

Ferrite Domen Co.'s Microstrip and Drop-in Isolators & Circulators are used in commercial, military, and space applications.

We offer the complete line of Microstrip and Drop-In Isolators and Circulators for 220 MHz to 94.5 GHz. These devices are manufactured with high-quality materials to assure optimum performance over a long period of time. Devices with surface-mount configuration, phase matching, counter-clockwise rotation, higher reverse power capability along with required intermodulation specifications can be provided upon request. If your specific requirements are not covered in the following tables, please contact us, and we will find a proper solution.

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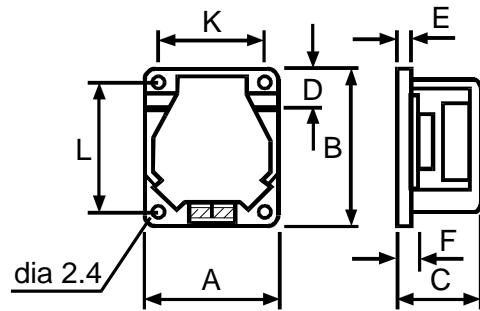
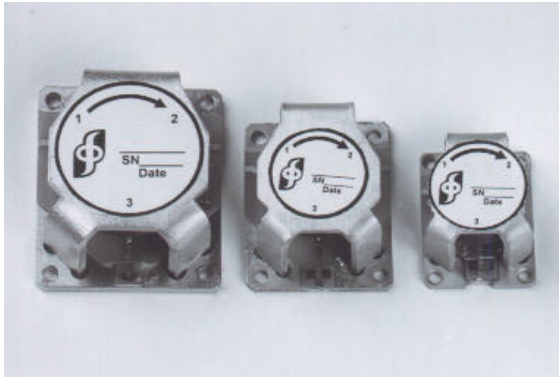
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1. Lumped Element Isolators



Frequency range MHz	Model	Bandwidth %, min	Insertion loss dB, max	Isolation dB, min	VSWR max
220 to 310	2IMS22-31*	10	0.7	18	1.35
290 to 360	2IMS29-36*	10	0.6	20	1.3
350 to 550	2IMS35-55*	10	0.6	20	1.3
530 to 620	2IMS53-62*	10	0.6	20	1.3
600 to 990	2IMS60-99*	15	0.6	20	1.3
957 to 1218	3IMS11-1	20	0.6	20	1.3

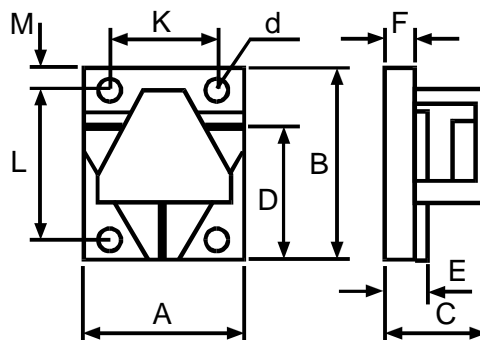
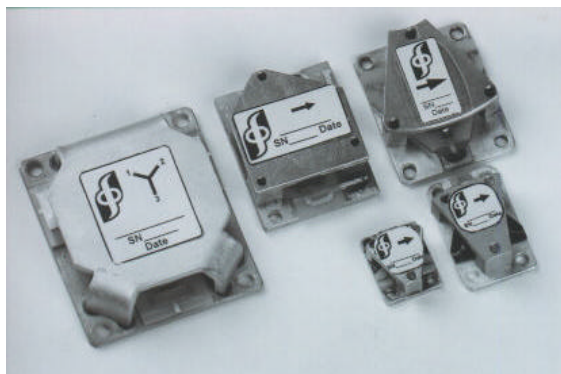
*- Group of Models, each for a definite central frequency of the range. While ordering a particular Model, central frequency of the range should be stated (see "Device Application. How to Order"). Operating temperature: -30 to +70 °C.

Power handling: average power -15 W. Average reverse power - 4 W.

