	50	40	35	28	28	22

L= low range(f_L to 10 f_L)

M=mid range(10 f_L to $f_U/2$)
lw=low band (f_L to $f_L/2$)

U=upper range ($f_U/2$ to f_U)

Outline Drawing



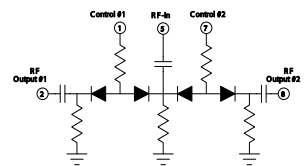
Outline Dimensions (inch/mm)

A	B	C	D	E	F
.770	.800	.285	.310	.370	.400
19.56	20.32	7.24	7.87	9.40	10.16

G	H	J	K	wt
.200	.20	.14	.031	grams
5.08	5.08	3.56	0.79	5.2

Additional Specifications	
VSWR ("ON" STATE)	1.7 MAX.
SWITCHING TIME (μSEC)	4 MAX.
RISE TIME (μSEC)	2 TYP.
CONTROL VOLTAGE	ON condition +5V OFF condition 0V
1 dB COMPRESSION	10 to 200 MHz +6 increasing to +19 dBm Above 200 MHz +19 dBm min.

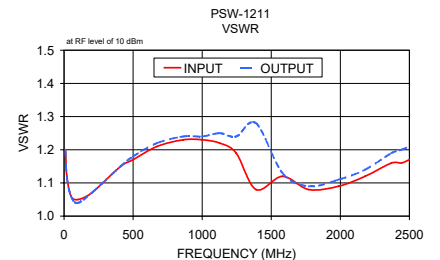
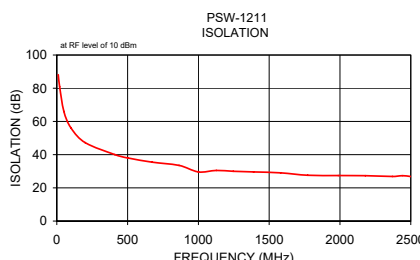
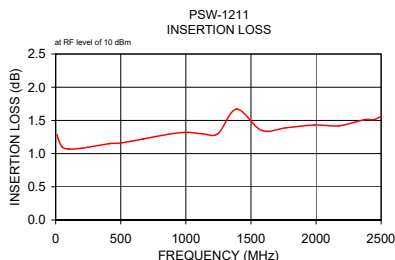
Control Logic



	CONTROL 1	CONTROL 2	RF OUT 2	RF OUT 1
State 1:	0V	+5V	ON	OFF
State 2:	+5V	0V	OFF	ON

Typical Performance Data

Freq. (MHz)	ON INSERTION LOSS (dB)				OFF INSERTION LOSS (dB)				ISOLATION (dB)		VSWR	
	IN-OUT		AMP. UNBAL		IN-OUT		DELTA		IN	OUT (RF 1)	ON	OFF
	\bar{x}	σ	\bar{x}	σ	\bar{x}	σ	\bar{x}	σ	\bar{x}	\bar{x}	\bar{x}	\bar{x}
10.00	1.29	0.19	0.13	0.12	88.14	5.32	5.52	5.48	1.20	1.20	27.17	
20.00	1.22	0.14	0.09	0.06	80.95	3.49	5.99	5.45	1.12	1.12	25.49	
50.00	1.10	0.10	0.07	0.06	66.03	2.18	0.79	0.77	1.06	1.06	26.18	
100.00	1.07	0.09	0.07	0.06	56.13	2.48	0.63	1.00	1.05	1.04	24.91	
200.00	1.08	0.09	0.06	0.05	47.23	1.83	0.65	0.71	1.07	1.07	24.71	
409.45	1.15	0.08	0.07	0.05	40.05	1.43	0.45	0.39	1.15	1.15	23.36	
500.00	1.16	0.08	0.06	0.04	38.02	1.28	0.50	0.28	1.17	1.18	22.80	
672.45	1.22	0.08	0.06	0.04	35.50	1.05	0.49	0.36	1.21	1.22	21.45	
863.73	1.29	0.08	0.06	0.04	33.51	0.92	0.71	0.29	1.23	1.24	19.28	
1000.00	1.32	0.07	0.05	0.03	29.59	0.41	3.76	0.96	1.23	1.24	19.05	
1126.73	1.30	0.08	0.06	0.05	30.50	0.46	2.81	0.52	1.22	1.25	17.59	
1246.27	1.30	0.07	0.07	0.06	30.00	0.41	3.80	0.53	1.19	1.24	17.26	
1389.73	1.67	0.09	0.41	0.09	29.58	0.43	1.32	1.45	1.08	1.28	15.74	
1581.00	1.35	0.07	0.05	0.04	29.04	0.47	0.58	0.46	1.12	1.13	14.86	
1772.27	1.39	0.08	0.05	0.05	27.59	0.59	1.64	0.77	1.08	1.09	13.60	
1987.45	1.43	0.07	0.05	0.04	27.44	0.74	2.62	0.92	1.09	1.11	12.58	
2178.73	1.42	0.08	0.06	0.04	27.34	0.87	3.10	1.03	1.12	1.14	14.41	
2370.00	1.51	0.09	0.08	0.05	26.88	1.06	3.36	1.25	1.16	1.19	12.24	
2441.73	1.51	0.08	0.07	0.04	27.35	1.15	3.49	1.39	1.16	1.20	10.69	
2500.00	1.56	0.09	0.08	0.06	26.81	1.21	3.44	1.50	1.17	1.21	11.44	



