Coaxial Switch

ZMSW-1211

50Ω SPDT Pin Diode Reflective 10 to 2500 MHz

Generic photo used for illustration purposes only

CASE STYLE: JJ77

Connectors	Model
SMA	ZMSW-1211

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.

Coaxial/Pin Connections

RF IN	COM
RF OUT 1	RF-1
RF OUT 2	RF-2
CONTROL 1	1
CONTROL 2	2

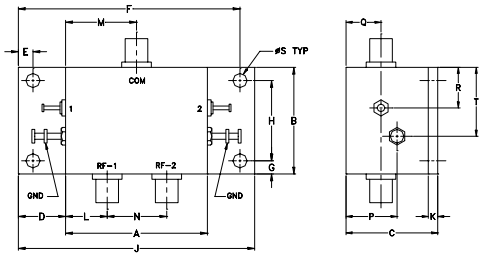
Features

- wideband, 10 to 2500 MHz
- good isolation, 35 dB typ.

Applications

- VHF/UHF
- satellite communication
- antenna switching
- test set-ups

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	
1.50	1.13	.97	.50	.155	2.345	.14	.850	2.50	
38.10	28.70	24.64	12.70	3.94	59.56	3.56	21.59	63.50	
K	L	M	N	P	Q	R	S	T	wt
.10	.44	.75	.63	.54	.37	.43	.150	.73	grams
2.54	11.18	19.05	16.00	13.72	9.40	10.92	3.81	18.54	50.0

Electrical Specifications

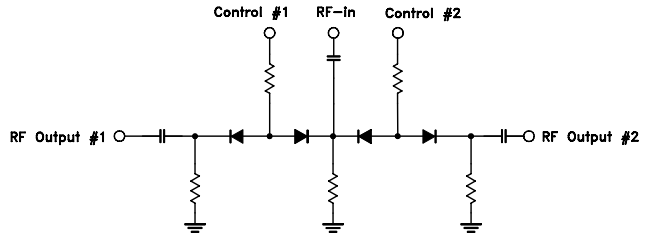
MODEL NO.	FREQ. (MHz)		INSERTION LOSS (dB)				IN-OUT ISOLATION (dB)					
			Low band lw		Upper band U		Frequency Band L		M		U	
	f_L	f_U	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.
ZMSW-1211	10	2500	1.1	1.9	1.9	2.7	50	45	35	28	28	22

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

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

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

Electrical Schematic



Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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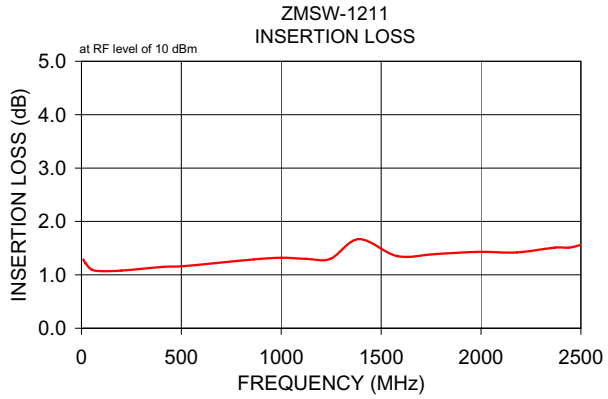
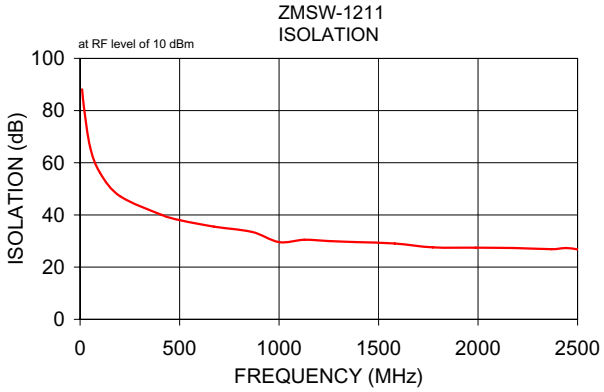
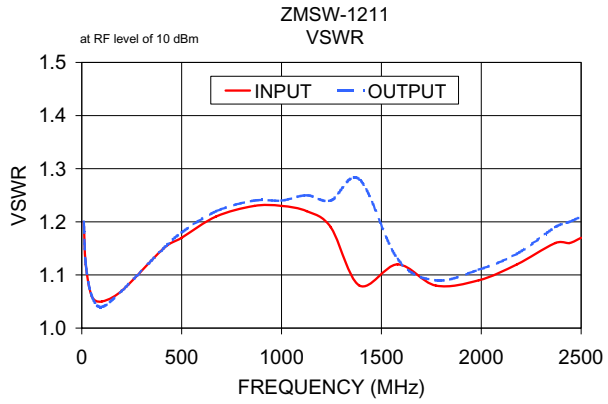
Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) (Ctrl1 @ 0V, Ctrl 2 @5V) IN-OUT		AMP. UNBALANCE (dB)		OFF ISOLATION (dB) (Ctrl1 @ 5V, Ctrl 2 @0V) IN-OUT		OFF ISOLATION (dB) DELTA		VSWR IN	VSWR OUT	VSWR OUT (RF1) OFF
	$\bar{X}$	σ	$\bar{X}$	σ	$\bar{X}$	σ	$\bar{X}$	σ	$\bar{X}$	$\bar{X}$	$\bar{X}$
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







