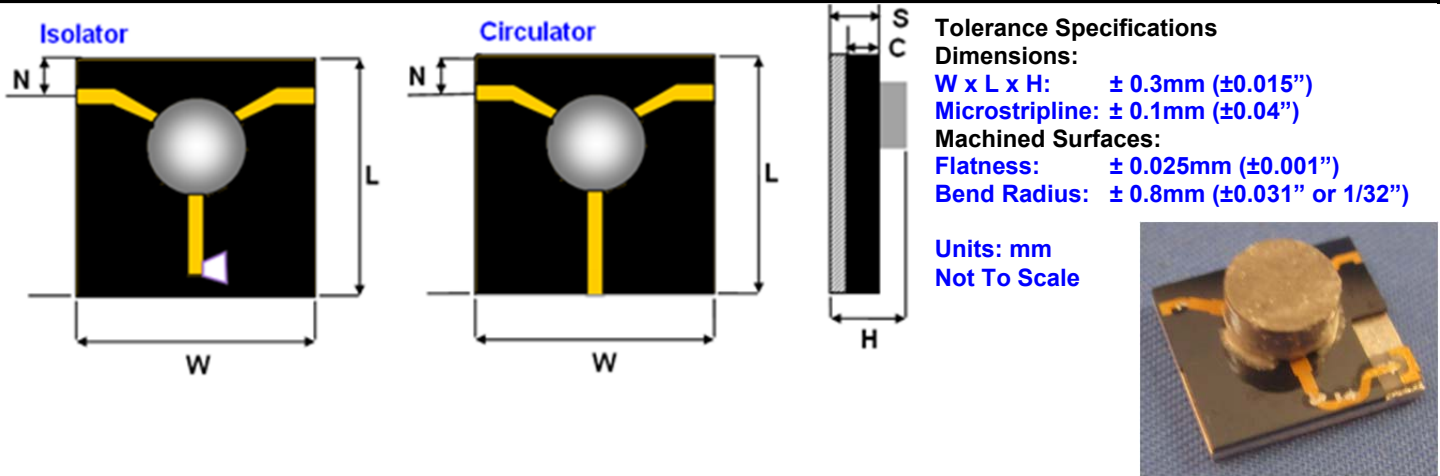


Wide Band, Microstrip Circulators and Isolators, 3-18GHz wide (split) Bands

Example: 6-18GHz FULL Band, MSSMWB, 1 - 5 Watt loads
Ferrite substrate mounted onto steel carrier.



Direction of RF:	
R	Clockwise →
L	Anticlockwise ←

Order Examples: **RADI-6-18-MSSMWB-1WR-b**
I=ISOLATOR / C=CIRCULATOR

Frequency GHz	I or C	W mm	L mm	H mm max.	C mm Ref.	N* mm	S ±0.035	Insertion loss (dB)	Isolation (dB)	VSWR	Power Fwd (W)	Power Revs (W)	Conditions
3 to 6 (Preliminary)	C	25 or 30	25 or 30	TBA	TBA	TBA	TBA	0.7 0.8	16 14	1.40:1 1.55:1	1	1	Room temp. -10 to +60°C
6 to 11 (Preliminary)	C	15	15	TBA	TBA	TBA	TBA	0.7 0.8	16 15	1.40:1 1.50:1	1	1	Room temp. -10 to +60°C
5 to 18 (Preliminary)	C	12.0	10.5	6.0	0.5	1.5	1.5	1.8	10	1.80:1 2.10:1	10	2	+15 to +35 -30 to +70°C
6 to 12 (Prel.)	I	12	11	4.5	TBA	TBA	TBA	0.8 1.0	16 15	1.40:1 1.50:1	5	5	Room temp. -30 to +70°C
6 to 12	I	13.5	13.5	5.5	0.635	1.5	1.65	0.9 1.1	16 15	1.40:1 1.50:1	5	1	Room temp. -30 to +70°C
6 to 12	C	13.5	13.5	5.5	0.635	1.5	1.65	0.9 1.1	16 15	1.40:1 1.50:1	5	1	Room temp. -30 to +70°C
6 to 13	I	13.5	13.5	6.0	TBA	TBA	TBA	1.0	15	1.50:1	1	1	-10 to +50°C
6 to 18 (4085)	I	12.0	10.5	6.0	0.5	1.5	1.5	1.4 1.6	12 10	1.70:1 1.80:1	2	1	-10 to +50 °C -40 to +85°C
6 to 18 (4085)	I	12.0	10.5	6.0	0.5	1.5	1.5	1.4 1.6	12* 10	1.60:1 1.70:1	10	2	+15 to +35 -40 to +85°C
6 to 18 (4085)	I	12.0	10.5	6.0	0.5	1.5	1.5	1.5 1.6	11* 10	1.60:1 1.70:1	15	2	+15 to +35 -40 to +85°C
6 to 18 (STD)	I or C	12.0	10.5	6.0	0.5	1.5	1.5	1.4 1.7	12 10	1.70:1 2.00:1	10, 15	2, 4, 5	+15 to +35 -30 to +70°C
6 to 18 (1570)	C	12.0	10.5	6.0	0.5	1.5	1.5	1.4 @ +50 °C	10	1.80:1	15	5	-15 to +70 °C
7 to 13	C	12.0	12.0	4.0	TBA	TBA	tba	0.9	15	1.50:1	1	0.25	-30 to +70°C

