

### Features

- High Performance
- Module and Connectorized
- Broadband Design
- Low Leakage Modules Available

### Description

Microsemi's Limiters are available as drop in modules or as connectorized assemblies. These products are designed for broadband limiting applications with selected 'low leakage' limiters for more sensitive receiver protection. Microsemi can also supply custom limiter designs including integrated assemblies such as, switch / limiter modules.

### Applications

- Receiver Protection
- Amplifier Protection

### MECHANICAL NOTES

1. All pins are 0.12 ±0.001" dia. By 0.100" (min) long. May be supplied with tabs, 0.025 ±0.01" by 0.006 ±0.002" upon request.
2. Tolerance on 3 place decimals is ±0.003" unless specified.
3. Case and leads are gold plated per MIL-G-45204, Type 3, Grade A, 50µinch (min).

### ENVIRONMENTAL

These units are designed to meet the following environmental conditions.

MODULES				CONNECTORIZED ASSEMBLIES			
TEST	MIL-PRF	METHOD	COND	TEST	MIL-PRF	METHOD	COND
Internal Visual	883	2017		Internal Visual	883	2017	
Stabilization Bake	883	1008	B	Stabilization Bake	883	1008	B
Thermal Cycle	883	1010	B	Thermal Cycle	883	1010	B
Constant Acceleration	883	2001	A (Y Axis)	Constant Acceleration	883	2001	A (Y Axis)
Fine Leak Gross Leak	883	1014 1014	A1 C1	Humidity	202B	103B	B1
External Visual	883	2009		External Visual	883	2009	

**STANDARD BROADBAND LIMITER MODULES**

FREQUENCY RANGE (GHz)	INSERTION LOSS (dB MAX)	VSWR (MAX)	SURVIVAL PEAK	POWER (WATTS) CW	FLAT LEAKAGE (mW MAX)	MODEL NUMBER	PACKAGE STYLE
<b>.5 to 4.0</b>	0.5	1.5:1	100	3.0	400	GG77012-01	210013
	0.7	1.5:1	200	3.0	200	GG77010-01	210001
	0.7	1.5:1	200	3.0	125	GG77011-01	210003
	0.8	1.5:1	1000	5.0	200	GG77013-01	210003
<b>2.0 to 8.0</b>	0.6	1.7:1	100	2.0	500	GG77012-02	210013
	0.7	1.7:1	200	2.0	125	GG77010-02	210001
	0.7	1.7:1	200	2.0	100	GG77011-02	210003
	1.2	1.7:1	1000	3.0	200	GG77013-02	210003
<b>4.0 to 12.0</b>	1.0	1.8:1	200	2.0	100	GG77010-03	210001
	1.0	1.8:1	200	2.0	60	GG77011-03	210003
	1.6	1.8:1	800	3.0	200	GG77013-03	210003
<b>8.0 to 18.0</b>	1.9	1.9:1	200	2.0	100	GG77010-04	210001
	1.9	1.9:1	200	2.0	60	GG77011-04	210003
	2.2	2.0:1	600	3.0	200	GG77013-04	210003
<b>2.0 to 18.0</b>	2.0	2.0:1	200	2.0	125	GG77010-05	210001
	2.0	2.0:1	200	2.0	100	GG77011-05	210003
	2.2	2.0:1	600	3.0	200	GG77013-05	210003

**LOW LEAKAGE BROADBAND LIMITER MODULES**

<b>2.0 to 8.0</b>	1.4	1.8:1	10	1	20	GG77014-01	210003
<b>4.0 to 12.4</b>	1.9	2.0:1	10	1	20	GG77014-02	210003
<b>8.0 to 18.0</b>	2.2	2.0:1	10	1	35	GG77014-03	210003

