Coaxial

High Isolation Switch

50Ω SPDT, TTL Driver, Reflective DC[3] to 5000 MHz

ZASW-2-50DR+

CASE STYLE: CY353

Connectors	Model
SMA	ZASW-2-50DR+

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 150°C
Input Power	see Table & Note 2
Supply V	see Table

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

Coaxial Connections

RF IN	1
RF OUT 1	3
RF OUT 2	6
TTL IN	4
+5V	2
-5V	5

Features

- wideband, DC to 5 GHz
- integral TTL driver
- high isolation, 82 dB typ. at 2 GHz

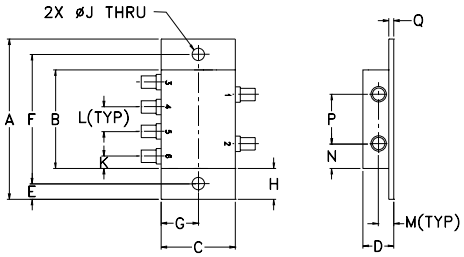
Applications

- transmitter receiver isolation
- automated switching networks

Electrical Specifications

FREQ.[3] (MHz)		INSERTION LOSS (dB)								1dB COMPR. (dBm)				IN-OUT ISOLATION (dB)							
		DC-100 MHz		100-1000 MHz		1000-2000 MHz		2000-5000 MHz		DC-100 MHz	10-1000 MHz	1000-2000 MHz	2000-5000 MHz	DC-100 MHz		100-1000 MHz		1000-2000 MHz		2000-5000 MHz	
f_L	f_U	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.
DC	5000	1.3	2.0	1.7	2.5	1.8	3.0	3.0	4.5	17	20	20	19	100	80	90	75	82	65	68	46

Outline Drawing



Outline Dimensions (inch / mm)

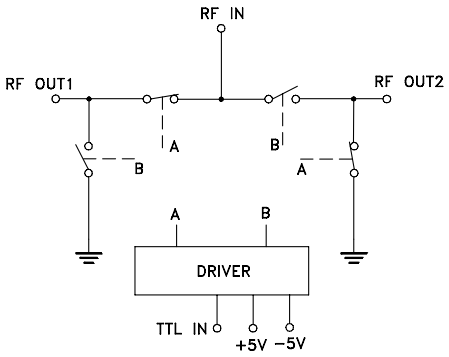
A	B	C	D	E	F	G	H
3.24	2.00	1.50	.62	.31	2.620	.75	.62
82.30	50.80	38.10	15.75	7.87	66.55	19.05	15.75
J	**K**	**L**	**M**	**N**	**P**	**Q**	**wt**
.250	.25	.50	.31	.50	1.00	.13	grams
6.35	6.35	12.70	7.87	12.70	25.40	3.30	65.0

Additional Specifications	
Low Threshold, V High Threshold, V	0 Min., 0.8 Max. 2 Min., 5 Max.
Control Current, mA	High V, 5 Max. Low V, 0.2 Max.
Positive Supply, V	+5+0.5/-0.1
Negative Supply, V	-5-0.5/+0.1
Positive Supply Current, mA	22 Typ., 60 Max.
Negative Supply Current, mA	22 Typ., 60 Max.
Video Leakage[1], mVp-p	140 Typ.
RF Power Input[2]	250mW
VSWR (:1) ON, all ports OFF, Input OFF, Output	 1.3 Typ. 1.3 Typ. 3.3 Typ.
Rise/Fall Time (10%-90%), ns Switching Time, 50% of control to 90% RF (Turn-on), ns 10% RF (Turn-off), ns	5 Typ., 15 Max. 10 Typ., 20 Max. 10 Typ., 20 Max.

CONTROL LOGIC		
TTL Control Port	RF outputs	
	1	2
HIGH	OFF	ON
LOW	ON	OFF

1. Video leakage or break through is defined as leakage of TTL switching signal to RF output ports.
2. Above 20° derate power linearly to zero at 150°C
3. All RF connections must be DC blocked or held at 0V DC.

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.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

