



smiths
bringing technology to life

Company Overview

Channel Microwave, specializes in the design, engineering, and manufacturing of high-precision, passive microwave components. We believe and are committed to making our customer's job easier by offering the most cost effective, electronically superior products available in the market, in a timely manner.

Channel Microwave, a division of **Lorch Microwave**, is located in Camarillo, California. The company, founded in 1986 is now part of **Smiths Interconnect** a division of the **Smiths Group**.

Channel Microwave's core products, ranging from 80 MHz to 65 GHz, include isolators, circulators, terminations, filters and subsystems.

Channel Microwave's *military* and *space applications* include products used in radar and satellite communications. Government contractors turn to **Channel Microwave** when both high reliability and performance are required. New applications include medical, semiconductor processing and high power FM and HDTV transmitters.

COAXIAL PRODUCTS	2
Narrow-Band High-Performance Products	2
Standard Bandwidth Isolators and Circulators.....	2
Octave Bandwidth Isolators and Circulators	2
UHF/VHF Band Tunable Lumped Element.....	3
High Power Coaxial Circulator and Isolator.....	3
FLANGE MOUNT DROP-IN PRODUCTS	4
Flange Mount Drop-In	4
WAVEGUIDE PRODUCTS	5
Miniature Isolators	5
Standard Bandwidth Isolators and Circulator.....	5
Full Bandwidth Isolator and Circulators.....	5
Compact (Waveguide Junction) In-Line Iso-Adapters	6
High-Performance, Right-Angle Iso-Adapters	6
Waveguide to Coaxial Adapters.....	6
Precision Low Power Terminations.....	7
Compact Low Power Terminations.....	7
High Power Terminations	7
HIGH POWER PRODUCTS	8
Resonance Isolators—Full Band	8
Resonance Waveguide Isolators—High Power	8
High Power Junction Waveguide Circulator.....	8
Differential Phase Waveguide Isolator/Circulator.....	8
SPECIAL PRODUCTS	9
Built-In (Internal) Isolators.....	9
Hi-Rel.....	9
Passive Assemblies	9
Broadcast Products.....	9
Filters.....	9
HOW TO ORDER, MAP	10
IN HOUSE CAPABILITIES, PROGRAMS	11

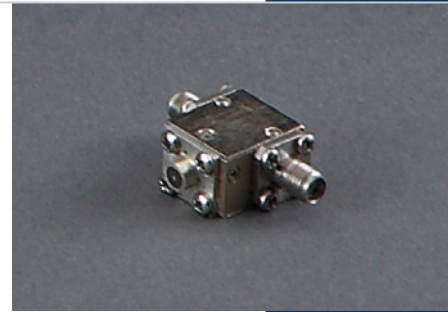
NARROW-BAND HIGH-PERFORMANCE PRODUCTS

Model Number	Freq. (GHz)	Isolation (dB MIN)	INS. LOSS (DB MAX)	VSWR (MAX)	PWR HNDLS (WATTS CW)	Size, Inches (W x L x H)
L120 (*)	1.43-1.53	23	0.20	1.15:1	50	1.25 1.25 0.63
L121 (*)	1.65-1.75	25	0.20	1.50:1	25	1.10 1.10 0.63
S120 (*)	2.20-2.30	26	0.10	1.10:1	25	1.50 1.75 1.00
S121 (*)	2.20-2.40	25	0.20	1.12:1	50	0.88 0.90 0.60
S122 (*)	2.50-2.70	25	0.15	1.15:1	25	1.10 1.10 0.63
S123 (*)	2.70-2.90	25	0.15	1.15:1	25	1.10 1.10 0.63
S124 (*)	3.10-3.50	23	0.15	1.15:1	25	1.10 1.10 0.63
SC120 (*)	3.70-4.20	23	0.15	1.15:1	25	1.00 1.00 0.63
C120 (*)	4.40-5.00	25	0.15	1.12:1	35	1.00 1.00 0.63
C121 (*)	4.90-5.40	25	0.15	1.12:1	35	1.00 1.00 0.63
C122 (*)	5.40-5.90	25	0.15	1.12:1	35	1.00 1.00 0.63
C123 (*)	5.92-6.42	25	0.15	1.12:1	35	1.00 1.00 0.63
C124 (*)	7.25-7.75	25	0.15	1.12:1	35	0.50 0.63 0.50
CX120 (*)	7.90-8.40	25	0.15	1.12:1	25	0.50 0.63 0.50
X120 (*)	9.20-10.0	25	0.15	1.12:1	25	0.50 0.63 0.50
X121 (*)	10.9-11.4	25	0.15	1.12:1	25	0.50 0.63 0.50
X122 (*)	11.7-12.2	26	0.20	1.10:1	25	0.50 0.63 0.50
K120 (*)	12.2-12.7	26	0.20	1.10:1	25	0.50 0.63 0.50
K121 (*)	14.0-14.5	23	0.25	1.15:1	25	0.50 0.63 0.50
K122 (*)	15.0-16.0	23	0.30	1.15:1	25	0.50 0.63 0.50
K123 (*)	16.0-17.0	23	0.30	1.15:1	25	0.50 0.63 0.50
K124 (*)	17.7-18.0	23	0.30	1.15:1	25	0.50 0.63 0.50
K125 (*)	18.0-20.0	20	0.45	1.25:1	25	0.37 0.71 0.50
K126 (*)	20.0-22.0	20	0.45	1.25:1	25	0.37 0.71 0.50
R120 (*)	29.0-31.0	20	0.50	1.25:1	20	0.37 0.71 0.50

(*) Add unit designation "C" for circulator (i.e. L120 C) or "I" for isolator (i.e. L120 I).

Standard connectors are SMA female, termination rating : 2 watts typ. R120 has K connectors.

Higher termination available upon request.