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Ferrite substrate mounted onto steel carrier.

Frequency GHz	I or C	W mm	L mm	H mm max.	C mm Ref.	N* mm	S ±0.035	Insertion loss (dB)	Isolation (dB)	VSWR	Power Fwd (W)	Power Revs (W)	Conditions
8 to 12	C	15.0	15.0	6.0	TBA	TBA	tba	0.7 0.8	18 17	1.30:1 1.35:1	2	2	Room temp. -55 to +85°C
8 to 12	I	13.5	13.5	5.5	0.500	1.5	1.55	0.8 1.0	16 15	1.40:1 1.50:1	5	1	Room temp. -30 to +70°C
8 to 12	C	13.5	13.5	5.5	0.500	1.5	1.55	0.8 1.0	16 15	1.40:1 1.50:1	10	1	Room temp. -30 to +70°C
8 to 12 (Soon)	I	13.5	17.5	5.5	0.635 0.500	1.5	1.65 1.65	0.8 1.0	16 15	1.40:1 1.50:1	10	1	Room temp. -30 to +70°C
8 to 12	I	12.0	12.0	5.5	TBA	TBA	TBA	1.0 1.1	14 13	1.60:1 1.70:1	1	1	Room temp. -30 to +60°C

*Amplitude Match ±0.2dB in 7-12GHz band

See MSS and MSSM Data sheets for more models.

RADC-6-18GHz

Installation instruction for MSS and MSSM Isolators and Circulators.

These models contain low melting point, Indium fine tuning elements and unit should be mounted using an Indium based solder or clear epoxy, as a secondary operation, in strict compliance with the following:

1. All Microstrip Isolators and Circulators have pure indium tuning elements that can be damaged by sustained temperatures over 130°C, (Indium melting point is 156°C). So under no circumstances should unit ever exceed 130°C for a few seconds

2. Preferred attachment for the MSS and MSSM models is

by using a thin smear of clear non conductive epoxy, with temperature of polymerization close to 80°C, it is important to leave area around microstrip junctions clear to facilitate grounding. We do not recommend conductive epoxies as it is too easy to contaminate the isolator surface and detune/damage the unit.

3. Alternate attachment for MSS and MSSM model is by soldering, (Soldering is a more complicated process, but Insertion loss at frequencies over 12 GHz can be a little better than with epoxy)

- Note the substrates come soldered to a metal back plate. Mounting can only be with low melting point indium solder
- Fitting is by using a Indium paste solder (we suggest Lead free: 50% Indium / 50% Tin Alloy) with 125°C liquidus.
- Use a controlled solder reflow cycle of up to 125°C for 5 seconds maximum, with slow up and down ramps. (do not use a hot plate due to the inability to control-it will likely melt the Indium and even desolder the ferrite substrates)

4. Recommended interconnection is by non ultrasonic wedge bonding.

- Heat the unit to a maximum of 100°C for <3 minutes
- Maximum wedge temperature during the bonding process 350°C for 25ms

5. Cavity Effect: Minimum distance between the housing/module cover: 1.0 - 1.5mm above the magnet without any change in performances. and about 0.7mm with minimum changes.

6. MSSM unit may be mounted on any metal base (Ferrous or Non Ferrous / ie: Steel or Aluminum)