**Notes:**

- All low level parameters specified at -10 dBm input power.
- All Limiter Modules require an external D.C. return of 1.0 ohm or less except the GG77014-XX series which require external D.C. blocks at both ends.
- Peak power ratings apply @ 1.0μsec pulse width and 0.001 duty cycle.
- Spike leakage is 0.2 ergs (max) based on the assumption that the pulse rise time of the high power pulse is greater than 20.0nsec. Spike leakage for the Low Frequency Limiters is not specified.
- Recovery Time (3 dB) for all units except for the GG77014-XX, GG77314-XX and GG77315-XX series is 250nSec @ 100W pulsed input power. Series GG77314-XX and GG77014-XX recovers in 500nSec. at rated pulsed power and Series GG77315-XX recovers in 1.0μSec at rated pulsed power.
- Limiting threshold (1 dB compression point) is 5mW (min) except for the GG77314-XX series which is 1.0mW (min).
- Leakage levels are specified at rated peak power.

**STANDARD BROADBAND CONNECTORIZED LIMITERS**

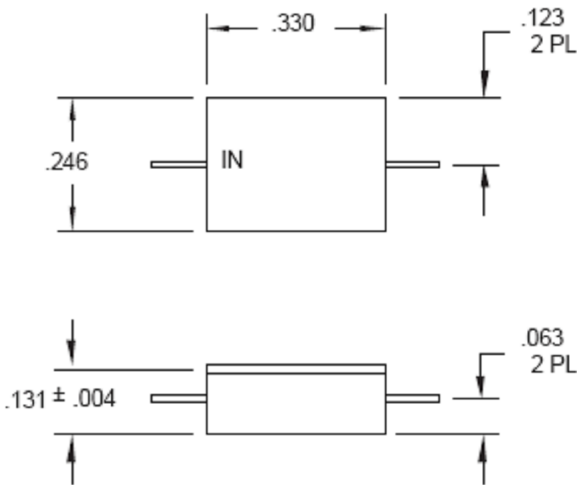
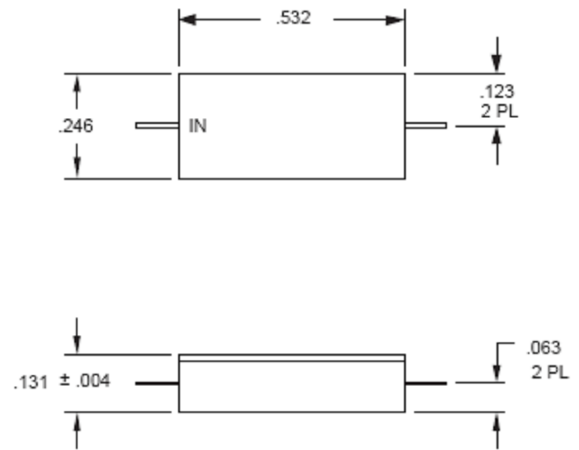
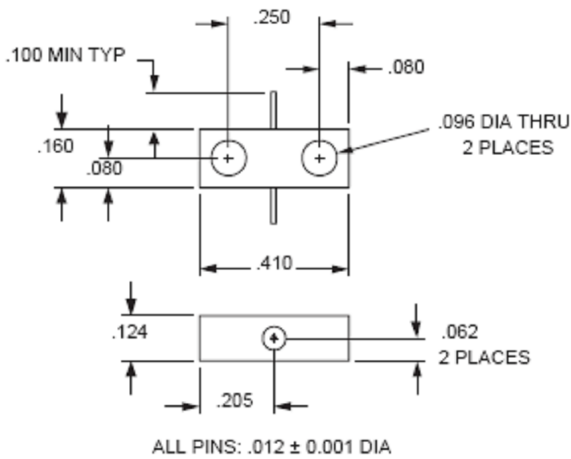
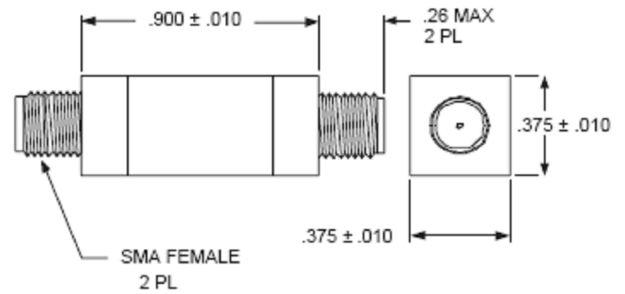
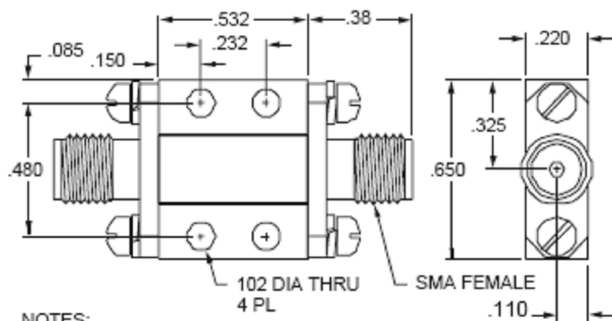
FREQUENCY RANGE (GHz)	INSERTION LOSS (dB MAX)	VSWR (MAX)	SURVIVAL PEAK	POWER (WATTS) CW	FLAT LEAKAGE (mW -MAX)	MODEL NUMBER	PACKAGE STYLE
.5 to 4.0	0.6	1.5:1	200	3.0	200	GG77310-01	210019
	0.7	1.5:1	200	3.0	100	GG77311-01	210019
	0.9	1.5:1	1000	5.0	200	GG77313-01	210019
2.0 to 8.0	1.0	1.7:1	200	2.0	125	GG77310-02	210019
	1.0	1.7:1	200	2.0	100	GG77311-02	210019
	1.5	1.7:1	1000	3.0	200	GG77313-02	210019
4.0 to 12.0	1.5	1.8:1	200	2.0	100	GG77310-03	210019
	1.5	1.8:1	200	2.0	60	GG77311-03	210019
	2.1	1.8:1	800	3.0	200	GG77313-03	210019
8.0 to 18.0	2.2	1.9:1	200	2.0	100	GG77310-04	210019
	2.5	1.9:1	200	2.0	60	GG77311-04	210019
	2.5	2.0:1	600	3.0	200	GG77313-04	210019
2.0 to 18.0	2.2	2.0:1	200	2.0	125	GG77310-05	210019
	2.5	2.0:1	200	2.0	100	GG77311-05	210019
	2.5	2.0:1	600	3.0	200	GG77313-05	210019

