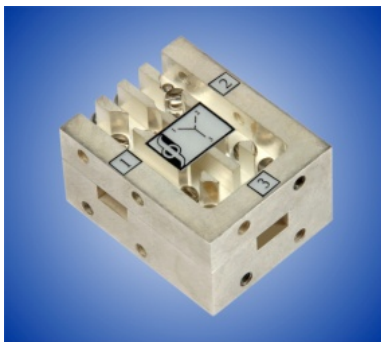


Waveguide Ferrite Switches



FERRITE DOMEN Co.
Since 1959



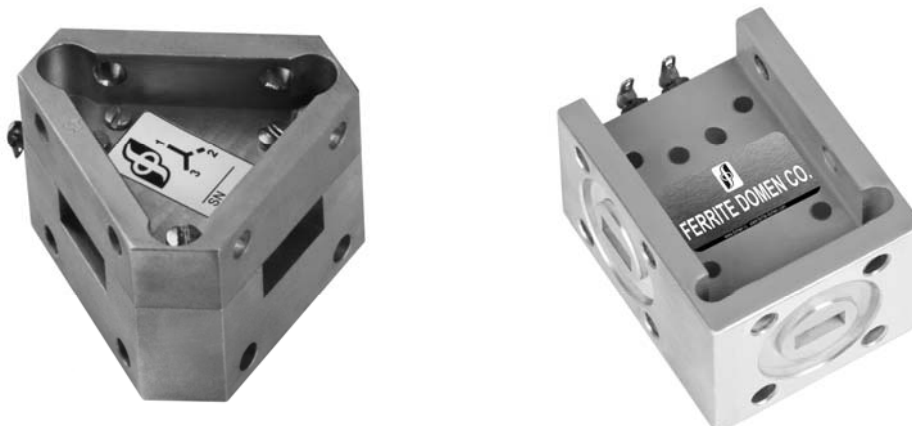
Ferrite Domen Co. presents a broad range of waveguide ferrite switches for use in military, commercial and scientific applications here. We design and manufacture devices from 3 GHz to 40 GHz with switch time from 1.5 μ s. These ones feature low insertion loss, high isolation, wide spectrum operating power and temperature range.

CONTENTS

Waveguide Ferrite Switches	Frequency range	Page
1. Narrow Bandwidth Y-junction Latching Switches	8.2 to 40 GHz	3-2
2. Switches for General Use	7.05 to 26.5 GHz	3-3
3. Cryogenic (20 K) Y-junction Latching Switches	8.2 to 40 GHz	3-4
4. Redundancy Ferrite Switches for Space Application	3.4 to 9 GHz	3-5
Device Applications. How to Order.		3-6

FERRITE DOMEN Co.
25, Tsvetochnaya st., Bld. 3
196084 St. Petersburg, Russia
Fax +7 (812) 676 2929
E-mail: info@domen.ru
www.ferrite-domen.com

1. Narrow Bandwidth Y-junction Latching Switches 8.2 to 40 GHz



Frequency range GHz	Model	Band width %	Insertion loss (Typ*/Max) dB	Isolation (Typ*/Min) dB	VSWR (Typ*/Max)	Power W	Switch time μ s	Switch energy μ J
8.2 to 12.4	4SWS[8-12]-1	5	0.2/0.25	30/25	1.1/1.15	5	2.0	200
8.2 to 12.4	4SWS[8-12]-2	10	0.2/0.25	25/20	1.15/1.22	5	2.0	200
8.2 to 12.4	4SWS[8-12]-3	15	0.2/0.25	23/20	1.19/1.22	5	2.0	200
8.2 to 12.4	4SWS[8-12]-4	5	0.25/0.3	25/20	1.15/1.22	100	2.0	200
8.2 to 12.4	4SWS[8-12]-5	10	0.3/0.35	23/20	1.19/1.22	100	2.0	200
8.2 to 12.4	4SWS[8-12]-6	15	0.3/0.35	20/18	1.22/1.3	100	2.0	200
12.4 to 18.0	4SWS[12-18]-1	5	0.2/0.25	30/25	1.1/1.15	20	2.0	180
12.4 to 18.0	4SWS[12-18]-2	10	0.2/0.25	25/20	1.15/1.22	20	2.0	180
12.4to18.0	4SWS[12-18]-3	15	0.25/0.3	20/18	1.22/1.3	20	2.0	180
18.0 to 26.5	4SWS[18-26]-1	5	0.2/0.25	25/20	1.15/1.22	3	2.0	180
18.0 to 26.5	4SWS[18-26]-2	10	0.25/0.3	20/18	1.22/1.3	3	2.0	180
18.0 to 26.5	4SWS[18-26]-3	15	0.3/0.35	20/18	1.22/1.3	3	2.0	150
26.5 to 40	4SWS[26-40]-1	5	0.2/0.25	20/18	1.2/1.35	1	1.5	150
26.5 to 40	4SWS[26-40]-2	5	0.4/0.5	20/18	1.25/1.35	20	1.5	150
26.5 to 40	4SWS[26-40]-3	10	0.4/0.5	20/18	1.25/1.35	1	1.5	150

Notes. Power - average power. * - Typical performance at (+ 25 \pm 10) °C. Max and Min values within temperature ranges 0 to +50 °C. Some devices can be delivered in T-junction configuration.