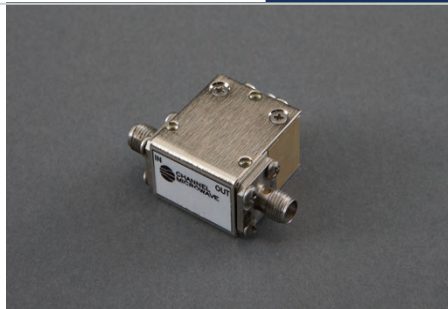


STANDARD BANDWIDTH ISOLATORS AND CIRCULATORS

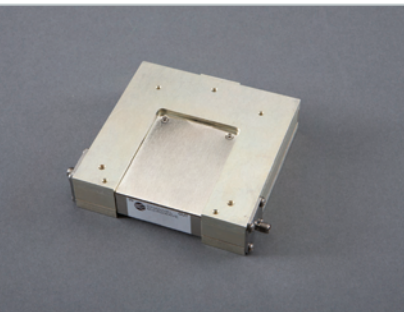
Model Number	Frequency (GHz)	Isolation (dB MIN)	INS. LOSS (DB MAX)	VSWR (MAX)	PWR HNDLS (WATTS CW)	Size, Inches (W x L x H)
V320 (*)	.290-.375	18	0.5	1.28:1	150	2.38 2.43 1.0
V321 (*)	.375-.500	18	0.5	1.28:1	125	2.00 2.00 1.0
U320 (*)	.500-.650	20	0.5	1.25:1	125	1.50 1.63 .75
U321 (*)	.650-.850	20	0.5	1.25:1	100	1.50 1.63 .75
UL320 (*)	.850-1.10	20	0.5	1.25:1	75	1.50 1.75 1.0
UL321 (*)	.960-1.22	20	0.5	1.25:1	75	1.25 1.25 .63
L320 (*)	1.25-1.60	20	0.5	1.25:1	50	1.25 1.25 .63
LS320 (*)	1.70-2.40	20	0.4	1.25:1	50	1.25 1.38 .69
LS321 (*)	1.90-2.50	20	0.3	1.25:1	50	1.38 1.43 .63
S320 (*)	2.50-3.50	20	0.3	1.25:1	50	1.12 1.12 .63
SC320 (*)	3.50-4.50	20	0.3	1.25:1	50	1.12 1.12 .63
C320 (*)	4.70-6.00	20	0.3	1.25:1	35	0.75 0.75 .50
C321 (*)	5.20-6.80	20	0.3	1.25:1	35	0.75 0.75 .50
CX320 (*)	7.00-11.0	20	0.4	1.25:1	25	0.75 0.87 .50
X320 (*)	8.00-12.0	20	0.3	1.25:1	25	0.75 0.87 .50
K320 (*)	12.0-18.0	17	0.6	1.35:1	25	0.63 0.80 .54

(*) Add unit designation "C" for circulator (i.e. L120 C) or "I" for isolator (i.e. L120 I).

Standard connectors are SMA female, termination rating : 2 watts typ. R120 has K connectors.



OCTAVE BANDWIDTH ISOLATORS AND CIRCULATORS

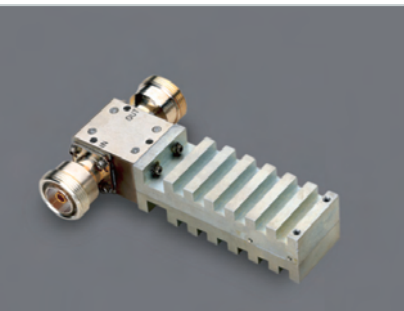


Model Number	Freq. (GHz)	Isolation (dB MIN)	INS. LOSS (DB MAX)	VSWR (MAX)	PWR HNDLS (WATTS CW)	Size, Inches (W x L x H)
V620 (*)	.225-.400	17	0.8	1.35:1	100	2.56 2.50 1.14
UL620 (*)	.500-1.00	16	1.0	1.40:1	200	5.88 5.66 1.10
UL621 (*)	.550-1.10	17	0.7	1.35:1	200	5.37 5.25 1.10
UL622 (*)	.700-1.40	17	0.7	1.35:1	100	4.50 4.50 1.00
UL623 (*)	.800-1.60	18	0.6	1.28:1	100	4.00 4.00 1.00
UL624 (*)	.800-2.00	13	0.95	1.58:1	50	3.00 2.98 1.08
L620 (*)	1.00-2.00	18	0.5	1.30:1	100	3.00 2.98 1.00
LS620 (*)	1.50-3.00	18	0.5	1.30:1	75	2.32 2.37 0.75
S620 (*)	2.00-4.00	20	0.4	1.25:1	75	1.75 1.75 0.63
SC620 (*)	2.60-5.20	20	0.4	1.25:1	75	1.31 1.38 0.63
SC621 (*)	3.00-6.00	20	0.4	1.25:1	75	1.62 1.72 0.69
SC622 (*)	3.50-7.00	20	0.4	1.25:1	50	1.38 1.47 0.63
SC623 (*)	2.00-6.00	14	0.8	1.50:1	35	1.62 1.79 0.69
C620 (*)	4.00-8.00	20	0.4	1.25:1	50	0.88 1.03 0.63
CX620 (*)	5.00-10.0	20	0.4	1.25:1	50	1.00 1.12 0.63
CX621 (*)	7.00-14.0	18	0.5	1.30:1	35	0.75 0.88 0.50
XK620 (*)	8.00-16.0	17	0.7	1.35:1	35	0.63 0.80 0.54
XK622 (*)	8.00-18.0	16	0.8	1.45:1	25	0.63 0.80 0.54

*Add unit designation "C" for circulator (i.e. L620 C) or "I" for isolator (i.e. L620 I).

Note: Standard connectors are SMA female, termination rating: 2 watts typ.