Outlines (all dimensions are in millimeters)

Model	A	B	C	D	E	F	K	L
2IMS22-31	32	50	17	12	2.0	3.1	27	45
2IMS29-36	32	40	17	12	2.0	3.1	27	35
2IMS35-55	30	36	16	11	2.0	3.1	25	31
2IMS53-62	24	30	15	8	1.5	2.5	19	25
2IMS60-99	24	30	15	8	1.5	2.5	19	25
3IMS11-1	24	30	15	8	1.5	2.5	19	25

2. Broadband Isolators and Circulators



Frequency range GHz	Model	Insertion loss dB, max	Isolation dB, min	VSWR max
0.96 to 1.215	3□MS12-1	0.6	20	1.3
1.22 to 1.5	3IMS14-1	0.6	20	1.3
1.48 to 1.72	3□MS16-1	0.5	20	1.25
2.0 to 3.0	3□MS25-1	0.5	20	1.3
2.4 to 3.6	3□MS30-1	0.5	20	1.3
2.85 to 4.3	3□MS36-1	0.5	20	1.3
3.75 to 5.64	3□MS47-1	0.5	20	1.3
4.75 to 7.15	3□MS60-1	0.5	20	1.3
5.6 to 8.4	3□MS70-1	0.5	20	1.3
7.0 to 10.5	3□MS85-1	0.7	20	1.3
8.0 to 12.0	4□MS10-1	0.7	20	1.3
11.6 to 15.0	4□MS13-1	0.6	20	1.3
13.5 to 17.44	4□MS15-1	0.6	20	1.3
17.44 to 22.5	4□MS21-1	0.7	20	1.4
20.0 to 25.86	4□MS23-1	0.7	20	1.4

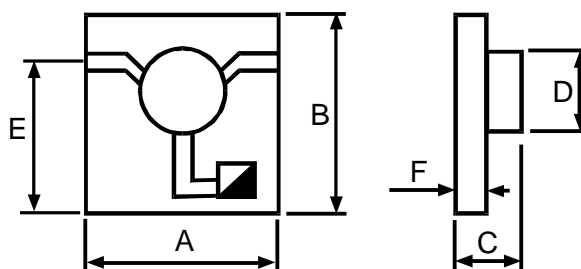
Bandwidth- full, Power handling: Peak power 50 to 300 W. Average power - 2 to 15 W, reverse power - 0.25 to 10 W.
Operating temperature: -30 to +70 °C.

Outlines (all dimensions are in millimeters)

Model	A	B	C	D	E	F	K	L	d
3□MS12-1	36	42	10	30	3.0	2.0	30	37	2.9
3IMS14-1	30	40	10	29	3.0	2.0	25	35	2.9
3□MS16-1	24	30	8.5	21.5	3.0	2.0	18	26	2.4
3□MS25-1	36	42	10	31	3.0	2.0	30	37	2.9
3□MS30-1	36	42	10	31	3.0	2.0	30	37	2.9
3□MS36-1	30	40	10	30	3.0	2.0	25	35	2.9
3□MS47-1	24	30	8.5	21.5	2.5	1.5	19	25	2.4
3□MS60-1	24	30	8.5	21.5	2.5	1.5	19	25	2.4
3□MS70-1	15	24	8.5	16	2.5	1.5	10	19	2.4
3□MS85-1	15	24	8.5	16	2.5	1.5	10	19	2.4
4□MS10-1	15	24	8.5	16	2.5	1.5	10	19	2.4
4□MS13-1	12	15	7.5	10	2.0	1.5	8.6	11.8	1.9
4□MS15-1	12	15	7.5	10	2.0	1.5	8.6	11.8	1.9
4□MS21-1	12	15	7.5	10	2.0	1.5	8.6	11.8	1.9
4□MS23-1	12	15	7.5	10	2.0	1.5	8.6	11.8	1.9

Note. In blank box □: I - Isolator, C- Circulator to be identified at ordering.