[X-X] - Group of Models, each for a definite central frequency of the range. While ordering a particular Model, central frequency of the range should be stated (see "Device Application. How to Order", page 3-6).

Package Size (mm)

Model	A	B	C	Waveguide
4SWS[8-12]-1	61	66	42	WR-90
4SWS[8-12]-2	61	66	42	
4SWS[8-12]-3	61	66	42	
4SWS[8-12]-4	61	66	42	
4SWS[8-12]-5	61	66	42	
4SWS[8-12]-6	61	66	42	
4SWS[12-18]-1	58	60	36	WR-62
4SWS[12-18]-2	58	60	36	
4SWS[12-18]-3	58	60	36	
4SWS[18-26]-1	39	40	24	WR-42
4SWS[18-26]-2	39	40	24	
4SWS[18-26]-3	39	40	24	
4SWS[26-40]-1	40	40	24	WR-28
4SWS[26-40]-2	40	40	24	
4SWS[26-40]-3	40	40	24	



Dimensions and flange types are specified by agreement with customer.

2. Switches for General Use 7.05 to 26.5 GHz



Frequency range GHz	Model	Band width %	Insertion loss (Typ*/Max) dB	Isolation (Typ*/Min) dB	VSWR (Typ*/Max)	Power W	Switch time μ s	Switch energy μ J
7.05 to 10.0	3SWY[7-10]-1	10	0.2/0.25	25/20	1.13/1.22	150	5	27/4
7.05 to 10.0	3SWY[7-10]-2	15	0.25/0.3	23/18	1.18/1.3	150	5	27/4
7.05 to 10.0	3SWY[7-10]-3	20	0.3/0.35	20/18	1.22/1.3	150	5	27/4
8.2 to 12.4	4SWY[8-12]-1	10	0.2/0.25	25/20	1.13/1.22	30	2.5	27/4
8.2 to 12.4	4SWY[8-12]-2	15	0.25/0.3	23/20	1.18/1.22	30	2.5	27/4
8.2 to 12.4	4SWY[8-12]-3	20	0.3/0.35	20/18	1.22/1.3	30	2.5	27/4
10.0 to 15.0	4SWY[10-15]-1	10	0.2/0.25	30/25	1.09/1.13	100	2.5	27/3
10.0 to 15.0	4SWY[10-15]-2	15	0.25/0.3	25/20	1.13/1.22	100	2.5	27/3
10.0 to 15.0	4SWY[10-15]-3	20	0.3/0.35	23/20	1.13/1.22	100	2.5	27/3
18.0 to 26.5	4SWY[18-26]-1	10	0.2/0.25	30/25	1.09/1.13	100	2.5	27/3
18.0 to 26.5	4SWY[18-26]-2	15	0.25/0.3	25/20	1.13/1.22	100	2.5	27/3
18.0 to 26.5	4SWY[18-26]-3	20	0.3/0.35	23/20	1.18/1.22	100	2.5	27/3

Notes. Power - average power.

* - Typical performance at (+ 25 \pm 10) °C. Max and Min values within temperature ranges -60 to +85 °C.



[X-X] - Group of Models, each for a definite central frequency of the range. While ordering a particular Model, central frequency of the range should be stated (see "Device Application. How to Order", page 3-6).

Package Size (mm)

Model	L	W	H	Waveguide
3SWY[7-10]-1	70	68	58	WR-112
3SWY[7-10]-2	70	68	58	
3SWY[7-10]-3	70	68	58	
4SWY[8-12]-1	52	50	50	WR-90
4SWY[8-12]-2	52	50	50	
4SWY[8-12]-3	52	50	50	
4SWY[10-15]-1	61	53	48	WR-75
4SWY[10-15]-2	61	53	48	
4SWY[10-15]-3	61	53	48	
4SWY[18-26]-1	54	48	48	WR-42
4SWY[18-26]-2	54	48	48	
4SWY[18-26]-3	54	48	48	



Dimensions and flange types are specified by agreement with customer.

3. Cryogenic (20 K) Y-junction Latching Switches 8.2 to 40 GHz



Frequency range GHz	Model	Band width %	Insertion loss Max dB	Isolation Min dB	VSWR Max	Power W	Switch time μ s	Switch energy μ J
8.2 to 12.4	4SWC[8-12]-1	5	0.15	25	1.15	0.2	2.0	200
8.2 to 12.4	4SWC[8-12]-2	10	0.2	20	1.22	0.2	2.0	200
12.4 to 18.0	4SWC[12-18]-1	5	0.2	25	1.15	0.2	2.0	180
12.4 to 18.0	4SWC[12-18]-2	10	0.2	20	1.22	0.2	2.0	180
18.0 to 26.5	4SWC[18-26]-1	5	0.2	25	1.15	0.2	2.0	180
18.0 to 26.5	4SWC[18-26]-2	10	0.2	20	1.22	0.2	2.0	180
26.5 to 40	4SWC[26-40]-1	5	0.2	20	1.2	0.2	1.5	150
26.5 to 40	4SWC[26-40]-2	10	0.4	20	1.25	0.2	1.5	150



[X-X] - Group of Models, each for a definite central frequency of the range. While ordering a particular Model, central frequency of the range should be stated (see "Device Application. How to Order", page 3-6).