**LOW LEAKAGE CONNECTORIZED LIMITERS**

2.0 to 8.0	1.4	1.8:1	10.0	1.0	20.0	GG77314-04	210019
4.0 to 12.4	2.0	2.0:1	10.0	1.0	20.0	GG77314-05	210019
8.0 to 18.0	2.5	2.0:1	10.0	1.0	35.0	GG77314-06	210019
2.0 to 8.0	1.4	1.8:1	10.0	1.0	20.0	GG77314-07	210032
4.0 to 12.4	2.0	2.0:1	10.0	1.0	20.0	GG77314-08	210032
8.0 to 18.0	2.5	2.0:1	10.0	1.0	35.0	GG77314-09	210032

**LOW FREQUENCY CONNECTORIZED LIMITERS**

0.01 to 0.1	0.7	1.5:1	100	1.0	200	GG77315-01	210019
0.1 to 0.5	0.7	1.5:1	100	1.0	200	GG77315-02	210019
0.5 to 1.0	1.0	1.5:1	100	1.0	200	GG77315-03	210019
0.01 to 0.1	0.7	1.5:1	100	1.0	200	GG77315-04	210093
0.1 to 0.5	0.7	1.5:1	100	1.0	200	GG77315-05	210093
0.5 to 1.0	1.0	1.5:1	100	1.0	200	GG77315-06	210093

**STANDARD MECHANICAL OUTLINES**
**210001 OUTLINE**

**210003 OUTLINE**

**210013 OUTLINE**

**210019 OUTLINE**

**210032 OUTLINE**


NOTES:  
1. REMOVEABLE CONNECTORS REVEAL 0.15 DIA PINS .07 LONG

**210093 OUTLINE**