Notes

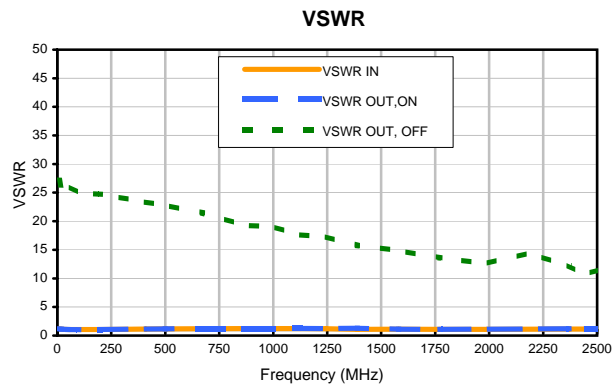
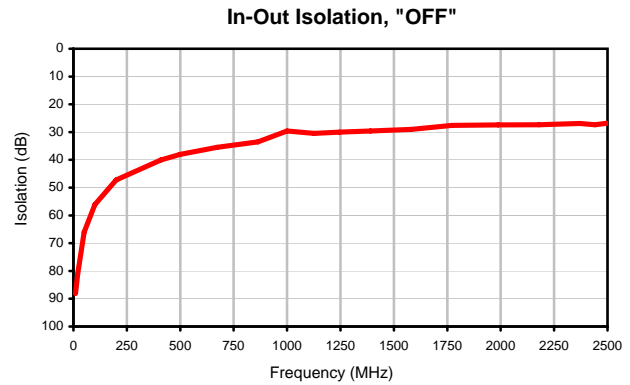
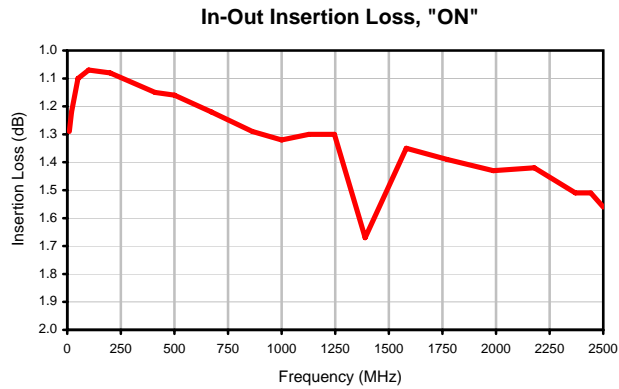
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Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB) IN-OUT , "ON"	ISOLATION (dB) IN-OUT , "OFF"	VSWR (:1)		
			IN	OUT , "ON"	OUT , "OFF"
10	1.29	88.14	1.20	1.20	27.17
20	1.22	80.95	1.12	1.12	25.49
50	1.10	66.03	1.06	1.06	26.18
100	1.07	56.13	1.05	1.04	24.91
200	1.08	47.23	1.07	1.07	24.71
409	1.15	40.05	1.15	1.15	23.36
500	1.16	38.02	1.17	1.18	22.80
672	1.22	35.50	1.21	1.22	21.45
864	1.29	33.51	1.23	1.24	19.28
1000	1.32	29.59	1.23	1.24	19.05
1127	1.30	30.50	1.22	1.25	17.59
1246	1.30	30.00	1.19	1.24	17.26
1390	1.67	29.58	1.08	1.28	15.74
1581	1.35	29.04	1.12	1.13	14.86
1772	1.39	27.59	1.08	1.09	13.60
1987	1.43	27.44	1.09	1.11	12.58
2179	1.42	27.34	1.12	1.14	14.41
2370	1.51	26.88	1.16	1.19	12.24
2442	1.51	27.35	1.16	1.20	10.69
2500	1.56	26.81	1.17	1.21	11.44

