

RFS Ferrocom Isolators/Circulators

A broad range of ferrite devices which are unequalled in performance, quality and reliability.

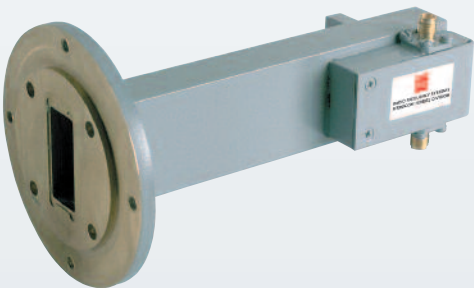


- ➔ Coaxial
- ➔ Isodapters
- ➔ Drop-in
- ➔ Waveguide



RADIO FREQUENCY SYSTEMS
Ferrocom Ferrite Division

TABLE OF CONTENTS



Isolators/Circulators

Introduction	1
Coaxial Isolators/Circulators	2-3
Connector Options	4
Isodapters	5
“R” Class Drop-ins	6-8
“S” Class Drop-ins	9
Waveguide	10
4 Port Coaxial for Public Safety Applications.....	11
Ordering Information	12
RFQ Order Guide	13

RFS FERROCOM INTRODUCTION



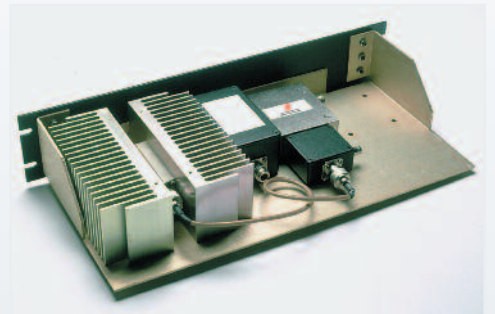
RFS Ferrocom currently carries over 2,000 existing designs as well as a highly skilled engineering staff that is ready to develop isolators/circulators to your specifications. Our units are ideally suited for integration into compact systems requiring dependable performance with stripline, waveguide, drop-in and isodapter packages available.



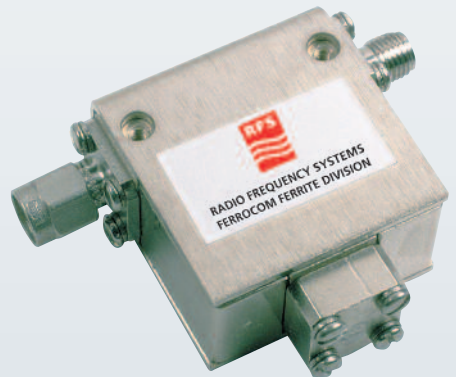
RFS Ferrocom proudly offers the marketplace a broad range of ferrite devices which are unequalled in performance, quality and reliability.

In keeping with our commitment to quality, our facility is registered to the ISO-9001/2015 quality standard and fully compliant with MIL-I-45208A.

RFS Ferrocom, an industry leader in the manufacture of isolators and circulators, offers a complete line of ferrite devices covering the range of 80 MHz to 40 GHz. Our extensive line of isolators and circulators extend from narrow band models to units with greater than octave bandwidths. These units provide the lowest possible insertion loss for a specified set of operating conditions and requirements. Optimized isolation characteristics are accomplished as a result of state-of-the-art impedance matching and design techniques.



RFS Ferrocom currently carries over 2,000 existing designs

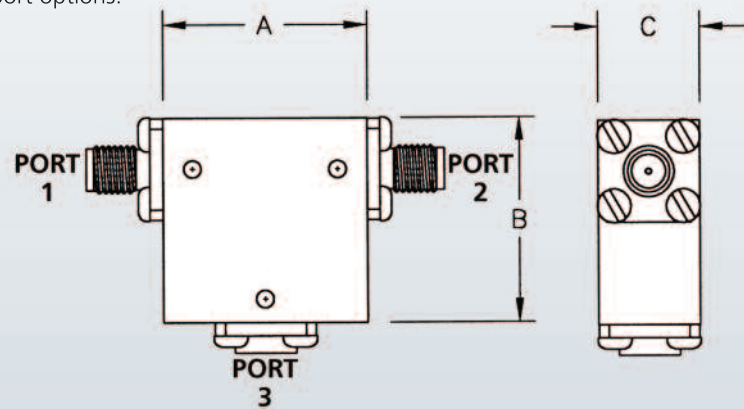


COAXIAL ISOLATORS/CIRCULATORS



Standard coaxial isolators and circulators cover a wide frequency spectrum ranging from 80 MHz to 30 GHz. These devices offer good electrical performance and easy integration. Package size varies depending on the operating frequency. Critical parameters can be optimized to meet specific requirements for each application. SMA-type connectors are the standard interface. Other connector options are available upon request.

- Isolator load rating 10 Watts. Circulator power rated at 2.0:1 mismatch.
- Additional frequencies available.
- Custom configurations available including various connector types and multiport options.



Product Specifications

Model Number	Frequency, GHz	Isolation		VSWR		Insertion Loss		Operating Temperature, C	Dimensions (A x B x C), in	Power, Peak, W	Power, Avg, W	Weight, G
		Typ, dB	Min, dB	Typ	Max	Typ, dB	Max, dB					
9T17	0.132-0.146	24.0	20.0	1.14	1.25	0.40	0.60	-30 to +70	3.40 x 3.62 x 1.51	2K	350	1500
9T18	0.144-0.160	24.0	20.0	1.14	1.25	0.40	0.60	-30 to +70	3.40 x 3.62 x 1.51	2K	350	1500
9T19	0.158-0.175	24.0	20.0	1.14	1.25	0.40	0.60	-30 to +70	3.40 x 3.62 x 1.51	2K	350	1500
9T20	0.173-0.200	24.0	20.0	1.14	1.25	0.40	0.60	-30 to +70	3.40 x 3.62 x 1.51	2K	300	1500
9T38	0.198-0.225	24.0	20.0	1.14	1.25	0.40	0.60	-30 to +70	3.40 x 3.62 x 1.51	2K	300	1500
9C25	0.223-0.250	24.0	20.0	1.14	1.25	0.40	0.50	-30 to +70	3.00 x 3.00 x 1.10	2K	300	1000
9C26	0.248-0.278	24.0	20.0	1.14	1.25	0.40	0.50	-30 to +70	3.00 x 3.00 x 1.10	2K	300	1000
9C67	0.270-0.290	28.0	23.0	1.08	1.15	0.18	0.25	-30 to +70	3.00 x 3.00 x 1.10	2K	250	1000
9C21	0.276-0.329	24.0	20.0	1.14	1.22	0.35	0.40	-30 to +70	3.00 x 3.00 x 1.10	2K	250	1000
9C68	0.325-0.360	24.0	20.0	1.14	1.25	0.40	0.50	-30 to +70	3.00 x 3.00 x 1.10	2K	175	1000
9C69	0.350-0.400	24.0	20.0	1.14	1.25	0.40	0.50	-30 to +70	3.00 x 3.00 x 1.10	2K	175	1000
9C70	0.395-0.447	24.0	23.0	1.12	1.15	0.28	0.30	-30 to +70	3.00 x 3.00 x 1.25	2K	175	1200
9C71	0.403-0.524	19.0	17.0	1.25	1.35	0.50	0.60	-30 to +70	3.00 x 3.00 x 1.25	2K	175	1200
9C73	0.490-0.560	24.0	20.0	1.14	1.25	0.30	0.40	-30 to +70	2.50 x 2.50 x 1.25	2K	175	800
9C74	0.550-0.620	24.0	20.0	1.14	1.25	0.30	0.40	-30 to +70	2.50 x 2.50 x 1.25	2K	175	800
9C75	0.610-0.680	24.0	20.0	1.14	1.25	0.30	0.40	-30 to +70	2.50 x 2.50 x 0.50	2K	175	800
9C76	0.670-0.740	24.0	20.0	1.14	1.25	0.30	0.40	-30 to +70	2.50 x 2.50 x 1.25	2K	175	800
9C77	0.730-0.800	24.0	20.0	1.14	1.25	0.30	0.40	-30 to +70	2.50 x 2.50 x 1.25	2K	175	800
9A47	0.790-0.960	24.0	20.0	1.14	1.25	0.40	0.50	-30 to +70	1.25 x 1.25 x 0.75	1.5K	175	150
9C78	0.800-0.900	25.0	23.0	1.12	1.15	0.25	0.30	-30 to +70	1.50 x 1.50 x 1.02	1.5K	175	250
9C79	0.900-1.000	25.0	23.0	1.12	1.15	0.25	0.30	-30 to +70	1.50 x 1.50 x 1.02	1.5K	175	250

