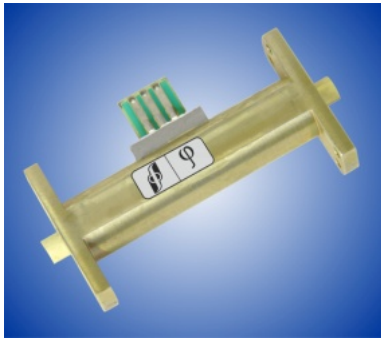


FERRITE PHASE SHIFTERS



FERRITE DOMEN Co.
Since 1959



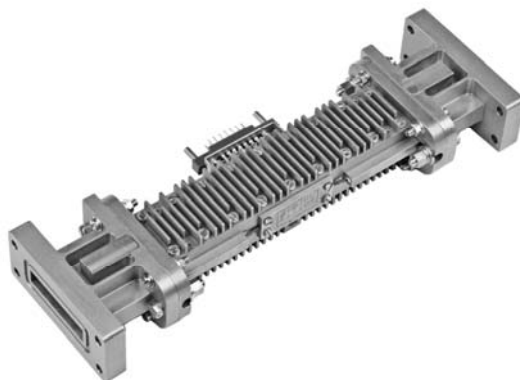
Ferrite Domen Co. provides microwave ferrite phase shifters for military, aerospace and commercial markets. Our devices covering the frequency range of 2.6 to 40 GHz and include toroidal, dual-mode and switched lines. These ones feature low insertion loss, wide operating power spectrum and high temperature stability.

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1. High Power Latching Phase Shifters 2.6 to 5.8 GHz



Frequency range GHz	Model	Band width %	Insertion loss dB	VSWR max	Phase shift deg.	Switch time μ s	Power, W		Control V/A
							Peak	Average	
2.6 - 3.5	3PWH33-1	16	1.0	1.30	0...337.5	30	8000	300	15/21
3.9 - 5.8	3PWH[39-58]-1	7	1.0*/1.2**	1.40	0...400	30	2000	200	15/21

Note. * - Typical performance at (+ 25 \pm 10) °C. ** - Max value within temperature ranges (-10 to +50) °C.
Operating temperature range (-10 to +50)°C.

Package Size (mm)

Model	L	W	H	Waveguide
3PWH33-1	300	115	55	WR-284*
3PWH[39-58]-1	280	100	40	WR-187*

Note. * - Reduced height waveguide.

2. High Power Latching Phase Shifters mm-wave Range 26.5 to 40 GHz



Frequency range GHz	Model	Band width %	Insertion loss dB	VSWR max	Phase shift deg.	Switch time μ s	Power, W		Control V/A
							Peak	Average	
26.5 - 40.0	4PWH[26-40]-1	6	1.0*/1.7**	1.30	0 ... 500	100	700	40	15/1.0

Note. * - Typical performance at (+ 25 \pm 10) °C. ** - Max value within temperature ranges (-60 to +70) °C.
Operating temperature range (-60 to +70)°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 5-6).

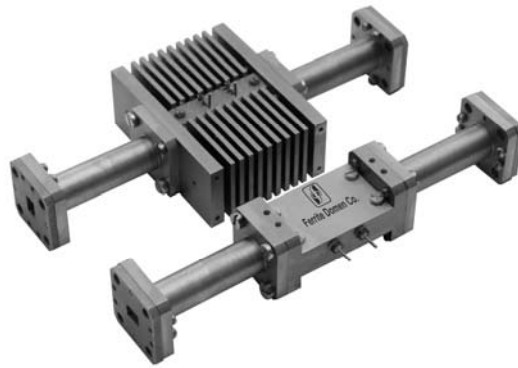
Package Size (mm)

Model	L	W	H	Waveguide
4PWH[26-40]-1	43	24	24	WR-28



Dimensions and flange types are specified by agreement with customer.

3. Phase Shifters mm-wave Range 26.5 to 40 GHz



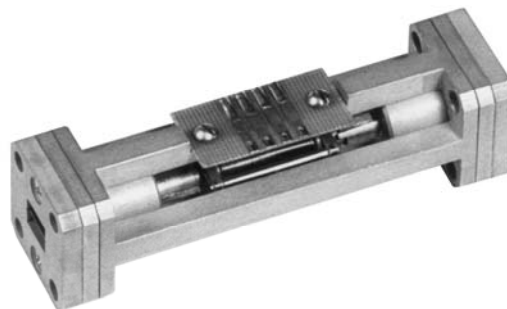
Frequency range GHz	Model	Band width %	Insertion loss dB	VSWR max	Phase shift deg.	Power, W		Control A
						Peak	Average	
26.5 - 40.0	4PWS[26-40]-2	6	0.8*/1.2**	1.30	-200 ... 200	2000	5	±0.5

Note. * - Typical performance at (+ 25 ± 10) °C. ** - Max value within temperature ranges (-60 to +70) °C.
Operating temperature range (-60 to +70)°C.

Package Size (mm)

Model	L	W	H	Waveguide
4PWS[26-40]-2	37	24	24	WR-28

4. Reciprocal Latching Phase Shifters mm-wave Range 26.5 to 50 GHz



Frequency range GHz	Model	Band width %	Insertion loss dB	VSWR max	Phase shift deg.	Switch time μs	Power, W		Control V/A
							Peak	Average	
26.5 - 40.0	4PWR[26-40]-1	5	1.5*/2.0**	1.30	0 ... 500	80	700	5	15/0.3
33.0 - 50.0	4PWR[26-40]-1	5	1.7*/2.2**	1.35	0 ... 500	70	700	4	15/0.3

Note. * - Typical performance at (+ 25 ± 10) °C. ** - Max value within temperature ranges (-40 to +70) °C.
Operating temperature range (-40 to +70)°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 5-6).