Typical Performance Curves

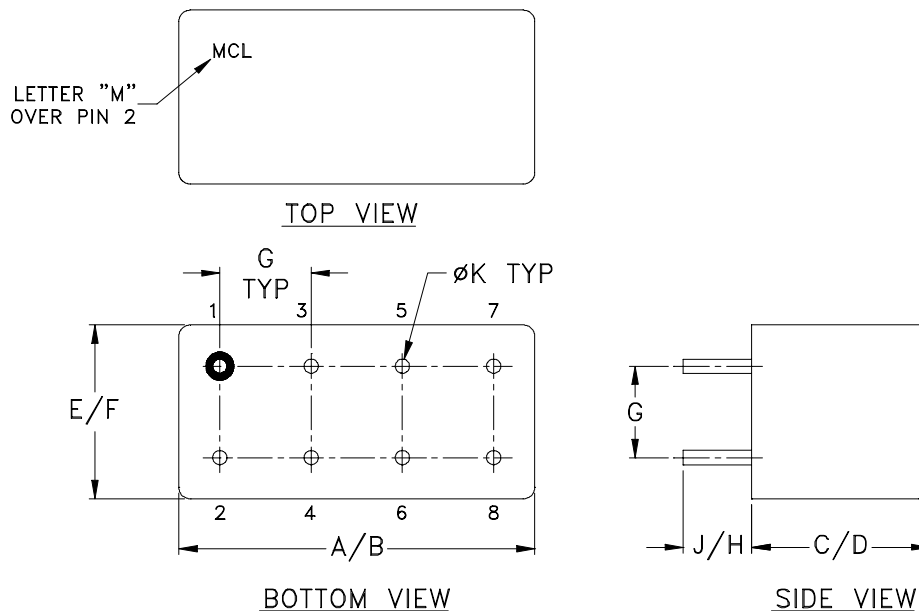


Case Style

A

A01
A04
A05
A06

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	WT, GRAM
A01			.385 (9.78)	.400 (10.16)							5.2
A04	.770 (19.56)	.800 (20.32)	.200 (5.08)	.210 (5.33)	.370 (9.40)	.400 (10.16)	.200 (5.08)	.20 (5.08)	.14 (3.56)	.031 (.79)	3.7
A05			.240 (6.10)	.250 (6.35)							3.7
A06			.285 (7.24)	.310 (7.87)							5.2

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

- Header material: C.R.S.
Pin material: #52 alloy.
Cover material: Cupro-Nickel.
- Pin finish: Electro Tin-Silver.
- Insulated spacer available. Request P/N B14-045-01.
- Tolerance on pin diameter $\pm .005$ inch.
- Glass meniscus 0.015 inch max.
- Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.

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All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A



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Specification	Test/Inspection Condition	Reference/Spec
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D