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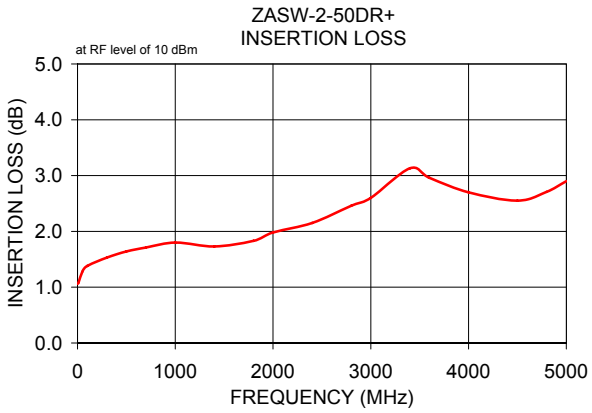
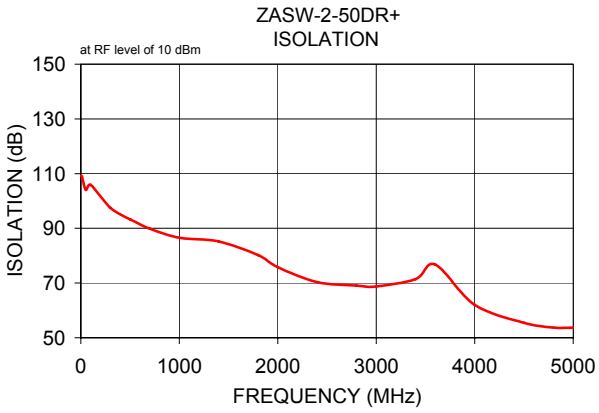
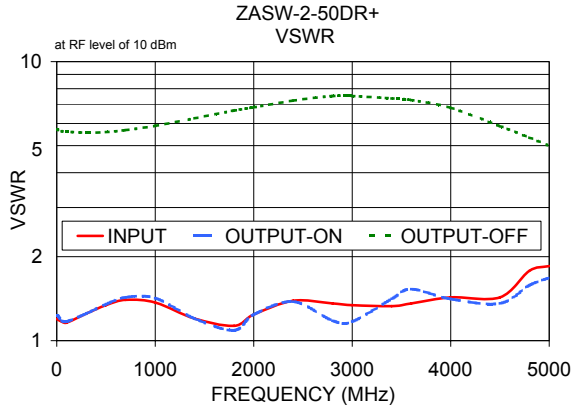
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) IN-OUT		OFF ISOLATION (dB) IN-OUT		VSWR IN	VSWR ON	VSWR OUT
	$\bar{x}$	σ	$\bar{x}$	σ	$\bar{x}$	$\bar{x}$	$\bar{x}$
1.00	1.06	0.01	109.17	3.64	1.20	1.23	5.70
10.00	1.08	0.01	108.91	10.51	1.19	1.23	5.70
50.00	1.28	0.01	104.03	5.94	1.17	1.18	5.63
100.00	1.38	0.00	105.82	7.43	1.16	1.17	5.61
300.00	1.53	0.01	97.50	4.30	1.25	1.25	5.56
500.00	1.64	0.02	93.26	3.56	1.34	1.35	5.59
700.00	1.71	0.03	89.84	2.64	1.40	1.43	5.68
1000.00	1.80	0.05	86.55	2.68	1.37	1.42	5.89
1400.00	1.73	0.02	85.22	3.42	1.20	1.20	6.26
1800.00	1.83	0.07	80.22	1.20	1.13	1.09	6.68
2000.00	1.98	0.07	75.82	0.90	1.24	1.24	6.86
2400.00	2.15	0.06	70.36	0.67	1.39	1.38	7.25
2800.00	2.46	0.05	69.10	0.43	1.36	1.18	7.53
3000.00	2.60	0.13	68.74	0.75	1.34	1.17	7.53
3400.00	3.13	0.04	71.45	4.25	1.33	1.41	7.38
3600.00	2.96	0.08	76.78	3.43	1.36	1.53	7.28
4000.00	2.70	0.13	62.02	0.76	1.43	1.41	6.83
4500.00	2.55	0.17	55.47	0.73	1.43	1.36	5.87
4800.00	2.71	0.22	53.70	0.67	1.78	1.58	5.34
5000.00	2.90	0.16	53.70	0.76	1.85	1.68	4.99







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Switch SPDT , 50Ω

ZASW-2-50DR+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB) IN-OUT , "ON"	ISOLATION (dB) IN-OUT , "OFF"	VSWR (:1) IN	VSWR (:1) OUT , "ON"	VSWR (:1) OUT , "OFF"
1	1.06	109.17	1.20	1.23	5.70
10	1.08	108.91	1.19	1.23	5.70
50	1.28	104.03	1.17	1.18	5.63
100	1.38	105.82	1.16	1.17	5.61
300	1.53	97.50	1.25	1.25	5.56
500	1.64	93.26	1.34	1.35	5.59
700	1.71	89.84	1.40	1.43	5.68
1000	1.80	86.55	1.37	1.42	5.89
1400	1.73	85.22	1.20	1.20	6.26
1800	1.83	80.22	1.13	1.09	6.68
2000	1.98	75.82	1.24	1.24	6.86
2400	2.15	70.36	1.39	1.38	7.25
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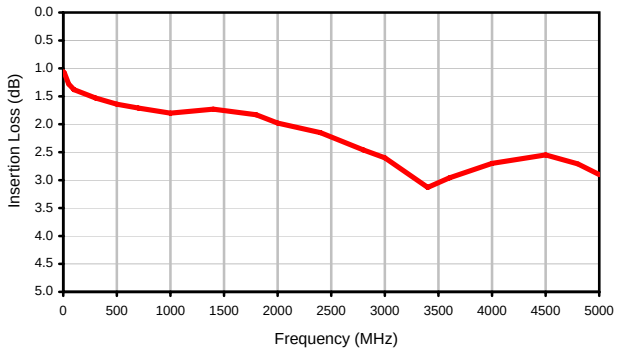
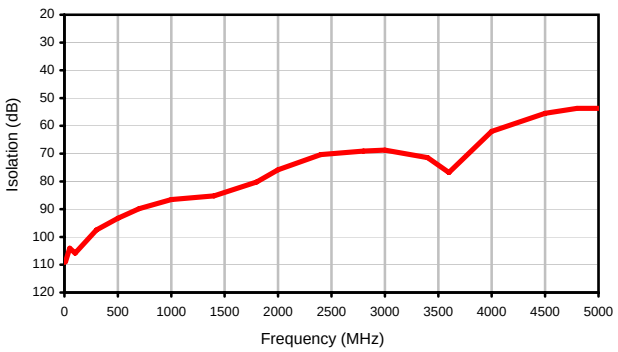
4500	2.55	55.47	1.43	1.36	5.87
4800	2.71	53.70	1.78	1.58	5.34
5000	2.90	53.70	1.85	1.68	4.99