NOTE: Heat sink temperature must not exceed the maximum operating temperature specified.

(continued)

COAXIAL ISOLATORS/CIRCULATORS



Product Specifications (continued)

Model Number	Frequency, GHz	Isolation		VSWR		Insertion Loss		Operating Temperature, C	Dimensions (A x B x C), in	Power, Peak, W	Power, Avg, W	Weight, G
		Typ, dB	Min, dB	Typ	Max	Typ, dB	Max, dB					
9C80	0.95-1.225	20.0	18.0	1.25	1.30	0.30	0.40	-30 to +70	1.50 x 1.50 x 0.75	250	100	200
9A81	1.00-1.20	24.0	20.0	1.14	1.25	0.30	0.40	-30 to +70	1.25 x 1.25 x 0.75	250	100	150
9A82	1.20-1.40	24.0	20.0	1.14	1.25	0.30	0.40	-30 to +70	1.25 x 1.25 x 0.75	250	100	150
9A83	1.35-1.85	20.0	18.0	1.25	1.30	0.35	0.50	-30 to +70	1.25 x 1.25 x 0.75	250	100	150
20A137	1.60-1.80	24.0	20.0	1.14	1.22	0.30	0.40	-30 to +70	1.00 x 1.00 x 0.50	200	100	50
20A100	1.70-2.00	25.0	21.0	1.12	1.20	0.20	0.30	-30 to +70	1.00 x 1.00 x 0.50	200	100	50
20A2	2.00-2.30	25.0	21.0	1.12	1.20	0.20	0.30	-30 to +70	1.00 x 1.00 x 0.50	200	100	50
20A111	2.30-2.70	24.0	20.0	1.14	1.22	0.30	0.40	-30 to +70	1.00 x 1.00 x 0.50	200	100	50
20B1	1.70-2.30	23.0	20.0	1.15	1.22	0.25	0.30	-30 to +70	1.63 x 1.63 x 0.75	100	25	225
20E26	1.70-2.30	24.0	20.0	1.14	1.22	0.20	0.25	-10 to +85	2.00 x 2.13 x 1.00	100	25	300
20E19	1.70-2.10	25.0	20.0	1.14	1.22	0.20	0.25	-10 to +85	2.00 x 2.13 x 1.00	100	25	300
20E49	1.70-2.70	23.0	20.0	1.15	1.22	0.20	0.25	-10 to +85	2.00 x 2.13 x 1.00	100	25	300
20B29	2.00-3.00	23.0	20.0	1.15	1.25	0.30	0.40	0 to +50	1.63 x 1.63 x 0.75	100	25	225
24A13	2.50-3.50	23.0	20.0	1.15	1.25	0.30	0.40	-20 to +65	1.63 x 1.63 x 0.75	100	25	225
40B74	2.80-3.50	23.0	20.0	1.15	1.25	0.30	0.40	-20 to +65	1.00 x 1.00 x 0.50	100	25	50
40A13	3.40-4.20	23.0	20.0	1.15	1.22	0.25	0.30	-20 to +65	0.75 x 0.88 x 0.50	100	25	40
40B54	3.60-4.20	28.0	26.0	1.08	1.15	0.15	0.17	-20 to +65	1.00 x 1.00 x 0.50	100	25	50
40B48	3.70-4.80	24.0	21.0	1.14	1.20	0.30	0.35	-20 to +65	1.00 x 1.13 x 0.50	100	25	75
40B63	4.40-5.00	28.0	23.0	1.08	1.15	0.18	0.20	-20 to +65	1.00 x 1.13 x 0.50	100	25	75
40B89	5.00-6.00	26.0	23.0	1.10	1.15	0.18	0.20	-20 to +65	1.00 x 1.13 x 0.50	100	25	75
45B19	5.40-5.90	26.0	20.0	1.10	1.25	0.25	0.30	-20 to +65	0.75 x 0.75 x 0.50	100	25	30
51A28	5.80-6.50	26.0	21.0	1.10	1.20	0.30	0.35	-20 to +65	0.50 x 0.63 x 0.50	100	25	20
40B75	5.90-7.125	26.0	23.0	1.10	1.15	0.18	0.20	-20 to +65	1.00 x 1.13 x 0.50	100	25	75
60A74	5.90-8.50	23.0	20.0	1.15	1.25	0.25	0.30	-20 to +65	0.75 x 0.88 x 0.50	100	15	40
60D166	6.80-8.20	23.0	20.0	1.15	1.22	0.35	0.40	-30 to +70	0.50 x 0.63 x 0.50	100	10	20
60A81	6.80-8.50	23.0	20.0	1.15	1.25	0.30	0.35	-30 to +70	0.75 x 0.88 x 0.50	100	15	40
60B59	7.10-8.50	26.0	20.0	1.10	1.25	0.25	0.30	-30 to +70	0.63 x 0.75 x 0.50	100	10	25
60A82	8.00-10.00	26.0	20.0	1.10	1.25	0.30	0.35	-30 to +70	0.75 x 0.88 x 0.50	100	15	40
60D157	9.00-11.00	28.0	23.0	1.08	1.15	0.30	0.40	-30 to +70	0.50 x 0.63 x 0.50	100	10	20
60D218	10.40-11.70	26.0	21.0	1.10	1.20	0.22	0.25	-30 to +70	0.50 x 0.63 x 0.50	100	10	20
60D149	10.70-12.75	24.0	21.0	1.14	1.20	0.25	0.30	-30 to +70	0.50 x 0.63 x 0.50	100	10	20
60D150	10.70-13.30	23.0	21.0	1.15	1.20	0.35	0.40	-30 to +70	0.50 x 0.63 x 0.50	100	10	20
60D168	11.70-12.20	28.0	23.0	1.08	1.15	0.18	0.20	-30 to +70	0.50 x 0.63 x 0.50	100	10	20
60D169	13.00-16.00	24.0	20.0	1.14	1.25	0.35	0.40	-30 to +70	0.50 x 0.63 x 0.50	50	5	20
60D123	14.00-14.50	30.0	26.0	1.06	1.15	0.25	0.30	-30 to +70	0.50 x 0.63 x 0.50	50	5	20
60D219	15.00-18.00	23.0	20.0	1.15	1.25	0.35	0.40	-30 to +70	0.50 x 0.63 x 0.50	50	5	20
60D172	17.50-19.70	23.0	20.0	1.15	1.22	0.40	0.50	-30 to +70	0.50 x 0.63 x 0.50	50	5	20
60D165	17.90-21.20	23.0	20.0	1.15	1.30	0.40	0.50	-30 to +70	0.50 x 0.63 x 0.50	50	5	20
60D173	21.20-23.60	23.0	20.0	1.15	1.22	0.40	0.50	-30 to +70	0.50 x 0.63 x 0.50	50	5	20
60D220	23.00-26.50	23.0	20.0	1.15	1.25	0.40	0.50	-30 to +70	0.50 x 0.63 x 0.50	50	5	20