HIGH POWER COAXIAL ISOLATOR /CIRCULATOR



Model Number	Freq. (GHz)	Specs	PWR. WATTS		Size Inches		
			PK	Avg.			
VH320 (*)	.400-.450	23/0.2/1.15:1	70K	1K	2.75	2.87	1.00
VH321 (*)	.400-.500	20/0.3/1.20:1	70K	1K	2.75	2.87	1.00
VH322 (*)	.425-.550	20/0.4/1.20:1	70K	1K	2.75	2.87	1.00
UH320 (*)	.880-.920	25/0.2/1.12:1	70K	1K	1.88	2.12	1.00
ULH320 (*)	.960-1.22	22/0.3/1.17:1	40K	750	1.50	1.63	1.00
LH320 (*)	1.03-1.09	25/0.2/1.21:1	40K	500	1.50	1.63	1.00
LH321 (*)	1.30-1.50	23/0.3/1.15:1	40K	500	1.25	1.38	1.00
SH320 (*)	2.90-3.10	23/0.3/1.15:1	10K	400	1.75	1.88	1.00
CH320 (*)	5.92-6.42	23/0.2/1.15:1	10K	400	1.00	1.12	1.00
CX320 (*)	7.90-8.40	23/0.2 1.15"1	5K	400	1.00	1.12	1.00

*Add unit designation "C" for circulator "I" for isolator. If ordering the isolator product, please specify reverse power (peak and avg.)

1. All units come standard with type N female connectors. Contact factory with other requests.

UHF/VHF BAND TUNABLE LUMPED ELEMENT

Model Number	Frequency MHZ	Specs ISO/VSWR/LOSS (FC+/-1MHz)	Specs (FC +/- 2%)	Size (W x L x H)
FVT50 (*)	88.0-100	25/1.15/0.5	18/1.35/0.6	3.0 3.0 1.0
FVT51 (*)	100-115	25/1.15/0.5	18/1.35/0.6	3.0 3.0 1.0
FVT52 (*)	115-130	30/1.10/0.4	20/1.10/0.5	2.5 2.5 1.0
FVT53 (*)	130-150	30/1.10/0.4	20/1.10/0.5	2.5 2.5 1.0
FVT54 (*)	150-175	30/1.10/0.3	20/1.10/0.4	2.5 2.5 1.0
FVT55 (*)	175-205	30/1.10/0.3	20/1.10/0.4	2.0 2.0 1.0
FVT56 (*)	205-230	30/1.10/0.3	20/1.10/0.4	2.0 2.0 1.0
FVT57 (*)	230-265	30/1.10/0.3	20/1.10/0.4	2.0 2.0 1.0
FVT58 (*)	265-300	30/1.10/0.3	20/1.10/0.4	2.0 2.0 1.0

*Add unit designation "C" for circulator "I" for isolator.

- Center frequency (Fc) to be selected by customer.
- Power handling: 50 W CW, 200 W Peak (circulator only)
- Standard connectors are SMA Female.
- Termination rating: 2 watts typ.

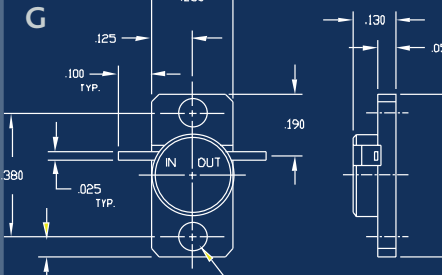
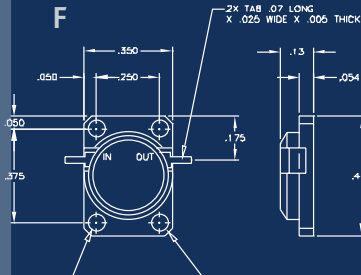
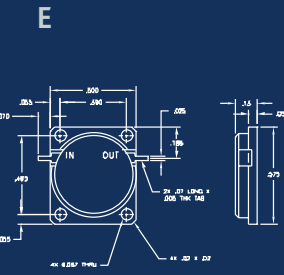
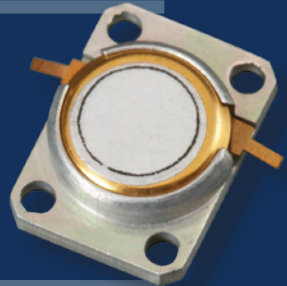
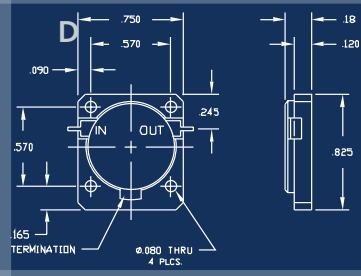
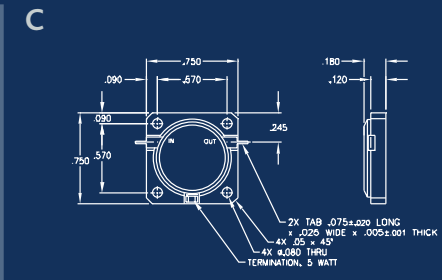
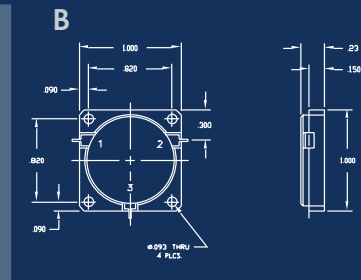
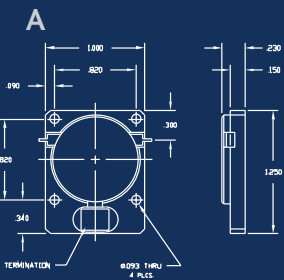
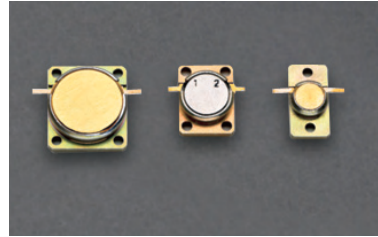
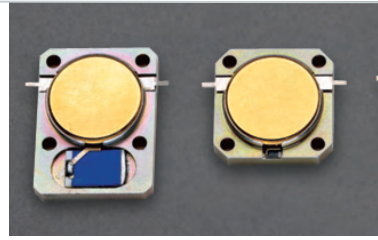
3