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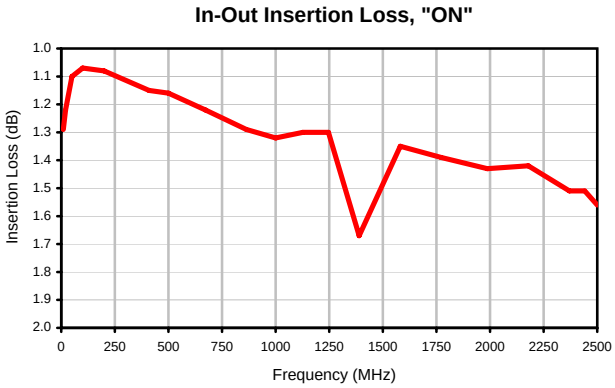
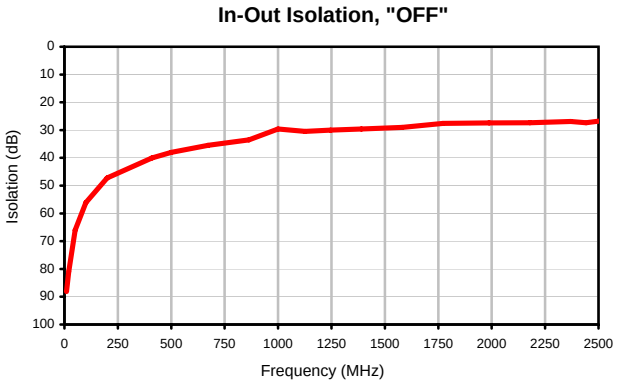
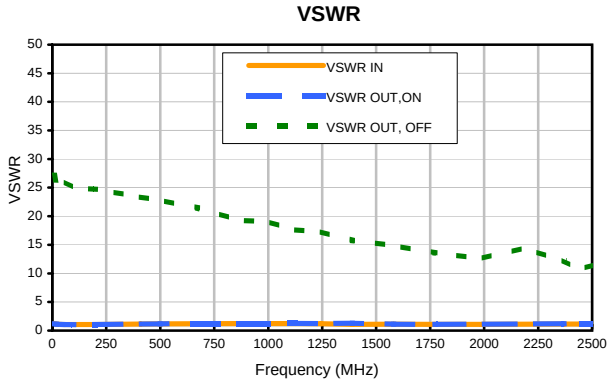
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS C1=0V,C2=5V (dB) IN-OUT , "ON"	ISOLATION C1=5V,C2=0V (dB) IN-OUT , "OFF"	VSWR (:1) IN	VSWR (:1) OUT , "ON"	VSWR (:1) 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