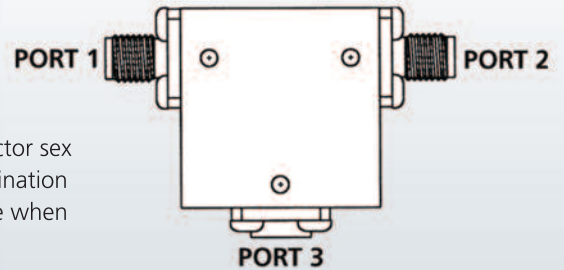
NOTE: Heat sink temperature must not exceed the maximum operating temperature specified.

COAXIAL ISOLATORS/CIRCULATORS



Standard coaxial connectors are SMA or Type N, depending on package size. Connectors may be captivated or removable, male or female, according to application.

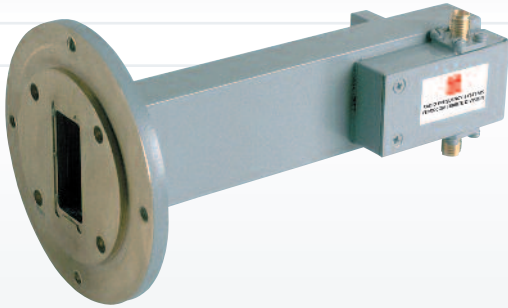
Please specify connector type (SMA, Type N, Special), connector sex (Female, Male) and connector/termination configuration using the below table when placing an order.



Connector Option Table

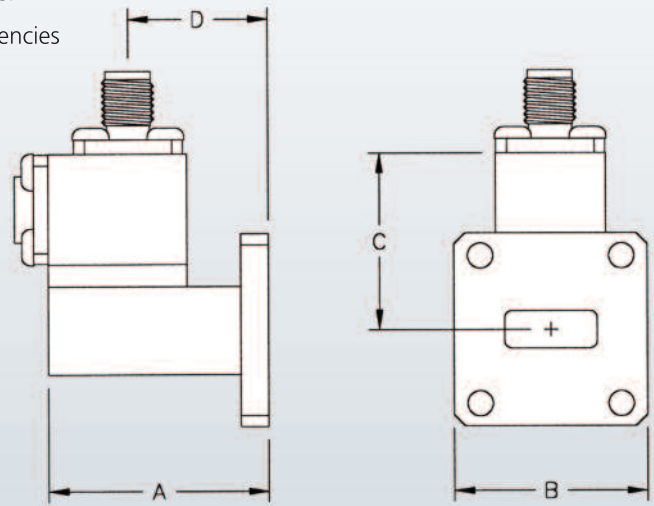
Port 1	Port 2	Port 3	SMA Type Suffix Code	"N" Suffix Code
Female	Female	Termination	-01	-11
Termination	Female (In)	Female (Out)	-02	-12
Male	Female	Termination	-03	-13
Termination	Male (In)	Female (Out)	-04	-14
Female	Male	Termination	-05	-1
Termination	Female (In)	Male (Out)	-06	-16
Male	Male	Termination	-07	-17
Termination	Male (In)	Male (Out)	-08	-18
Female (In)	Termination	Female (Out)	-09	-19
Female (In)	Termination	Male (Out)	-10	-20
Termination	Male (Out)	Male (In)	-23	N/A
Female (Out)	Termination	Female (In)	-24	N/A
Female (Out)	Termination	Male (In)	-25	N/A
Male (Out)	Termination	Male (In)	-26	N/A
Male (Out)	Termination	Female (In)	-27	N/A
Male (In)	Termination	Male (Out)	-28	-21
Male (In)	Termination	Female (Out)	-29	-22
Female	Female	Female	-31	-41
Female	Female	Male	-32	-42
Female	Male	Male	-33	-43
Female	Male	Female	-34	-44
Male	Male	Male	-35	-45
Male	Male	Female	-36	-46
Male	Female	Female	-37	-47
Male	Female	Male	-38	-48
SMA Male (In)	Type N Female (Out)	Termination	-39	N/A
Type N Female (In)	SMA Male (Out)	Termination	-40	N/A
SMA Female (In)	Type N Female (Out)	Termination	-49	N/A
Type N Female (In)	SMA Female (Out)	Termination	-50	N/A
Type N Female (In)	Type N Male (Out)	SMA Female	-51	N/A
Type N Male (In)	SMA Male (Out)	Termination	-52	N/A
SMA Female (In)	Type N Male (Out)	Termination	-53	N/A
Termination	Male (Out)	Female (In)	-54	N/A
Type N Male (In)	SMA Female (Out)	Termination	-55	N/A
Termination	Female (Out)	Male (In)	-56	N/A

ISODAPTERS



An isodapter consists of a coaxial isolator or circulator and a waveguide transition. The unit has a combined mechanical structure generally smaller than a normal waveguide to coaxial adapter and provides good isolation between input and output ports. Different waveguide types and connector interfaces are available depending on the operating frequency and design availability

- Isolator load rating 10 Watts. Circulator power rated at 2.0:1 mismatch.
- Custom configurations available including various connector types and multiport options.
- Additional frequencies available.