COAXIAL PRODUCTS

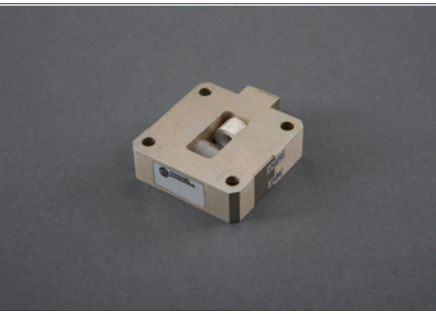
FLANGE MOUNT UNITS

Frequency Range GHz	Isolator Model No	Circulator Model No	ISO (dB MIN)	INS LOSS (dB MAX)	VSWR MAX	Avg. Power W	Outline
0.86-0.90	EU880I	EU880C	20	0.5	1.22:1	65	*A/B
0.86-0.90	EU881I	EU881C	20	0.5	1.22:1	5	B
0.96-1.20	EL1080I	EL1080C	20	0.5	1.22:1	5	B
1.20-1.40	EL1300I	EL1300C	20	0.5	1.22:1	5	C
1.43-1.54	EL1490I	EL1490C	20	0.5	1.22:1	5	C
1.70-1.80	EL1750I	EL1750C	20	0.5	1.22:1	5	C
1.80-1.90	EL1850I	EL1850C	20	0.5	1.22:1	5	C
2.20-2.40	ES2300I	ES2300C	20	0.5	1.22:1	5	C
2.40-2.50	ES2450I	ES2450C	20	0.5	1.22:1	5	C
2.60-2.90	ES2750I	ES2750C	20	0.5	1.22:1	5	C
2.90-3.10	ES3000I	ES3000C	20	0.5	1.22:1	5	C
3.10-3.50	ES3300I	ES3300C	20	0.5	1.22:1	5	D
3.50-3.90	ES3700I	ES3700C	20	0.5	1.22:1	5	D
3.70-4.20	ES3950I	ES3950C	20	0.5	1.22:1	1	E
4.20-4.40	EC4300I	EC4300C	20	0.5	1.22:1	1	E
4.40-4.90	EC4650I	EC4650C	20	0.5	1.22:1	1	E
5.20-5.90	EC5500I	EC5500C	20	0.5	1.22:1	1	E
5.90-6.40	EC6150I	EC6150C	20	0.5	1.22:1	1	E
6.40-8.40	ECX7400I	ECX7400C	20	0.5	1.22:1	1	E
9.50-10.5	EX1000I	EX1000C	20	0.5	1.22:1	1	F
11.5-13.5	EM1250I	EM1250C	20	0.5	1.22:1	1	F
14.0-14.5	EK1425I	EK1425C	20	0.5	1.22:1	1	*G/F

*Isolator only. Outline (B, F) used for Circulator Model.
All specs are at -20°C to +85°C. Contact factory for termination ratings.



MINIATURE ISOLATOR



Model No (1)	Wave Guide	Band (GHz)	%Band Width	Isolation (MIN)	Insertion Loss(MAX)	VSWR (MAX)	Flange Type	Thickness Inches
SH1XX	WR112	7.05-10.0	1%	25	0.40	1.20:1	UG138/U	0.620
			2%	20	0.50	1.30:1		
SX1XX	WR90	8.20-12.4	1%	23	0.40	1.20:1	UG135/U	0.500
			2%	20	0.50	1.25:1		
SM1XX	WR75	10.0-15.0	1%	25	0.30	1.20:1	WR75	0.500
			2%	20	0.40	1.25:1		
SP1XX	WR62	12.4-18.0	1%	20	0.40	1.25:1	UG1665/U	0.500
			2%	18	0.40	1.30:1		
SK1XX	WR42	18.0-26.5	1%	18	0.40	1.30:1	UG597/U	0.500
			2%	17	0.50	1.35:1		

Additional Specifications:

Operating Temperature Range: 0° to 50 ° C Typical

RF Power: Forward — 1 KW Peak, 10 Watts Forward — 1 Watt Reverse

1. A unique model number is assigned upon customer frequency designation.
2. All units can be ordered with choke flanges - thickness will change.
3. UNC — 2B threads are standard. Clearance holes are optional.
4. Wider BW available - contact factory for specifications.