3. Substrate Type Isolators and Circulators



Frequency range GHz	Model	Insertion loss dB, max	Isolation dB, min	VSWR max	Operating temperature °C
2.0 to 3.0	3□MM20-30*	0.5	20	1.3	-20 to +60
3.0 to 5.0	3□MM30-50*	0.5	20	1.3	-20 to +60
5.0 to 9.0	3□MM50-90*	0.5	20	1.3	-20 to +60
8.0 to 10.0	3□MM80-99*	0.5	20	1.3	-20 to +60
10.0 to 13.0	4□MM10-13*	0.5	20	1.3	-30 to +60
13.0 to 18.0	4□MM13-18*	0.6	20	1.3	-30 to +60

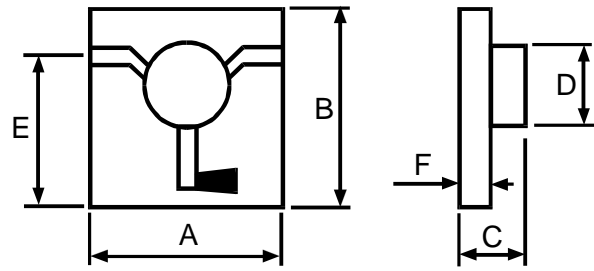
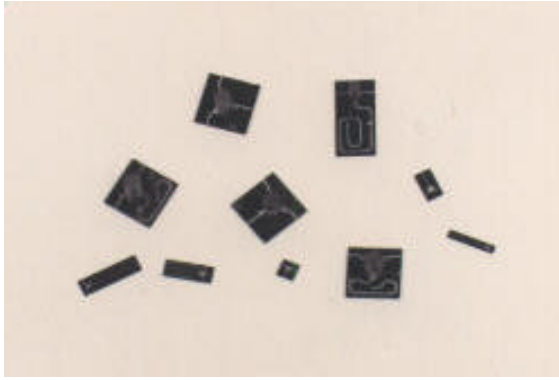
*- Group of Models, each for a definite central frequency of the range. While ordering a particular Model, central frequency of the range should be stated (see "Device Application. How to Order").
Handling power 5 W. Reflected power for isolators 1 W. Band width = 15% max.

Outlines (all dimensions are in millimeters)

Model	A	B	C	D	E	F
3□MM20-30	20.0	20.0	5.0	15.0	18.0	1.0
3□MM30-50	12.0	15.0	5.0	12.0	12.5	1.0
3□MM50-90	10.0	10.0	5.0	5.0	7.5	0.635
3□MM80-99	9.0	9.0	5.0	5.0	7.5	0.635
4□MM10-13	7.0	7.0	5.0	3.0	5.5	0.635
4□MM13-18	7.0	7.0	5.0	3.0	5.5	0.5

Note. In blank box □: I - Isolator, C- Circulator to be identified at ordering.

4. Substrate Type Isolators and Circulators



Frequency range GHz	Model	Bandwidth %	Insertion loss dB, max	Isolation dB, min	VSWR max	Operating temperature °C
18.0 to 25.0	4□MM19-24*	10	0.8	17	1.35	-30 to +70
25.0 to 32.0	4□MM25-32*	9	0.9	17	1.35	-30 to +70
32.0 to 46.0	4□MM33-45*	9 - 5	1 - 1.2	18	1.3	-30 to +70
56.0 to 61.0	4□MM56-61*	3	1.2	20	1.5	-30 to +70
76.0 to 77.0	4□MM76-1C	Full	1.3	18	1.5	-10 to +40
93.5 to 94.5	4□MM94-1C	Full	1.6	18	1.5/1.3	-10 to +40

Handling power 2 W (18 to 37 GHz), 1 W (37 to 94.5 GHz). Power absorption by load: 0.5 W.

Outlines (all dimensions are in millimeters)

Model	A	B	C	D	E	F
4□MM19-24	6.0	6.0	2.5	2.2	5.0	0.38
4IMM25-32	6.0	6.0	2.5	2.0	5.0	0.38
4IMM33-45	5.0	5	2.5	1.3	3.9	0.2
4CMM33-45	4.5	4.5	2.5	1.3	3.9	0.2
4□MM56-61	2.0	5.5	2.2	0.8	4.6	0.15
4IMM76-1	2.0	7.0	2.5	0.6	6.38	2.5
4CMM76-1	2.0	2.0	2.5	0.6	1.38	2.5
4IMM94-1	1.0	5.7			5.15	
4CMM94-1	1.0	1.5			0.7	

Note. In blank box □: I - Isolator, C- Circulator to be identified at ordering.