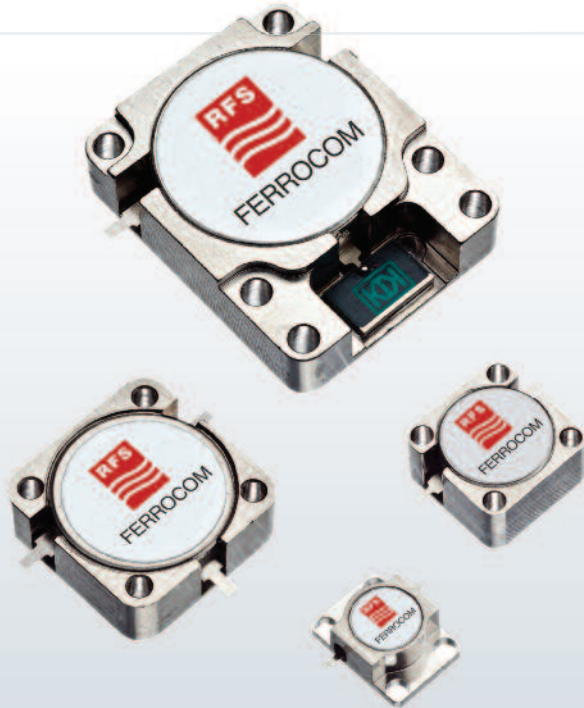
Product Specifications

Model Number	Frequency, GHz	Waveguide Type	Mating Flange	Isolation		VSWR		Insertion Loss		Operating Temp.	Dimensions (A x B x C x D), in	Power, W		Weight, G
				Typ, dB	Min, dB	Typ	Max	Typ, dB	Max, dB			Peak	Avg	
4701	4.40-5.00	WR187	CMR187	23	20	1.15	1.25	0.3	0.35	-30 to +70	2.37 x 2.78 x 2 x 1.25	100	25	250
6208	5.85-6.50	WR137	CMR137	23	20	1.15	1.25	0.3	0.35	-30 to +70	1.56 x 2.28 x 1.44 x 0.94	100	25	110
6209	5.90-7.125	WR137	CMR137	23	20	1.15	1.25	0.25	0.3	-30 to +70	1.56 x 2.28 x 1.44 x 0.94	100	25	110
6210	6.40-7.125	WR137	CMR137	23	20	1.15	1.25	0.25	0.3	-30 to +70	1.56 x 2.28 x 1.44 x 0.94	100	25	110
6199	7.10-7.75	WR137	CMR137	23	20	1.15	1.25	0.3	0.4	-30 to +70	1.56 x 2.28 x 1.44 x 0.94	100	25	110
6206	7.10-8.30	WR137	CMR137	23	20	1.15	1.25	0.4	0.5	-30 to +70	1.56 x 2.28 x 1.44 x 0.94	100	25	110
7502	7.10-8.50	WR112	UG138/U	23	20	1.15	1.25	0.3	0.4	-30 to +70	1.88 x 1.88 x 1.19 x 1.25	100	25	110
7524	7.10-7.80	WR112	UG138/U	23	20	1.15	1.25	0.3	0.35	-30 to +70	1.88 x 1.88 x 1.19 x 1.25	100	25	110
7525	7.70-8.50	WR112	UG138/U	23	20	1.15	1.25	0.3	0.35	-30 to +70	1.88 x 1.88 x 1.19 x 1.25	100	25	110
9052	8.20-12.40	WR90	UG135/U	23	20	1.15	1.25	0.25	0.3	-30 to +70	1.38 x 1.63 x 1 x 1.02	100	25	100
9055	8.40-9.70	WR90	UG135/U	23	20	1.15	1.22	0.25	0.3	-30 to +70	1.38 x 1.63 x 1 x 1.02	100	25	100
1130	10.70-11.70	WR75	WR75	23	20	1.15	1.22	0.3	0.35	-30 to +70	1.19 x 1.45 x 1 x 0.56	100	25	80
1274	10.70-13.25	WR75	WR75	21	19	1.15	1.25	0.3	0.4	-30 to +70	1.19 x 1.45 x 1 x 0.56	100	25	80
1123	12.20-13.20	WR75	WR75	23	20	1.15	1.22	0.3	0.35	-30 to +70	1.19 x 1.45 x 1 x 0.56	100	25	80
1573	12.50-15.50	WR62	UG1665/U	23	20	1.15	1.25	0.3	0.4	-30 to +70	1.31 x 1.31 x 1.1 x 0.8	100	25	75
1572	13.30-14.00	WR62	UG1665/U	23	20	1.08	1.15	0.3	0.4	-30 to +70	1.52 x 1.31 x 1.07 x 1.13	100	25	75
1574	14.00-14.50	WR62	UG1665/U	26	23	1.08	1.15	0.3	0.4	-30 to +70	1.52 x 1.31 x 1.07 x 1.13	100	25	75
1872	17.70-19.70	WR42	UG597/U	23	20	1.15	1.22	0.4	0.5	-30 to +70	1.19 x 0.88 x 0.75 x 0.82	100	25	75
2279	19.70-20.70	WR42	UG597/U	23	20	1.15	1.22	0.4	0.5	-30 to +70	1.19 x 0.88 x 0.75 x 0.82	100	25	75
2278	21.20-23.60	WR42	UG597/U	23	20	1.15	1.22	0.4	0.5	-30 to +70	1.19 x 0.88 x 0.75 x 0.82	100	25	75

NOTE 1: Heat sink temperature must not exceed the maximum operating temperature specified.

NOTE 2: Type of connectors, connector/termination configuration and port designation (Input, Output) must be specified when placing an order.

R CLASS DROP-IN ISOLATORS/CIRCULATORS



This is the most commonly used isolator and circulator on applications operating from 1 GHz to 30 GHz. These devices offer excellent electrical performance with low insertion loss, low inter-modulation and temperature stability in addition to rugged mechanical package featuring a machined housing. Easy integration and adaptability to manufacturing solder reflow process are key attributes of these versatile devices.

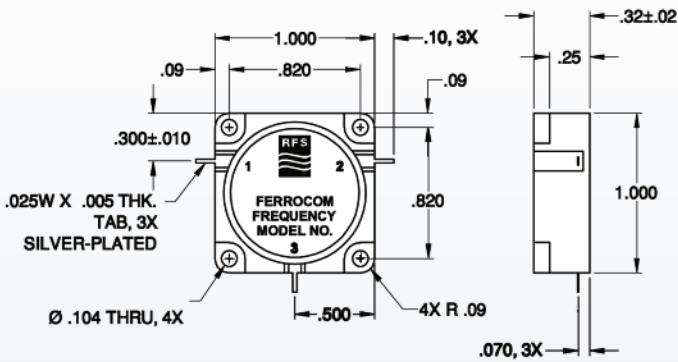
- Custom designs available.
- Superior IMD performance available.
- Excellent phase characteristics available.
- Circulator power rated into 2.0:1 mismatch.