Typical Performance Curves

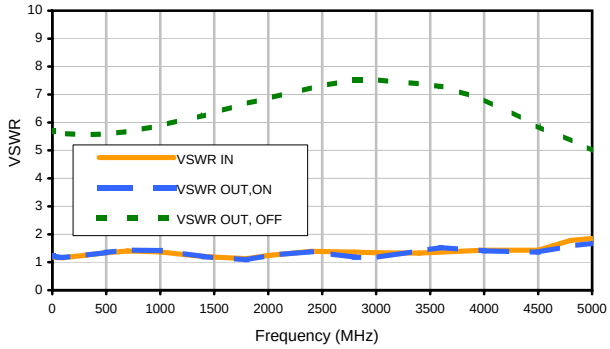
In-Out Insertion Loss, "ON"



In-Out Isolation, "OFF"



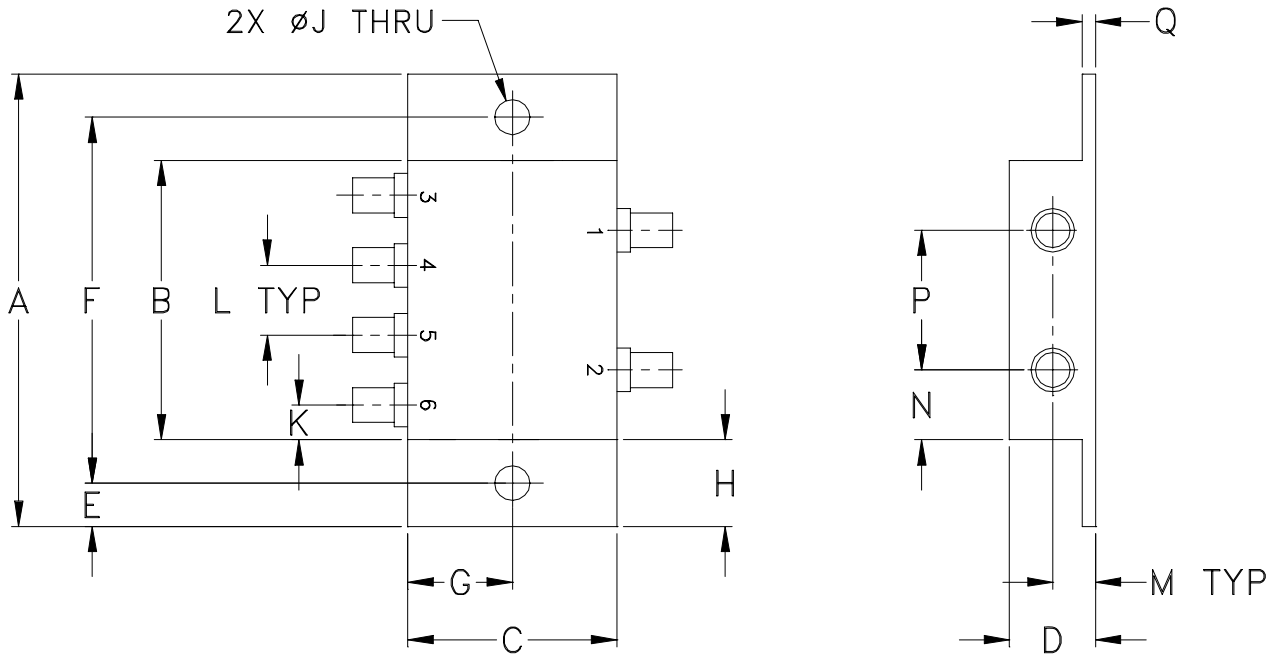
VSWR



Case Style CY

CY353

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
CY353	3.24 (82.30)	2.00 (50.80)	1.50 (38.10)	.62 (15.75)	.31 (7.87)	2.620 (66.55)	.75 (19.05)	.62 (15.75)	.250 (6.35)	.25 (6.35)	.50 (12.70)	.31 (7.87)	.50 (12.70)

CASE#	P	Q	WT. GRAMS
CY353	1.00 (25.40)	.13 (3.30)	65.0

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

Notes:

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

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Environmental Specifications **ENV28T3**

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	-20° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 150°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