5. Metal Carrier Type Isolators and Circulators

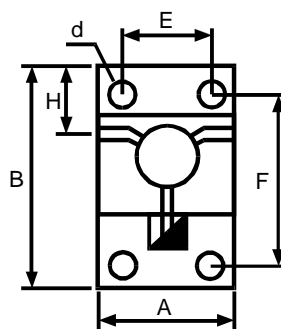
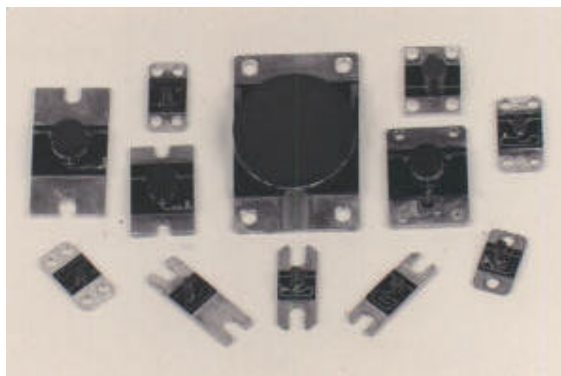


Fig. 1

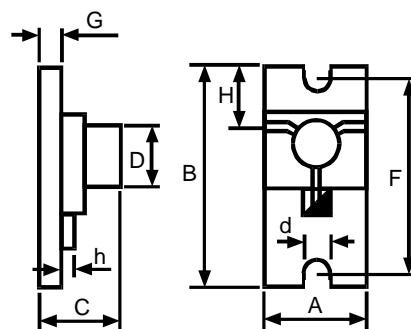


Fig. 2

Frequency range GHz	Model	Bandwidth h %	Insertion loss dB, max	Isolation dB, min	VSWR max	Handling power W.CW	Power absorption W.CW
2.0 to 3.0	3□MS20-30*	15	0.5	20	1.25	10	5
3.4 to 4.2	3□MS30-50*	15	0.5	20	1.25	10	5
5.0 to 9.0	3□MS50-90*	15	0.4	20	1.25	10	3
8.4 to 10.7	3□MS95-1	15	0.4	20	1.25	10	3
11.0 to 18.0	4□MS11-18*	10	0.6	20	1.25	10	3
18.0 to 33.0	4IMS19-32*	10**/9***	0.9	20	1.35	2	1
32.0 to 47.0	4IMS34-46*	9**/5***	1.0/1.2	20	1.3	1	0.5

* - 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").

** - Bandwidth within 18 to 26 GHz. *** - Bandwidth within 26 to 32 GHz. Operating temperature:(-30 to +70) °C.

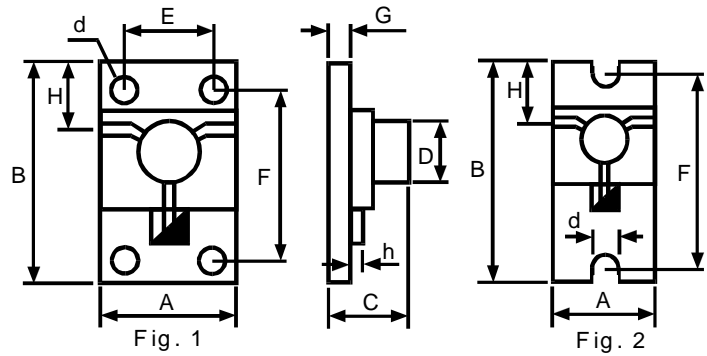
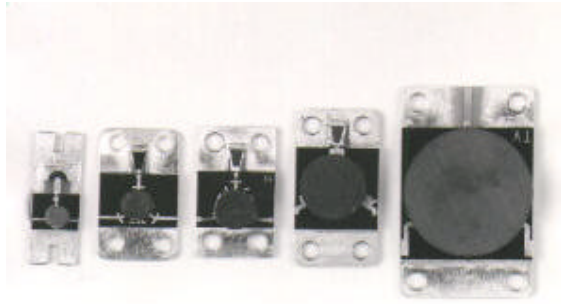
Outlines (all dimensions are in millimeters)