Package Size (mm)

Model	L	W	H	Diameter	Waveguide	Flange
4PWR[26-40]-1	70	19.1	19.1		WR-28	UG-599/U
4PWR[26-40]-1	65			28.6	WR-22	UG-599/U



Dimensions and flange types are specified by agreement with customer.

5. Latching Phase Shifters 5.4 to 40 GHz



Frequency range GHz	Model	Band width %	Insertion loss dB	VSWR max	Phase shift deg.	Sw. time μ s	Power, W		Control V/A	Oper. temp. °C
							Peak	AVG		
5.4 - 5.8	3PWF56-1	7	1.5	1.80	0 ... 480	150	1000	6	24/2.0	-40...+80
5.4 - 5.8	3PWF56-2	7	1.0*/1.2**	1.30	0 ... 480	150	1000	5	24/2.0	-10...+70
6.5 - 7.0	3PWF70-1	7	1.0*/1.3**		0 ... 400	150	70	3	27/2.0	-40...+50
13.4 - 14.8	4PWF14-1	10	1.2	-	0 ... 360	100	10	0.3	20/2.0	-40...+70
13.3 - 14.0	4PWF13-1	5	1,3	1,4	0 ... 360	100	202	1	20/2.0	-40...+70
16.0 - 16.3	4PWF16-1	2	1.2	-	0 ... 360	100	200	1.5	20/2.0	-40...+70
20.0 - 22.0	4PWH21-1	10	1.0	1.30	0 ... 360	10	100	10	10/3.5	-10...+60
26.5 - 40.0	4PWF[26-40]-1	3	1.0*/1.6**	refl.	0 ... 450	40	300	5	15/0.3	-40...+70
26.5 - 40.0	4PWF[26-40]-2	6	0.9*/1.5**	1.30	0 ... 400	100	700	7	15/0.3	-40...+70

Note. * - Typical performance at $(+ 25 \pm 10)$ °C. ** - Max value within operating temperature ranges.



[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 5-6).

Package Size (mm)

Model	L	W	H	Diameter
3PWF56-1	270	16.5	16.5	
3PWF56-2	100			16
3PWF70-1	110	28	20	
4PWF14-1	44.2			10
4PWF13-1	61.5			16
4PWF16-1	60.2	30	10.7	
4PWH21-1	70	29	29	
4PWF[26-40]-1	55			6
4PWF[26-40]-2	45			6.5



Dimensions and flange types are specified by agreement with customer.

6. Dual Mode Phase Shifters for Linear Arrays 26.5 to 50 GHz



Frequency range GHz	Model	Band width %	Insertion loss dB	VSWR max	Phase shift deg.	Switch time μ s	Power, W		Control V/A
							Peak	Average	
26.5 - 40.0	4PWD[26-40]-1	3	1.5*/2.0**	1.40	0 ... 500	60	700	5	15/0.3
33.0 - 50.0	4PWD[26-40]-1	3	1.7*/2.2**	1.45	0 ... 500	50	700	4	15/0.3

Note. * - Typical performance at (+ 25 \pm 10) °C. ** - Max value within temperature ranges (-40 to +70) °C.
Operating temperature range (-40 to +70)°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 5-6).

Package Size (mm)

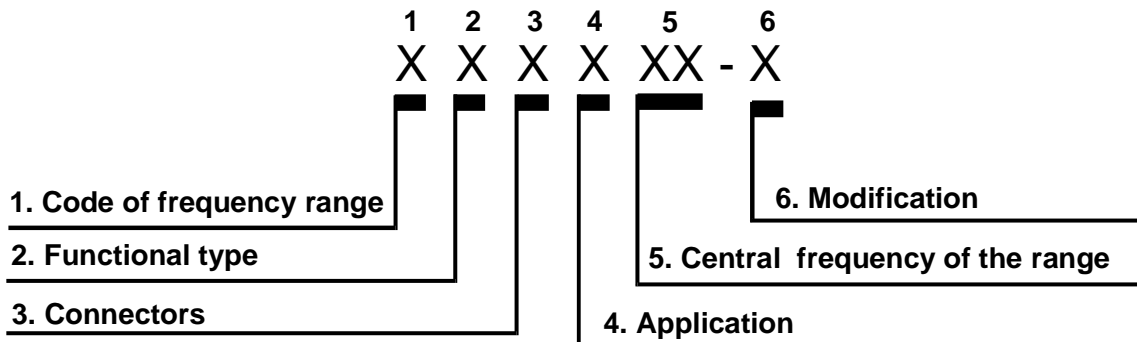
Model	L	Diameter	Waveguide
4PWD[26-40]-1	70	5.5	WR-28
4PWD[26-40]-1	65	4.5	WR-22



Dimensions and flange types are specified by agreement with customer.

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

Product identification



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

2. Functional type

Code of the type	Product type
P	Phase Shifter

3. Connectors

Code of connectors	Type
W	Waveguide

4. Application

Code of application	Application
D	Dual Mode
F	Faraday rotational
H	High power
R	Reciprocal
S	Standard

5. Central frequency of the range

6. Modification