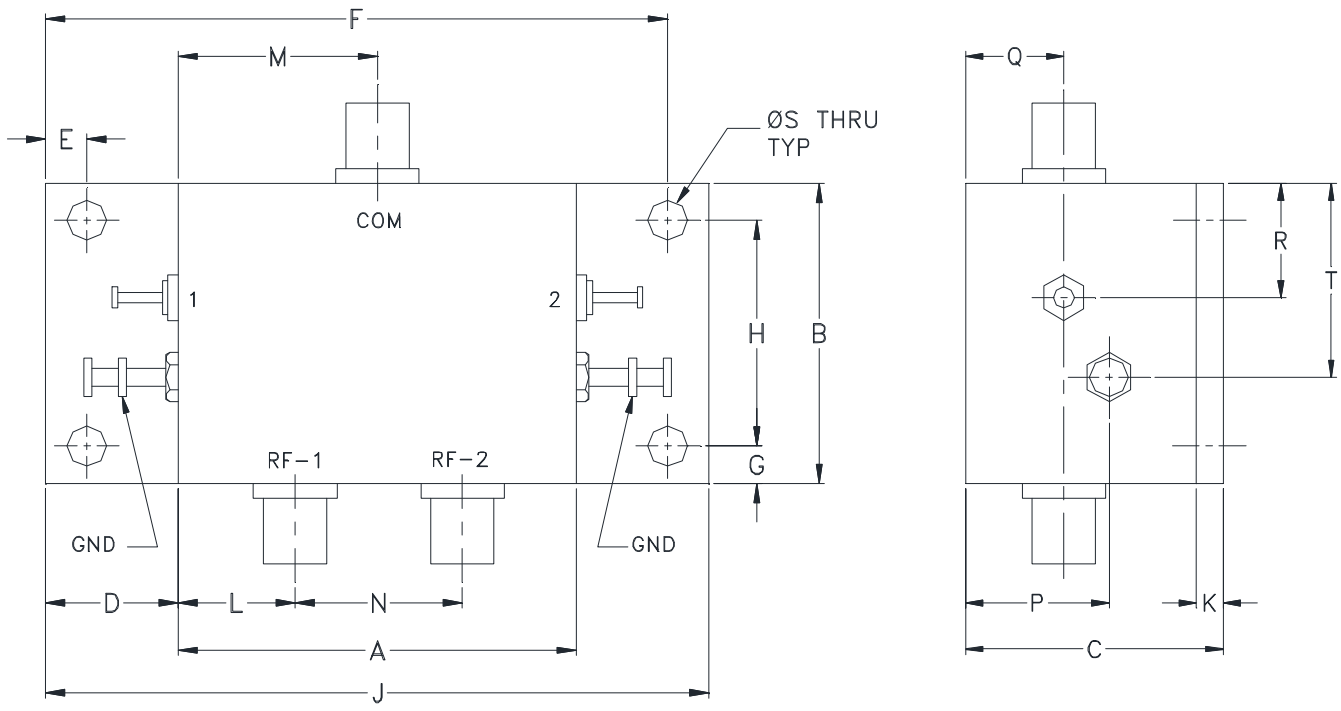




Case Style JJ

JJ77

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
JJ77	1.50 (38.10)	1.13 (28.70)	1.0 (25.40)	.50 (12.70)	.155 (3.94)	2.345 (59.56)	.14 (3.56)	.850 (21.59)	2.50 (63.50)	.13 (3.18)	.44 (11.18)	.75 (19.05)	.63 (16.00)

CASE#	P	Q	R	S	T	WT. GRAMS
JJ77	.57 (14.35)	.39 (9.78)	.43 (10.92)	.150 (3.81)	.73 (18.54)	50.0

Dimensions are in inches (mm). Tolerances: 2 Pl. + .03: 3 Pl. + .015

Notes:

1. Case material: Aluminum alloy.
2. Case finish:
   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.

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Environmental Specifications ENV28

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
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I