Model	A	B	C	d	E	F	G	h	H	D	Fig.
3□MS20-30	20	30	6.0	2.5	15	25	1.2	1.0	6.5	9	1
3□MS30-50	15	25	6.0	2.5	10	20	1.2	1.0	9.0	9	1
3□MS50-90	12	20	6.5	2.5	7	15	1.2	0.635	6.5	5	1
3□MS95-1	9	19	5.5	2.5	-	14	1	0.635	7.5	3	2
4□MS11-18	7	19.5	5.0	2.5	-	15.5	1	0.635	6.0	3	2
4IMS19-32	6	17.5	3.5	2.5	-	13.5	1.2	0.38/0.25	6.15	2.2	2
4IMS34-46	5	11	3.5	1.6	-	8	1.0	0.2/0.15	4.1	1.2	2

Profiles of both types of Devices are the same.

Note. In blank box □: I - Isolator, C- Circulator to be identified at ordering.

6. Metal Carrier Type Isolators for High Power Absorption



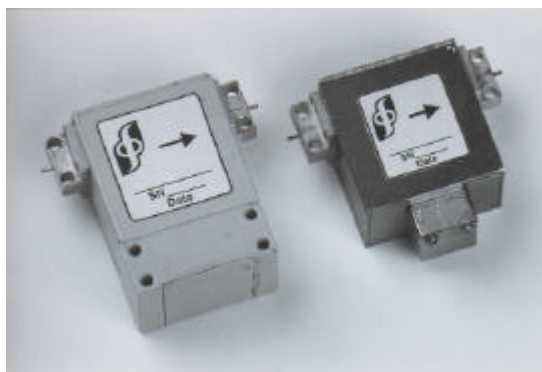
Frequency range GHz	Model	Insertion loss dB, max	Isolation dB, min	VSWR max	Handling power W.CW	Power absorption W.CW
2.3 to 3.0	3IMS20-30*	0.5	20	1.25	15	10
3.0 to 5.0	3IMS30-50P*	0.5	20	1.2	15	10
5.0 to 10.0	3IMS50-10P*	0.4	20	1.2	15	10
10.0 to 16.0	4IMS11-16P*	0.5/0.6	18	1.25	10	5

*- 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").
Operating temperature: -30 to +70 °C. Bandwidth - 15 %.

Outlines (all dimensions are in millimeters)

Model	A	B	C	d	E	F	G	h	H	D	Fig.
3IMS20-30	20	30	6.0	2.5	15	25	1.2	1.0	6.5	19	1
3IMS30-50P	15	25	6.0	2.5	10	20	1.2	1.0	9.0	9	1
3IMS50-10P	12	20	6.0	2.5	7	15	1.2	0.5	6.5	5	1
4IMS11-16P	7	19.5	5.0	2.5	0	15.5	1.0	0.635	6.0	3	2

1. Drop-in Isolators



Frequency range GHz	Model	Insertion loss dB	Isolation dB	VSWR max	Oper. temp. °C	Aver/Reverse power W
0.146 to 0.353 ¹⁾	2IDS25-1	0.6	20	1.25	-50 to +70	15/5
0.170 to 0.230	2IDS20-1	0.7	19	1.35	-20 to +80	200/100
0.400 to 0.600 ²⁾	2IDS46-2	0.5	20	1.3	0 to +60	60/60
0.470 to 0.580	2IDS53-1	0.6	20	1.25	-20 to +80	200/100
0.570 to 0.710	2IDS64-1	0.5	20	1.25	-20 to +80	200/100
0.700 to 0.862	2IDS78-1	0.5	20	1.20	-20 to +80	200/100
0.800 to 1.000 ³⁾	2IDS83-1	0.4	19	1.25	-50 to +70	60/60
0.925 to 0.960	2IDS94-5	0.3	28	1.15	-30 to +80	50/50
1.400 to 1.550	3IDS14-2	0.5	18	1.3	-10 to +70	5/5
1.420 to 1.525	3IDS15-1	0.5	19	1.25	0 to +50	50/20
1.350 to 1.850	3IDS15-4	0.8	15	1.5	-50 to +70	50/50
1.620 to 1.661	3IDS16-2	0.5	17	1.35	0 to +50	30/10
1.620 to 1.661	3IDS16-1	0.4	20	1.25	0 to +50	30/10
1.860 to 1.990	3IDS19-1	0.6	17	1.35	-30 to +70	50/20
2.50 to 2.70	3IDS26-2	0.6	20	1.3	-10 to +60	15/15
2.90 to 3.10	3IDS30-1	0.5	19	1.25	-10 to +60	15/15

Devices operate within full bandwidth, except ¹⁾ - bandwidth 7 MHz, ²⁾ - bandwidth 20 MHz, ³⁾ - bandwidth 25 MHz.