Product Specifications

Model Number	Frequency, GHz	Isolation		VSWR		Insertion Loss		Operating Temperature, C	Power, Peak, W	Power, Avg, W	Weight, G	Outline Number	
Circulator	Isolator	Typ, dB	Min, dB	Typ	Max	Typ, dB	Max, dB						
3RC100	2RI100	.800-.900	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	500	50	50	1 & 2
3RC101	2RI101	.900-1.00	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	500	50	50	1 & 2
3RC102	2RI102	1.00-1.20	22.0	20.0	1.17	1.25	0.40	0.50	-30 to +70	500	50	50	1 & 2
3RC103	2RI103	1.20-1.40	22.0	20.0	1.17	1.25	0.40	0.50	-30 to +70	500	50	50	1 & 2
3RC104	2RI104	1.40-1.60	22.0	20.0	1.17	1.25	0.40	0.50	-30 to +70	500	50	50	1 & 2
3RC105	2RI105	1.60-1.80	22.0	20.0	1.17	1.25	0.40	0.50	-30 to +70	500	50	50	1 & 2
3RC106	2RI106	1.80-1.90	22.0	20.0	1.17	1.25	0.25	0.30	-30 to +70	500	50	20	3 & 4
3RC107	2RI107	1.90-2.00	22.0	20.0	1.17	1.25	0.25	0.30	-30 to +70	500	50	20	3 & 4
3RC108	2RI108	2.00-2.10	22.0	20.0	1.17	1.25	0.25	0.30	-30 to +70	250	25	20	3 & 4
3RC109	2RI109	2.10-2.30	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	250	25	20	3 & 4
3RC110	2RI110	2.30-2.50	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	250	25	20	3 & 4
3RC111	2RI111	2.50-2.70	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	100	10	20	3 & 4
3RC112	2RI112	2.70-2.90	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	100	10	20	3 & 4
3RC113	2RI113	3.40-4.20	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	100	10	20	3 & 4
3RC114	2RI114	4.20-4.40	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	100	10	6.5	5 & 6
3RC115	2RI115	4.40-5.00	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	100	10	6.5	5 & 6
3RC116	2RI116	5.40-5.90	22.0	20.0	1.17	1.25	0.30	0.40	-30 to +70	100	10	6.5	5 & 6
3RC117	2RI117	5.80-6.50	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	100	10	6.5	5 & 6
3RC118	2RI118	6.40-7.20	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	50	10	6.5	5 & 6
3RC119	2RI119	7.80-8.50	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	50	10	6.5	5 & 6
-	2RI120	9.00-10.00	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	25	2	5.0	7
-	2RI121	10.00-11.00	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	25	2	3.5	8
-	2RI122	10.95-12.75	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	25	2	3.5	8
-	2RI123	14.00-14.50	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	25	2	3.5	8
-	2RI124	14.50-15.50	22.0	20.0	1.17	1.25	0.35	0.40	-30 to +70	25	2	3.5	8
-	2RI125	17.70-19.70	22.0	20.0	1.17	1.25	0.50	0.60	-30 to +70	25	2	3.5	8

NOTE: Heat sink temperature must not exceed the maximum operating temperature specified.