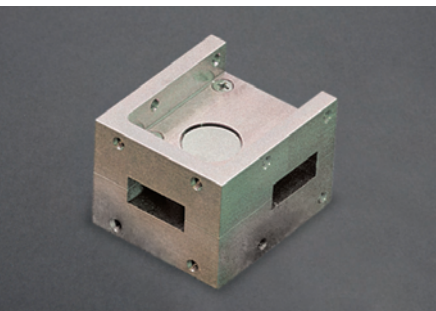
STANDARD ISOLATOR AND CIRCULATOR



Model Number	Freq. (GHz)	WR	Flange	Isolation (dB MIN)	INS. LOSS (dB MAX)	VSWR (MAX)	Size, Inches (W x L x H)
S350 (*)	2.70-2.90	284	CMR284	23	0.25	1.15:1	5.50 7.50 2.40
S351 (*)	2.90-3.10	284	UG584/U	23	0.25	1.15:1	5.60 6.64 5.32
S352 (*)	3.10-3.30	284	CPR284F	23	0.25	1.15:1	5.50 7.50 3.00
A350 (*)	3.70-4.20	229	CMR229	23	0.25	1.15:1	4.80 6.38 2.80
G350 (*)	4.40-5.00	187	CMR187	23	0.20	1.15:1	4.00 4.75 1.80
B350 (*)	5.90-6.40	159	CMR159	23	0.20	1.15:1	3.50 4.00 2.40
J350 (*)	6.50-7.10	137	UG441/U	23	0.20	1.15:1	3.13 4.00 3.10
H350 (*)	7.20-8.40	112	UG138/U	23	0.20	1.15:1	1.88 3.25 1.90
X350 (*)	8.50-9.60	90	UG135/U	23	0.20	1.15:1	1.63 2.38 1.63
X351 (*)	9.00-10.0	90	UG135/U	23	0.20	1.15:1	1.63 2.38 1.63
M350 (*)	10.7-11.7	75	WR75	23	0.20	1.15:1	1.50 2.25 1.50
M351 (*)	10.7-13.2	75	WR75	20	0.30	1.20:1	1.50 2.25 1.50
M352 (*)	11.7-13.2	75	WR75	20	0.30	1.20:1	1.50 2.25 1.50
P350 (*)	13.5-15.5	62	UG1665/U	20	0.30	1.20:1	1.31 2.13 1.30
P351 (*)	14.0-14.5	62	UG1665/U	23	0.25	1.20:1	1.31 2.13 1.30
O352 (*)	17.7-19.7	51	WR51	20	0.30	1.20:1	1.31 2.13 1.30
K350 (*)	21.0-23.0	42	UG597/U	20	0.30	1.20:1	0.88 1.50 0.88
R350 (*)	26.5-30.0	28	UG599/U	20	0.40	1.20:1	0.75 1.25 0.75
R351 (*)	34.5-36.5	28	UG599/U	20	0.40	1.20:1	0.75 1.25 0.75
Q350 (*)	39.0-41.9	22	UG383/U	20	0.50	1.20:1	1.13 1.44 1.10
U350 (*)	41.5-42.5	19	UG383/U	20	0.50	1.20:1	1.13 1.44 1.10

*Add unit designation "C" for circulator (i.e. M650C) or "I" for isolator (i.e. M650I)

FULL BAND ISOLATOR AND CIRCULATOR



Model Number	Frequency (GHz)	Isolation (dB MIN)	INS. LOSS (dB MAX)	VSWR (MAX)	Flange Type MIL-F-3922	Size (W x L x H)
H650 (*)	7.05- 10.0	18	0.4	1.30:1	UG138/U	2.25 3.25 1.88
X650 (*)	8.00-12.4	18	0.4	1.30:1	UG135/U	2.00 2.38 1.63
M650 (*)	10.0-15.0	18	0.4	1.30:1	WR75	1.75 2.25 1.50
P650 (*)	12.4-18.0	18	0.4	1.30:1	UG1665/U	1.50 2.19 1.30
K650 (*)	18.0-26.5	18	0.4	1.30:1	UG597/U	1.00 1.50 0.88
R650 (*)	26.5-40.0	14	0.6	1.45:1	UG599/U	0.75 1.25 0.75

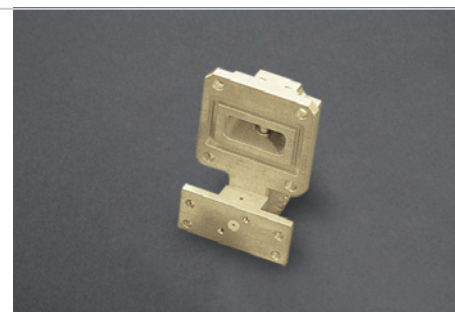
*Add unit designation "C" for circulator (i.e. M650C) or "I" for isolator (i.e. M650I)

COMPACT (WAVEGUIDE JUNCTION) IN-LINE ISO-ADAPTERS

Model Number	Freq. (GHz)	Wave Guide	W/G Flange	Connection	ISOL (dB MIN)	VSWR (MAX)	INS. LOSS (dB MAX)
H320H	7.70-8.40	WR112	UG138/U	SMA FEM	23	1.15:1	0.20
X320H	9.30-10.3	WR90	UG135/U	SMA FEM	23	1.15:1	0.20
M320H	11.7-12.2	WR75	M3922/53-008	SMA FEM	23	1.15:1	0.20
P320H	15.5-16.5	WR62	UG1665/U	SMA FEM	23	1.15:1	0.20
K320H	18.0-20.5	WR42	UG595/U	SMA FEM	20	1.25:1	0.30

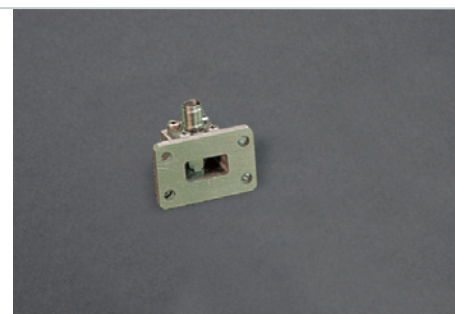
HIGH PERFORMANCE, RIGHT ANGLE ISO-ADAPTERS

Model Number	Freq. (GHz)	Wave Guide	Input Flange	Output Conn.	ISOL (dB MIN)	VSWR (MAX)	INS. LOSS (dB MAX)
S320G	2.20-2.30	WR430	UG437B/U	SMA FEM	23	1.15:1	0.15
S321G	2.20-2.30	WR340	CPR340G	SMA FEM	23	1.15:1	0.15
SC322G	2.90-3.20	WR284	CPR284G	SMA FEM	23	1.15:1	0.20
S320G	3.70-4.20	WR229	CPR229G	SMA FEM	25	1.10:1	0.15
C320G	4.40-5.00	WR187	UG407/U	SMA FEM	23	1.15:1	0.20
C321G	5.40-5.90	WR187	CPR187G	SMA FEM	23	1.15:1	0.20
C322G	7.25-7.75	WR137	CPR137G	SMA FEM	23	1.15:1	0.25
CX320G	7.90-8.40	WR112	UG138/U	SMA FEM	21	1.20:1	0.20
X320G	9.00-10.0	WR90	UG135/U	SMA FEM	23	1.15:1	0.20
M320G	11.7-12.2	WR75	M3922/53-008	SMA FEM	23	1.15:1	0.35
M321G	14.0-15.0	WR62	UG1665/U	SMA FEM	20	1.20:1	0.40
KM321G	17.7-19.7	WR42	UG597/U	SMA FEM	20	1.20:1	0.50