Outlines (all dimensions are in millimeters)

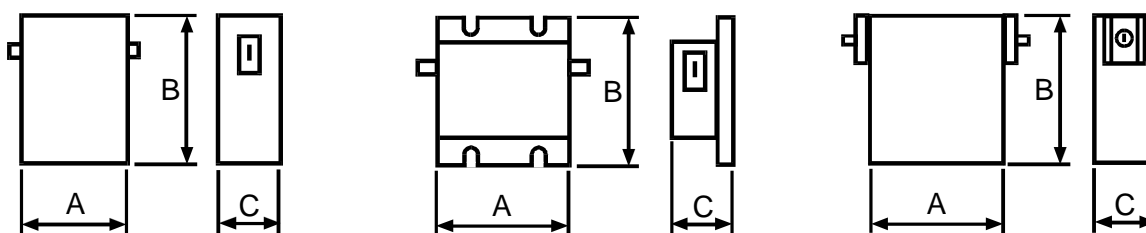


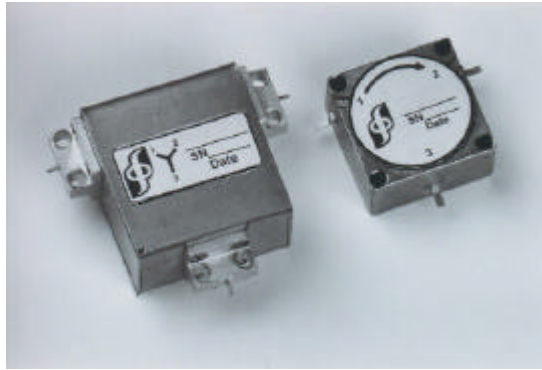
Fig. 1

Fig. 2

Fig. 3

Model	A	B	C	Fig.
2IDS25-1	40	48	22	2
2IDS20-1	70	70	25	1
2IDS46-2	35	46	9.3	1
2IDS53-1	50	50	20	2
2IDS64-1	50	50	20	2
2IDS78-1	50	50	20	2
2IDS83-1	25.4	31.8	8.3	1
2IDS94-5	31.5	46	20	3
3IDS14-2	25.4	25.4	8.7	1
3IDS15-1	19	25.4	8.3	1
3IDS15-4	35	46	12.7	1
3IDS16-2	19	20	8.3	1
3IDS16-1	19	25.4	9.3	1
3IDS19-1	19	25.4	9.3	1
3IDS26-2	19	21	9.3	1
3IDS30-1	19	21	9.3	1

2. Drop-in Circulators



Frequency range GHz	Model	Insertion loss dB	Isolation dB	VSWR	Oper. temp. °C	Average power W
0.270 to 0.315	2CDS29-1	0.6	20	1.25	0 to +50	30
0.400 to 0.600 ¹⁾	2CDS50-1	0.5	18	1.3	0 to +65	60
0.800 to 0.960	2CDS88-1	0.4	20	1.22	0 to +65	150
0.824 to 0.849	2CDS83-1	0.4	20	1.25	0 to +65	60
0.864 to 0.894	2CDS87-1	0.4	20	1.25	0 to +65	60
0.890 to 0.915	2CDS90-1	0.4	20	1.25	0 to +65	60
0.925 to 0.960	2CDS94-1	0.4	20	1.2	-10 to +85	50
0.925 to 0.960	2CDS94-3	0.2	23	1.15	0 to +65	100
0.935 to 0.960	2CDS94-2	0.5	20	1.25	0 to +65	60
0.960 to 1.215	3CDS10-1	0.5	19	1.25	-55 to +85	50
1.400 to 1.455	3CDS14-1	0.4	20	1.25	0 to +50	30
1.420 to 1.525	3CDS15-1	0.5	19	1.25	0 to +50	50
1.460 to 1.660	3CDS15-2	0.3	23	1.15	+5 to +55	100
1.805 to 1.880	3CDS18-1	0.2	23	1.15	-10 to +70	50
1.930 to 1.990	3CDS19-1	0.2	21	1.15	-10 to +70	50

Devices operate within full bandwidth, except ¹⁾ - bandwidth 10 MHz.