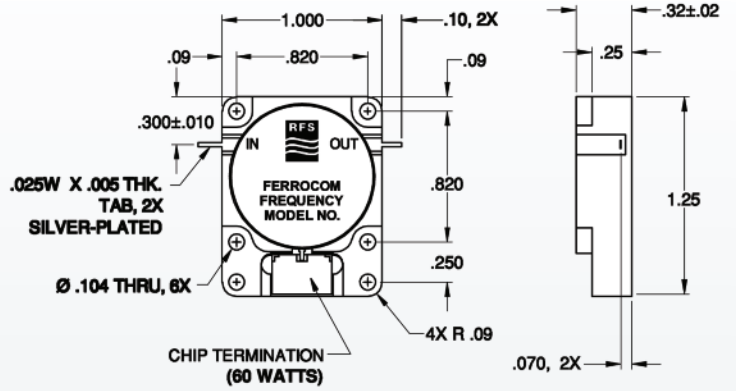
R CLASS DROP-IN ISOLATORS/CIRCULATORS



Clockwise Circulation

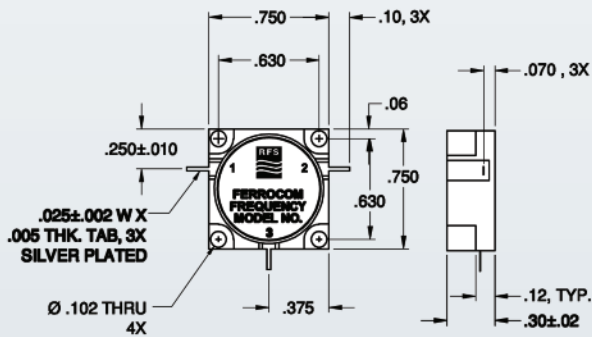
CIRCULATOR

OUTLINE 1



ISOLATOR

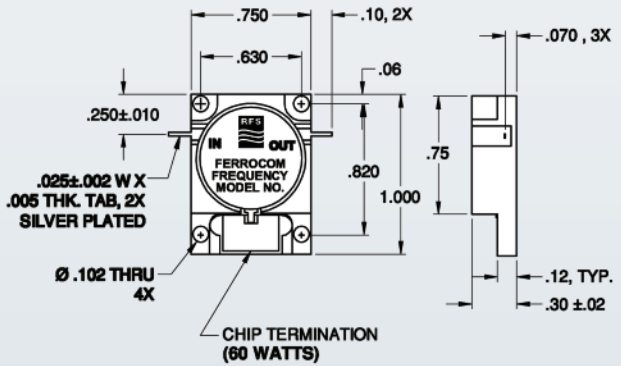
OUTLINE 2



Clockwise Circulation

CIRCULATOR

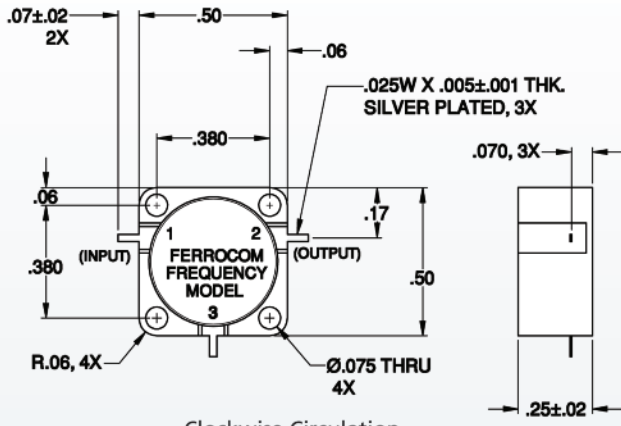
OUTLINE 3



ISOLATOR

OUTLINE 4

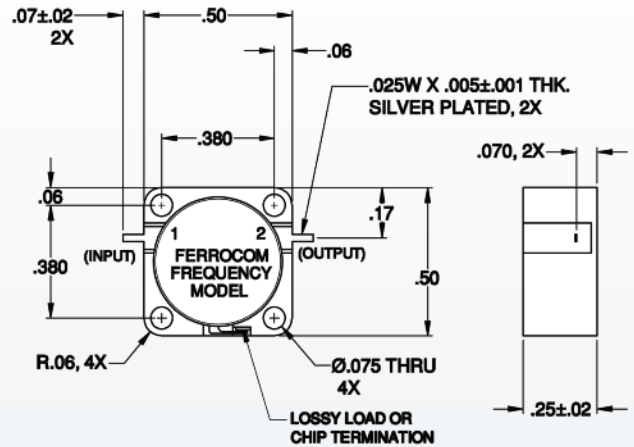
R CLASS DROP-IN ISOLATORS/CIRCULATORS



Clockwise Circulation

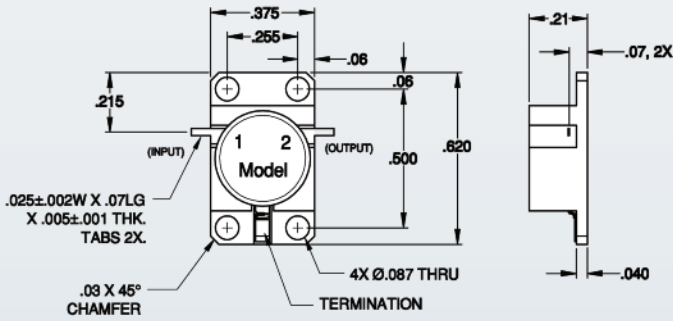
CIRCULATOR

OUTLINE 5



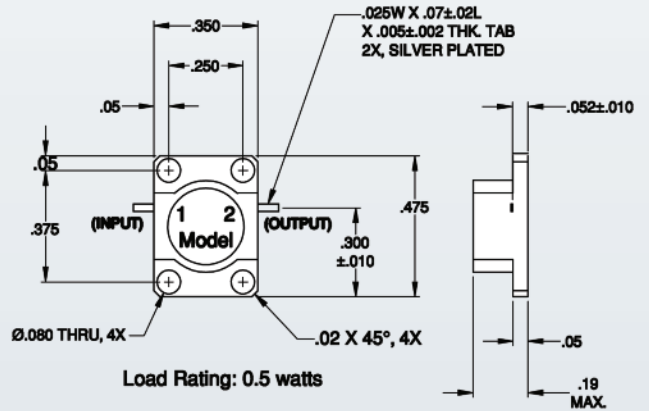
ISOLATOR

OUTLINE 6



Load Rating: 0.5 watts

OUTLINE 7



Load Rating: 0.5 watts

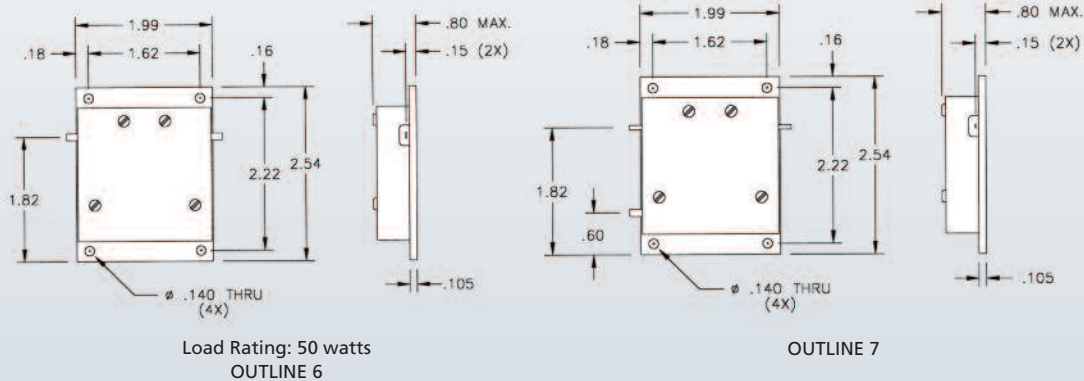
OUTLINE 8

S CLASS DROP-IN ISOLATORS/CIRCULATORS



Ideal for high power applications operating at low frequency from 80 MHz to 1 GHz, this type of isolator offers excellent electrical performance with low insertion loss, and attractive pricing. Using sheet metal and a stamping process, different shapes are formed which provide mechanical package sizes smaller than isolators utilizing a machined housing. A tab interface and available mounting holes make integration easy during assembly.

- Custom designs available.
- Superior IMD performance available.
- Excellent phase characteristics available.
- Circulator power rated into 2.0:1 mismatch.



Product Specifications

Model Number	Frequency, GHz		Isolation		VSWR		Insertion Loss		Operating Temperature, C	Power, Peak, W	Power, Avg, W	Weight, G	Outline	
	Circulator	Isolator	Typ, dB	Min, dB	Typ	Max	Typ, dB	Max, dB					Iso	Circ
3SC100	-	0.132-0.174	17.0	16.0	1.35	1.40	0.60	0.70	-10 to +60	200	100	150	-	7
3SC101	-	0.132-0.154	22.0	18.0	1.18	1.29	0.60	0.70	-30 to +80	250	150	150	-	7
3SC102	-	0.150-0.174	22.0	18.0	1.18	1.29	0.60	0.70	-30 to +80	250	150	150	-	7
3SC103	-	0.170-0.190	23.0	20.0	1.15	1.22	0.50	0.70	-30 to +80	250	150	150	-	7
3SC104	-	0.185-0.210	23.0	20.0	1.15	1.22	0.50	0.70	-30 to +80	250	150	150	-	7
3SC105	-	0.205-0.230	23.0	20.0	1.15	1.22	0.50	0.70	-30 to +80	250	150	150	-	7
3SC106	2SI106	0.225-0.255	23.0	20.0	1.15	1.22	0.50	0.70	-30 to +80	250	150	150	6	7
3SC107	2SI107	0.250-0.275	23.0	20.0	1.15	1.22	0.50	0.70	-30 to +80	250	150	150	6	7
3SC108	2SI108	0.270-0.290	26.0	23.0	1.10	1.15	0.30	0.40	-30 to +80	500	200	150	6	7
3SC109	2SI109	0.276-0.302	23.0	20.0	1.15	1.22	0.38	0.50	-30 to +80	500	200	150	6	7
3SC110	2SI110	0.300-0.340	23.0	20.0	1.15	1.22	0.35	0.45	-30 to +80	500	200	150	6	7
3SC111	2SI111	0.335-0.370	24.0	20.0	1.13	1.22	0.35	0.50	-30 to +80	500	200	150	6	7
3SC112	2SI112	0.350-0.405	24.0	20.0	1.13	1.25	0.35	0.50	-30 to +80	500	200	150	6	7
3SC113	2SI113	0.400-0.475	24.0	20.0	1.13	1.22	0.35	0.50	-30 to +80	500	200	150	6	7
3SC114	2SI114	0.470-0.570	24.0	20.0	1.13	1.22	0.35	0.40	-30 to +80	500	200	150	6	7
3SC115	2SI115	0.560-0.690	22.0	20.0	1.18	1.25	0.40	0.50	-30 to +70	500	200	150	6	7
3SC116	2SI116	0.670-0.806	22.0	20.0	1.18	1.25	0.40	0.50	-30 to +70	500	200	150	6	7
3SC117	2SI117	0.810-0.960	23.0	20.0	1.15	1.22	0.35	0.40	-30 to +70	500	200	150	6	7
3SC118	2SI118	0.850-0.960	25.0	20.0	1.12	1.22	0.35	0.40	-30 to +80	500	200	150	6	7
3SC119	2SI119	0.900-1.000	25.0	20.0	1.12	1.22	0.35	0.40	-30 to +80	500	200	150	6	7

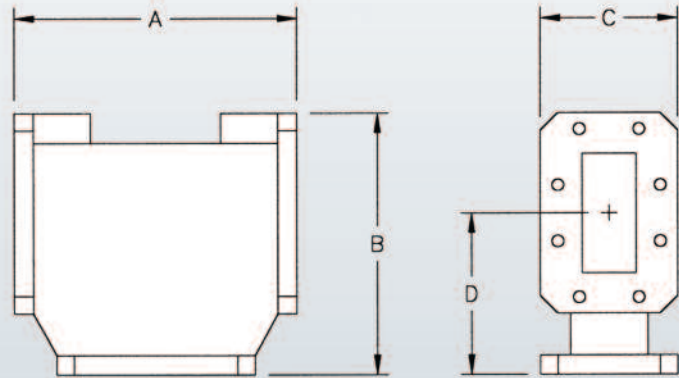
NOTE: Heat sink temperature must not exceed the maximum operating temperature specified.