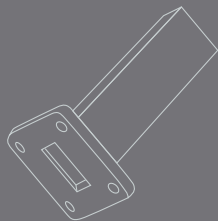


WAVEGUIDE TO COAXIAL ADAPTERS

Model Number	Freq. (GHz)	Waveguide Size	INS. LOSS (dB MAX)	VSWR (MAX)	Input Flange	Length Inches
L620P	1.70-2.60	WR430	0.20	1.15:1	UG437B/U	4.50
C620P	2.20-3.30	WR340	0.20	1.15:1	UG554A/U	4.00
S620P	2.65-3.95	WR284	0.20	1.15:1	UG584/U	3.00
A620P	3.30-4.95	WR229	0.20	1.15:1	CMR229	2.50
G620P	3.95-5.85	WR187	0.20	1.15:1	UG407/U	2.00
B620P	4.90-7.05	WR159	0.20	1.15:1	CMR159	2.00
J620P	5.85-8.20	WR137	0.20	1.15:1	UG441/U	1.75
H620P	7.05-10.0	WR112	0.20	1.15:1	UG138/U	1.50
X620P	8.20-12.4	WR90	0.20	1.15:1	UG135/U	1.25
M620P	10.0-15.0	WR75	0.20	1.15:1	WR75	1.10
P620P	12.4-18.0	WR62	0.20	1.15:1	UG1665/U	1.20
K620P	18.0-26.5	WR42	0.20	1.15:1	UG595/U	1.30
R620P	26.5-40.0	WR28	0.20	1.30:1	UG599/U	1.30

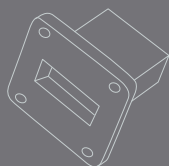


PRECISION LOW POWER TERMINATIONS



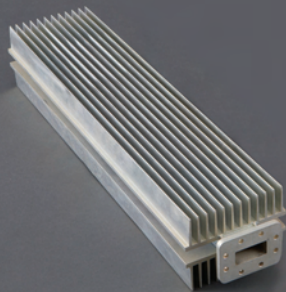
Model Number	Freq. Range (GHz)	Waveguide Size	Equivalent Flange	MAX Avg. PWR (WATTS)	VSWR (MAX)	Length Inches
L620RP	1.70-2.60	WR430	UG437B/U	10	1.05:1	18.0
S620RP	2.65-3.95	WR284	UG584/U	5	1.05:1	12.0
A620RP	3.30-4.90	WR229	CMR229	5	1.05:1	6.0
G620RP	3.95-5.85	WR187	UG407/U	5	1.05:1	6.0
B620RP	4.90-7.05	WR159	CMR159	4	1.05:1	6.0
J620RP	5.85-8.20	WR137	UG441/U	3	1.05:1	5.0
X620RP	7.05-10.0	WR112	UG138/U	2	1.05:1	5.0
X621RP	8.20-12.4	WR90	UG135/U	2	1.05:1	4.0
M621RP	10.0-15.0	WR75	M3922/53-008	2	1.05:1	3.0
P620RP	12.4-18.0	WR62	UG1665/U	1.5	1.05:1	2.5
K620RP	18.0-26.5	WR42	UG595/U	1.5	1.05:1	2.0
R620RP	26.5-40.0	WR28	UG599/U	1	1.05:1	1.5

COMPACT LOW POWER TERMINATIONS



Model Number	Freq. Range (GHz)	Waveguide Size	Equivalent Flange	MAX Avg. PWR(WATTS)	VSWR(MAX) Inches	Length
L620RL	1.70-2.60	WR430	UG437B/U	10	1.15:1	3.00
S620RL	2.65-3.95	WR284	UG584/U	5	1.15:1	2.50
A620RL	3.30-4.90	WR229	CMR229	5	1.15:1	2.25
G620RL	3.95-5.85	WR187	UG407/U	5	1.15:1	2.00
B620RL	4.90-7.05	WR159	CMR159	4	1.15:1	1.75
J620RL	5.85-8.20	WR137	UG441/U	3	1.15:1	1.50
H620RL	7.05-10.0	WR112	UG138/U	2	1.15:1	1.00
X620RL	8.20-12.4	WR90	UG135/U	2	1.15:1	1.00
M620RL	10.0-15.0	WR75	M3922/53-008	2	1.15:1	0.75
P620RL	12.4-18.0	WR62	UG1665/U	1.5	1.15:1	0.75
K620RL	18.0-26.5	WR42	UG595/U	1.5	1.15:1	0.75
R620RL	26.5-40.0	WR28	UG599/U	1	1.15:1	0.75

HIGH POWER TERMINATIONS (AIR COOLED)

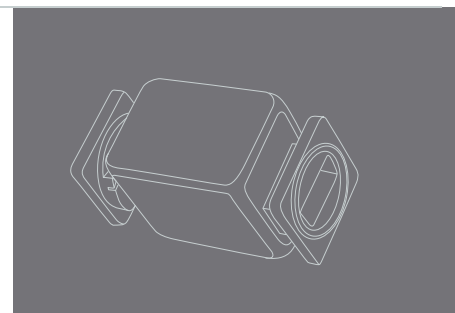


Model Number	Freq. Range (GHz)	Waveguide Size	Equivalent F Lange	MAX Avg. PWR (WATTS)	Length Inches
A620RH	3.30-4.90	WR229	CMR229	5000	30.0
G620RH	3.95-5.85	WR187	UG407/U	3000	24.0
B620RH	4.90-7.05	WR159	CMR159	3000	24.0
J620RH	5.85-8.20	WR137	UG441/U	2000	20.0
H620RH	7.05-10.0	WR112	UG138/U	1000	14.0
X622RH	8.20-12.4	WR90	UG135/U	1000	14.0
M620RH	10.0-15.0	WR75	M3922/53-008	800	10.0
P620RH	12.4-18.0	WR62	UG1665/U	500	10.0
K620RH	18.0-26.5	WR42	UG595/U	250	8.0
R620RH	26.5-40.0	WR28	UG599/U	125	6.0

Design Note: Typical VSWR is 1.10:1 over full frequency range.
1. Lower and higher power ratings are available upon request.