Outlines (all dimensions are in millimeters)

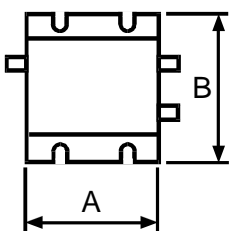


Fig. 1

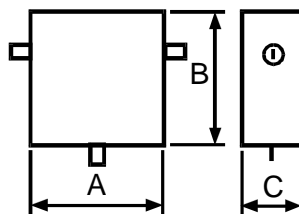


Fig. 2

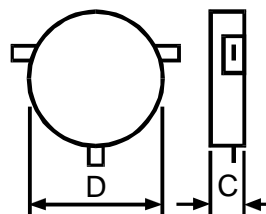


Fig. 3

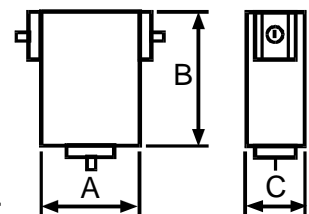
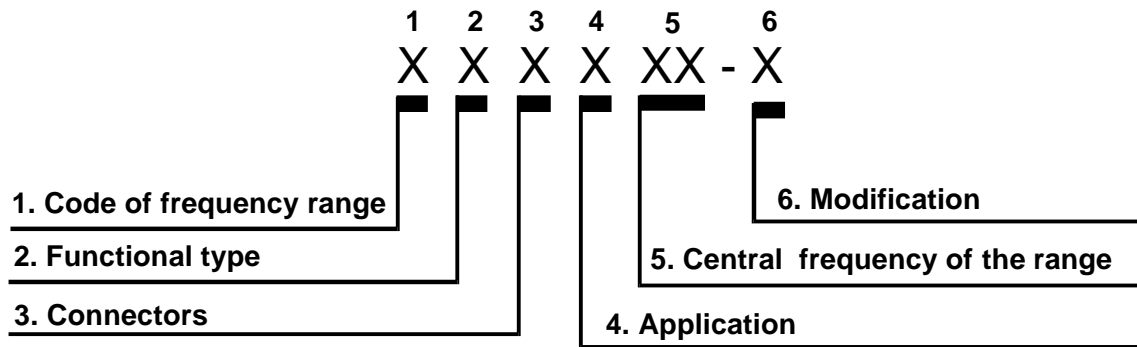


Fig. 4

Model	A	B	C	D	Fig.
2CDS29-1	60	60	25		1
2CDS50-1	35	35	9.3		2
2CDS88-1	34.3	34.3	12.7		2
2CDS83-1			7.2	24.1	3
2CDS87-1			7.2	24.1	3
2CDS90-1			7.2	24.1	3
2CDS94-1	25.4	25.4	13		2
2CDS94-3	31	33.8	19		4
2CDS94-2			9	25	3
3CDS10-1	31.75	31.75	12.7		2
3CDS14-1	25.4	25.4	8.3		2
3CDS15-1	19	20	8.3		2
3CDS15-2	31	33.8	19		4
3CDS18-1	25.4	25.4	12.6		4
3CDS19-1	31	33.8	20.1		4

Microstrip and Drop-in Isolator & Circulator 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		5
Code of frequency range	Frequency range	Central frequency of the range
0	1 to 9 MHz	XX · 0.1 MHz
1	10 to 99 MHz	XX · 1 MHz
2	100 to 999 MHz	XX · 10 MHz
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
I	Isolator
C	Circulator

3. Connectors

Code of connectors	Type
M	Microstrip
D	Drop-in

4. Application

Code of application	Application
S	Standard
L	Low loss
B	Wide Bandwidth
P	Peripheral Mode
M	Medium Power
H	High Power
C	Cryogenic
M	Miniature
X	4-port

5. Central frequency of the range

6. Modification