WAVEGUIDE ISOLATORS/CIRCULATORS



These types of units exhibit extremely low insertion loss and operate over a wide range of frequency from 4 GHz to 40 GHz. Mechanical package sizes and waveguide types vary depending on the operating frequency. Special sealing is available on units for applications where RFI (radio frequency interference) leakage and humidity are critical.

- Isolator load rating 2.0 watts to 14.5 GHz, 1.0 watts above.
- Circulator power rated into 2.0:1 mismatch.
- Specify port designated for termination on Isolator application.
- Additional frequencies available. Custom configurations available.



Product Specifications

Model Number	Frequency, GHz	Waveguide Type	Mating Flange	Isolation		VSWR		Insertion Loss		Operating Temp.	Dimensions (A x B x C x D), in	Power, W		Weight, G
				Typ, dB	Min, dB	Typ	Max	Typ, dB	Max, dB			Peak	Avg	
400	3.70-4.20	WR229	CMR229	29	26	1.07	1.08	0.1	0.15	-30 to +70	4.86 x 4.86 x 2 x 3.16	1000	50	800
450	4.40-5.00	WR187	CMR187	29	26	1.07	1.08	0.1	0.15	-30 to +70	4 x 4 x 1.78 x 2.63	500	25	600
672	5.90-6.40	WR137	CMR137	32	28	1.05	1.08	0.1	0.1	-30 to +70	3.25 x 3 x 1.58 x 1.86	500	25	250
673	6.40-7.125	WR137	CMR137	32	28	1.05	1.08	0.1	0.1	-30 to +70	3.25 x 3 x 1.58 x 1.86	500	25	250
674	5.90-7.125	WR137	CMR137	32	28	1.05	1.08	0.15	0.2	-30 to +70	3.25 x 3 x 1.58 x 1.86	500	25	250
745	7.10-8.50	WR112	UG138/U	30	26	1.06	1.1	0.15	0.2	-30 to +70	2.63 x 2.5 x 1.88 x 1.52	500	25	300
746	7.10-7.80	WR112	UG138/U	32	28	1.05	1.08	0.15	0.2	-30 to +70	2.63 x 2.5 x 1.88 x 1.52	500	25	300
747	7.80-8.50	WR112	UG138/U	32	28	1.05	1.08	0.15	0.25	-30 to +70	2.63 x 2.5 x 1.88 x 1.52	500	25	300
1015	10.00-11.00	WR90	UG135/U	26	20	1.1	1.22	0.18	0.3	-30 to +70	2.25 x 2.25 x 1.63 x 1.44	500	10	125
1016	10.70-11.70	WR90	UG135/U	26	20	1.1	1.22	0.18	0.3	-30 to +70	2.25 x 2.25 x 1.63 x 1.44	500	10	125
1200	10.70-13.25	WR75	WR75	30	26	1.06	1.1	0.18	0.3	-30 to +70	1.75 x 1.75 x 1.5 x 0.97	500	10	140
1221	10.70-11.70	WR75	WR75	32	28	1.05	1.08	0.18	0.3	-30 to +70	1.75 x 1.75 x 1.5 x 0.97	500	10	140
1218	10.95-12.75	WR75	WR75	30	26	1.06	1.1	0.18	0.3	-30 to +70	1.75 x 1.75 x 1.5 x 0.97	500	10	140
1500	12.40-18.00	WR62	UG1665/U	19	18	1.25	1.3	0.18	0.3	-30 to +70	1.5 x 1.5 x 1.32 x 0.85	500	10	200
1509	14.00-16.00	WR62	UG1665/U	23	20	1.15	1.22	0.15	0.2	-30 to +70	1.5 x 1.5 x 1.32 x 0.85	500	10	200
1800	17.70-19.70	WR42	UG597/U	23	20	1.15	1.22	0.18	0.3	-30 to +70	1 x 1.15 x 0.88 x 0.71	250	5	50
2200	21.20-23.60	WR42	UG597/U	26	23	1.1	1.15	0.18	0.3	-30 to +70	1 x 1.15 x 0.88 x 0.71	250	5	50
2213	17.70-23.60	WR42	UG597/U	22	19	1.17	1.25	0.18	0.3	-30 to +70	1 x 1.15 x 0.88 x 0.71	250	5	50
2025	18.00-22.50	WR42	UG597/U	21	19	1.2	1.25	0.18	0.3	-30 to +70	1 x 1.15 x 0.88 x 0.71	250	5	40
2964	25.00-28.00	WR28	UG599/U	24	21	1.13	1.2	0.15	0.2	-30 to +70	0.9 x 0.9 x 0.9 x 0.52	250	5	40
2965	28.00-30.00	WR28	UG599/U	24	21	1.13	1.2	0.15	0.2	-30 to +70	0.9 x 0.9 x 0.9 x 0.52	250	5	40
3500	33.00-37.00	WR28	UG599/U	24	21	1.13	1.2	0.18	0.3	-30 to +70	0.9 x 0.9 x 0.9 x 0.52	250	5	40
3851	37.00-40.00	WR28	UG599/U	23	20	1.15	1.25	0.18	0.3	-30 to +70	0.9 x 0.9 x 0.9 x 0.52	250	5	40

NOTE: Heat sink temperature must not exceed the maximum operating temperature specified.