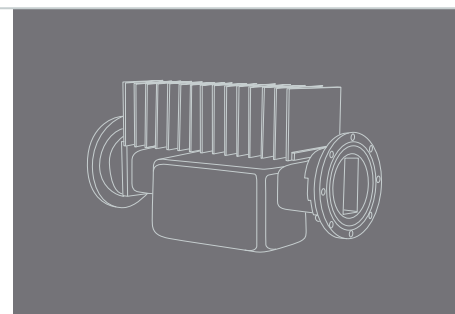
RESONANCE ISOLATORS—FULL BAND

Model Number	Frequency (GHz)	Isolation (dB MIN)	INS LOSS (dB MAX)	VSWR Bilateral(MAX)	Power KW PK	MAX W Avg.	Flange Type	Size, Inches (L x W x H)
LH610	7.05-10.0	30	1.0	1.15:1	10	20	UG51/U	6.00 2.50 2.70
LX610	8.20-12.4	30	1.0	1.15:1	10	20	UG39/U	5.00 2.50 2.50
LM610	10.0-15.0	30	1.0	1.15:1	10	20	WR75	5.00 2.50 2.25
LP610	12.4-18.0	30	1.0	1.15:1	10	20	UG419/U	5.00 2.50 2.25



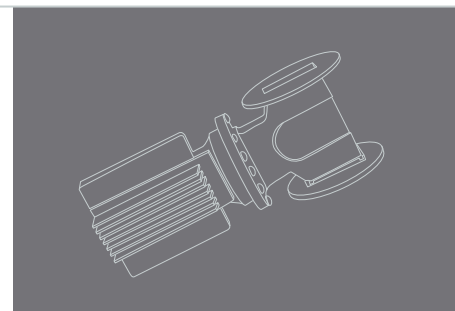
RESONANCE WAVEGUIDE ISOLATORS—HIGH POWER

Model Number	Wave Guide	Freq. (GHz)	Specs	Power(W) AVG	PK	Flange	Size Inches
LS380	WR284	2.90-3.10	10/0.5/1.20:1	300K	350	CPR284G	6
LG380	WR187	4.90-5.10	10/0.5/1.20:1	750K	750	UG148C/U	6
LJ380	WR137	6.20-7.00	10/0.8/1.20:1	500K	600	UG343B/U	6
LH380	WR112	7.80-8.50	15/0.6/1.20:1	325K	350	UG528/U	4.5
LX380	WR90	9.00-9.60	15/0.8/1.20:1	300K	300	UG135/U	4
LM380	WR75	11.9-13.2	13/0.7/1.20:1	100K	150	WR75	3
LP380	WR62	14.5-15.4	13/0.7/1.20:1	100K	125	UG541A/U	3



HIGH POWER JUNCTION WAVEGUIDE CIRCULATOR

Model Number	Freq. (GHz)	Specs	RF PK	PWR. Watts CW	Wave Guide	Size Inches
JS350H	2.90-3.10	20/0.4/1.20:1	200K	800	WR284	6.00 6.00 3.00
JB350H	5.90-6.40	20/0.4/1.20:1	100K	700	WR159	4.00 4.00 2.44
JH350H	7.90-8.40	20/0.3/1.20:1	70K	600	WR112	2.50 2.50 1.88
JX350H	9.30-9.50	20/0.3/1.20:1	50K	500	WR90	2.30 2.30 1.63
JM350H	12.2-12.7	20/0.3/1.20:1	30K	400	WR75	2.00 2.00 1.50
JP350H	16.0-16.3	20/0.3/1.20:1	20K	350	WR62	1.75 1.75 1.31
JK350H	23.5-25.3	20/0.3/1.20:1	10K	100	WR42	1.00 1.50 0.88
JR350H	27.5-29.5	20/0.3/1.20:1	5K	100	WR28	1.00 1.50 0.75



Notes

All units listed are circulators. Terminated models (isolators) are available. Please specify reverse power (peak and average). Designs available with loads handling full average power.

1. All flanges aluminium 4 tapped hole cover (UG type. Brass and/or choke flanges and European sizes available).
2. All unit pressurized 15 PSI.
3. Higher power options (both peak and average) available with higher pressure. Contact factory for trade offs.

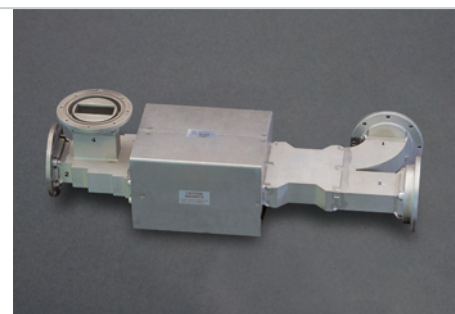
Convection cooling required. Contact factory for cooling options.