Package Size (mm)

Model	A	B	C	Waveguide
4SWC[8-12]-1	61	66	42	WR-90
4SWC[8-12]-2	61	66	42	
4SWC[12-18]-1	58	60	36	WR-62
4SWC[12-18]-2	58	60	36	
4SWC[18-26]-1	39	40	24	WR-42
4SWC[18-26]-2	39	40	24	
4SWC[26-40]-1	40	40	24	WR-28
4SWC[26-40]-2	40	40	24	



Dimensions and flange types are specified by agreement with customer.

4. Redundancy Ferrite Switches for Space Application 3.4 to 9 GHz



Frequency range GHz	Model	Bandwidth %	Insertion loss Max dB	Isolation Min dB	VSWR Max	Forward power W	Reflected power W
3.4-3.9	3SWY36-1	14	0.2	25	1.2	100	10
5.85-8.2	3SWY[60-80]-1	10	0.4	23	1.25	1	0.1
7.0-10.0	3SWS[7-10]-1	8	0.2	25	1.2	90	9
7.0-10.0	3SWS[7-10]-2	7	0.3	25	1.2	1	0.1
7.4-7.7	3SWS76-1	4	0.2	25	1.2	120	12
8.025-8.4	3SWS80-1	5	0.2	20	1.2	20	2
8.028-9.0		11.5	3.0	15	1.5	20	2

Notes. RFI leakage: -60dB. Switching speed 100 ms, Switching rate – not more than 3 times per hour.



[X-X] - Group of Models, each for a definite central frequency of the range. While ordering a particular Model, central frequency of the range should be stated (see "Device Application. How to Order", page 3-6).

Environmental Specifications

Operating temperature: -60 to +90 °C

Low frequency sine vibration up to 30g

High mechanical shock resistance up to 500G

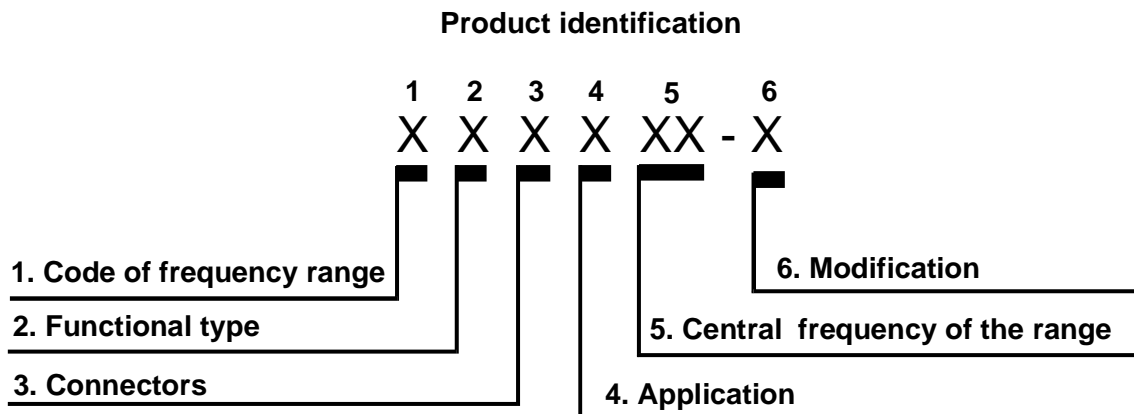
Humidity: 100 %

Minimum time to failure 100000 hours

Package Size (mm)

Model	L	W	H	Waveguide	Max weight, kg
3SWY36-1	140	121.2	56	WR-229	1.25
3SWY[60-80]-1	77.7	80	50	WR-137	0.8
3SWS[7-10]-1	77.7	80	57.6	WR-112	0.8
3SWS[7-10]-2	80	77.7	57.6	WR-112	0.8
3SWS76-1	82.4	68	57.6	WR-112	0.9
3SWS80-1	66.6	66.1	55	WR-90	0.52

Waveguide Ferrite Switch model numbering system describes many options. Adapting our basic catalog models to your specific needs will frequently result in lower costs and prompt delivery.



1. Code of frequency range and its Central frequency

1 Code of frequency range	Frequency range	5 Central frequency of the range
3	1 to 9 GHz	XX · 100 MHz
4	10 to 99 GHz	XX · 1 GHz
5	Over 100 GHz	XX · 10 GHz

2. Functional type

Code of the type	Product type
S	Switch

3. Connectors

Code of connectors	Type
W	Waveguide

4. Application

Code of application	Application
C	Cryogenic
S	Narrow band
Y	Broad bandwidth

5. Central frequency of the range

6. Modification