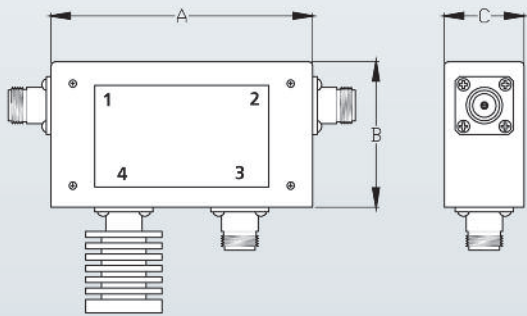
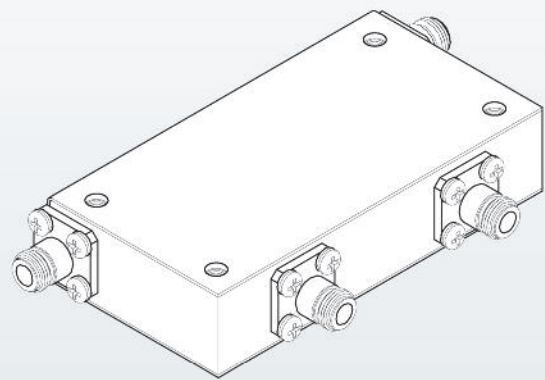
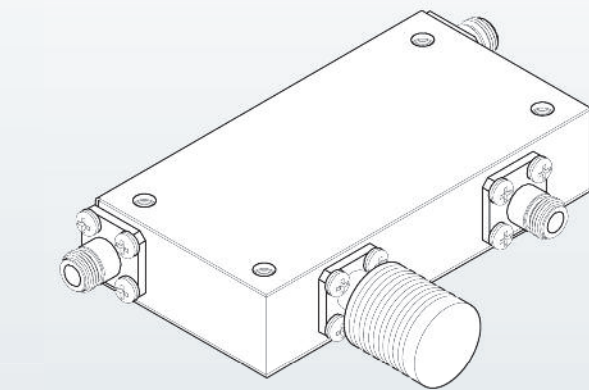
4 PORT COAXIAL ISOLATORS/CIRCULATORS



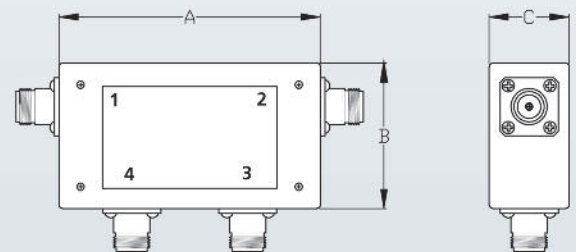
These isolators and circulators provide good signal linearity to the system with high isolation performance, a critical specification for having low reverse or backward inter-modulation. High power handling capability and low insertion loss make these devices attractive for public safety and two-way radio applications.

Specifically designed for public safety applications

- Circulator power rated into 2.0:1 mismatch
- Additional frequencies available
- Custom configuration available including various connector types



ISOLATOR



CIRCULATOR

PORT 3 AND 4 CAN BE TERMINATED WITH A LOAD AS SHOWN
STANDARD LOAD IS 30W (SHOWN)

Product Specifications

Model Number	Frequency, GHz	Return Loss, Min., dB	Insertion Loss, Max., dB	Isolation, Min., dB	Operating Temperature, degrees C	Input Power, W		Dimensions, in		
						PK	AVG	A	B	C
B187	0.137-0.148	20.0	1.50	40.0	-30 to +85	2K	350	7.00	3.75	1.50
B188	0.142-0.152	20.0	1.50	40.0	-30 to +85	2K	350	7.00	3.75	1.50
B189	0.152-0.167	20.0	1.20	40.0	-30 to +85	2K	350	7.00	3.75	1.50
B190	0.162-0.175	20.0	1.20	40.0	-30 to +85	2K	350	7.00	3.75	1.50
B183	0.380-0.433	19.0	1.00	40.0	-30 to +85	2K	175	4.00	2.30	1.18
B184	0.403-0.470	19.0	1.00	45.0	-30 to +85	2K	175	5.00	2.90	1.02
B185	0.806-0.869	22.0	.60	45.0	-30 to +85	2K	175	4.50	2.50	1.38
B186	0.869-0.960	22.0	.60	45.0	-30 to +85	2K	175	4.50	2.50	1.38

NOTE: Heat sink temperature must not exceed the maximum operating temperature of +85 C.

ORDER INFORMATION



Frequency Range

Standard products are offered in the frequency range of 80 MHz to 40 GHz. A sampling of available units is listed on the previous pages.

Power

Power handling capabilities are as stated on preceding pages. Many applications have been developed with peak power levels up to 2 kW and CW levels up to 500 watts.

Connectors

Standard coaxial connectors are SMA or Type N, depending on package size. Connectors may be captivated or removable, male or female, according to application. Other connector options are available.

Magnetic Shielding and RFI Shielding

All standard devices are magnetically shielded and will maintain their specified performance when operated within a distance equal to its own thickness from a steel plate.

All standard devices are RFI shielded with a typical rating of 40 dB below signal level. Improved RFI shielding up to 70 dB is available upon request. For RFI requirements in excess of 70 dB, please contact our sales department.

Quality Assurance

All RFS Ferrocom products are designed and manufactured in accordance to MIL-I-45208A. Our facility is registered to the ISO-9001/2015 quality standard.

All devices are individually tested to assure compliance with guaranteed electrical and mechanical specifications. Each shipment is accompanied by a certificate of compliance. Complete test data is available upon request.



Specifications

In keeping with our policy of continuous product improvement, RFS Ferrocom reserves the right to change specifications without notice.

Custom Engineering

Custom design capabilities are available to provide a wide range of solutions to your ferrite requirements. Please contact our sales department with your specifications today. This includes custom packaging, custom connector or cable configurations, unique electrical requirements, or enhanced performance specifications.

Price and Delivery

Price and delivery information may be obtained from your nearest RFS Ferrocom sales representative or directly from the factory sales department at:



RADIO FREQUENCY SYSTEMS
Ferrocom Ferrite Division

RFS Ferrocom Ferrite Products
6276 San Ignacio Avenue, Suite E
San Jose, CA 95119
Phone: 408.281.6100
Fax: 408.281.4000
E-mail: info@ferrocom.com

Warranty

RFS Ferrocom products are warranted to the original purchaser to be free of workmanship or material defects for a period of three years from the date of shipment. Warranty void if device is disassembled or misused. RFS Ferrocom obligation is limited to repair or replacement.

REQUEST FOR QUOTATION ORDER GUIDE



CUSTOMER INFORMATION

This form is also available on-line at www.rfsworld.com

Your Name:

Company:

Address:

City: State:

Country: Postal Code/Zip:

Phone:

Fax:

E-mail:

PRODUCT INFORMATION

Request Date: Delivery Date:

ISOLATOR CIRCULATOR ISODAPTER WAVEGUIDE
 COAXIAL DROP-IN

Model #: Customer SCD#:

Quantities: 1st Choice 2nd Choice 3rd Choice

Frequency: GHz Peak Power: Watts
 Isolation: dB Min. Termination Rating: Watts
 Return Loss: dB Min. Operating Temp.: °C
 Insertion Loss: dB Max. Storage Temp.: °C
 Avg. Power: Watts Shielding: dBc

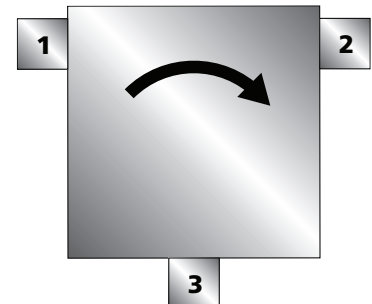
CONNECTOR TYPE

	SMA	TYPE N	SPECIAL	TAB	LOAD	N/A
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Input Port 2:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Input Port 3:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

CONNECTOR GENDER

	FEMALE	MALE	TERMINATION	N/A
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Input Port 2:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Input Port 3:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Notes:





www.rfsworld.com

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Ferrocom Ferrite Division