DIFFERENTIAL PHASE WAVEGUIDE ISOLATOR/CIRCULATOR

Model Number	Freq. (GHz)	Specs	Power Avg.	RF Watts Peak (1)	Wave Guide	Length Inches
MG120	4.90-5.10	20/0.4/1.15:1	1K	750K	WR187	22.00
MB120	5.40-5.90	20/0.4/1.15:1	1K	500K	WR159	16.50
MJ120	5.90-7.20	20/0.4/1.15:1	950	400K	WR137	14.90
MH120	8.90-9.50	20/0.4/1.15:1	900	350K	WR112	13.50
MX120	8.60-9.60	20/0.4/1.15:1	750	250K	WR90	11.50
MP120	16.5-17.5	20/0.4/1.15:1	500	150K	WR62	8.00
MR120	34.0-36.0	20/0.4/1.15:1	300	10K	WR28	5.00

Notes

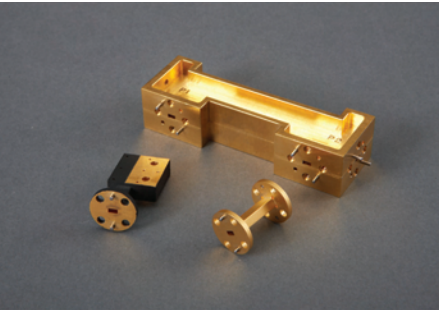
1. Power rating dependent on pressurization and cooling system.
2. All units listed are circulators. Terminated models (isolators) are available. Please specify reverse power (peak and average).
3. Other waveguide sizes are available upon request.





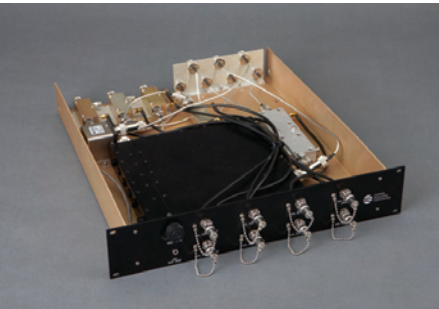
BUILT-IN ISOLATORS

Channel Microwave designs and supplies built-in isolators tailored to fit a customer housing. The result of this approach is a cost effective package that minimizes interconnect losses and mismatches. Channel Microwave also offers design options such as Bias Injection, DC Blocking and End Launched Waveguide Front Ends. Supplying the machined housing complete with the isolator installed and inspected per customer specification is another cost saving service offered. Please do not hesitate to contact our design team about your specific application.



HI REL

Channel Microwave offers space qualified components which include: isolators, terminations, couplers, filters and adapters. These products are offered connectorized, tabbed, with pins or waveguide.



PASSIVE ASSEMBLIES

If you have a unique requirement for a passive integrated assembly which contains a ferrite product, Channel Microwave can reduce size and weight through our mechanical design/layout capabilities. In many cases, actual operating performance is enhanced through product integration. Passive assemblies can include but are not limited to iso-filters, circulator-coupler detectors, isolators, isolator-switches, Iso-monitors and other components.



BROADCAST PRODUCTS

Channel Microwave has a full line of circulators designed for terrestrial digital broadcast installations. These units cover the 88-108 MHz broadcast band and have power handling capability up to 6 KW average and 25 KW peak.



FILTERS

Channel Microwave designs and manufactures filters and subsystems for the microwave and RF industries. Military, Space and Commercial applications are being addressed from DC to 40 GHz. Filter topologies include lumped element, cavity, combline, interdigital, ceramic, waveguide and tubular.



HOW TO ORDER

Here at **Channel Microwave**, our philosophy is that a strong commitment to customer service and customer involvement is essential to build a strong, competitive company. We want to work with our customers to meet and exceed all of their expectations for ferrites, filters, subsystems, and other passive components. We take pride in our ability to meet unusual and highly specialized requirements.

How to Order

When ordering, please include the Channel Microwave part number. When quoting, please email us at sales@channelmicrowave.com or info@channelmicrowave.com. Feel free to contact us directly by phone **805.482.7280** or fax: **805.987.8794**. You can also contact your local sale representative.

QUALITY SYSTEM Channel Microwave is **ISO9001:2008** certified. Samples of our Manufacturing and Documentation capabilities are available upon request. Channel Microwave welcomes customer visits or surveys. Please, contact our sales or quality department for further information.

WARRANTY Channel Microwave warrants all products to be free of defects in material or workmanship for a period of one year after date of manufacture.

TERMS Standard Terms are NET 30 (on approved credit). F.O.B. is Camarillo, CA. Channel Microwave does accept Visa, MasterCard and American Express.

DELIVERY For current delivery times, please email your inquiry to sales@channelmicrowave.com.



IN HOUSE CAPABILITIES

Design

Genesis design software
Solidworks 3-D
AutoCAD
Company proprietary software

Testing

Vector Network Analyzers
Thermal Cycling
EMI
Pressure/Leak testing
Hot/Cold Temperature Testing
Small Signal Electrical
Pulse and CW power testing
Thermal Vacuum
Multipaction Testing

Machine Shop

Vertical CNC's
Vertical Manual Mills
Lathes, Grinders and Presses

Quality Assurance

ISO 9001:2008 Certified

IN HOUSE CAPABILITIES PROGRAMS

PROGRAMS SUPPORTED BY CHANNEL MICROWAVE

Space Qualified Programs

EOS Satellite
MILSTAR
ASTROLINK
WINDSAT Satellite
Mars Orbiter (MRO)
X Star Satellite
SPAIN SAT
NASA Space Lab
Wideband Gap Filler
INTELSAT VII Satellite
DSC
NASA (Various)
Iridium Satellite

Military Programs

AEGIS
B1 Aircraft
E2D Aircraft
F-16 Aircraft
F22 Aircraft
JSF Aircraft
C130 Aircraft
AWACS
Combat Talon
J-Stars
TPQ36 Radar
Tomahawk
SM II



www.channelmicrowave.com

480 Constitution Avenue
Camarillo, California 93012
Phone **805.482.7280** • sales@channelmicrowave.com

smiths
bringing technology to life