GG77000 Series

RF Broadband Limiters

GENERAL DESCRIPTION

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

FEATURES

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

APPLICATIONS

- Receiver Protection
- Amplifier Protection

ENVIRONMENTAL

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	883	1014 1014	A1 C1	Humidity	202B	103B	B1
External Visual	883	2009		External Visual	883	2009	

- These units are designed to meet these environmental conditions

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STANDARD BROADBAND LIMITER MODULES @ 25°C

Frequency Range (GHz)	Insertion Loss (dB max)	VSWR (max)	Survival Peak	Power (Watts) CW	Flat Leakage (mW Max)	Model Number	Package Style
0.5 to 4.0	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
2.0 to 8.0	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
4.0 to 12.0	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
8.0 to 18.0	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
2.0 to 18.0	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 @ 25°C

2.0 to 8.0	1.4	1.8:1	10	1	20	GG77014-01	210003
4.0 to 12.4	1.9	2.0:1	10	1	20	GG77014-02	210003
8.0 to 18.0	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 DC return of 1.0 ohm or less except the GG77014-XX series, which requires external DC blocks at both ends. Model numbers GG77314-XX incorporate DC blocking capacitors and do not require either ground return or external DC blocks
- 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 specified at 0.1 ergs (max)
- Recovery time (3 dB) for all units expect 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 GG77014-XX and GG77314-XX series which is 1.0mW (min)
- Leakage levels are specified at rated peak power

For the most current data, consult MICROSEMI's website: ***www.MICROSEMI.com***
Specifications are subject to change, consult the RFIS factory at (978) 422-5600 *for the latest information.*

Microsemi

GG77000 Series

RF Broadband Limiters

STANDARD BROADBAND CONNECTORIZED LIMITERS @ 25°C

Frequency Range (GHz)	Insertion Loss (dB max)	VSWR (max)	Survival Peak	Power (Watts) CW	Flat Leakage (mW Max)	Model Number	Package Style
0.5 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 @ 25°C

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 @ 25°C

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

*For the most current data, consult MICROSEMI's website: **www.MICROSEMI.com***
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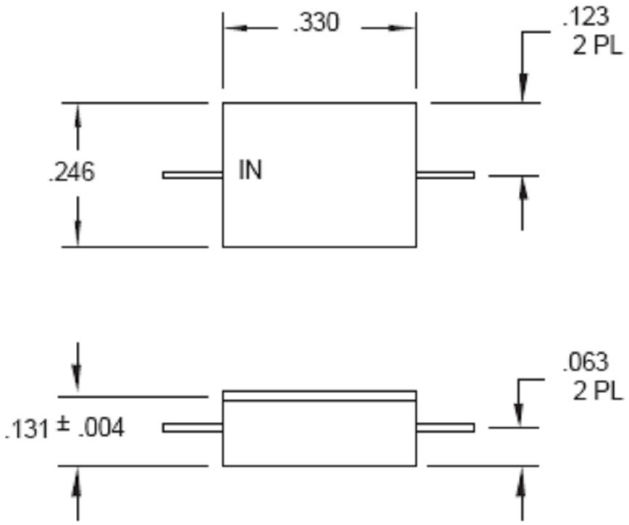
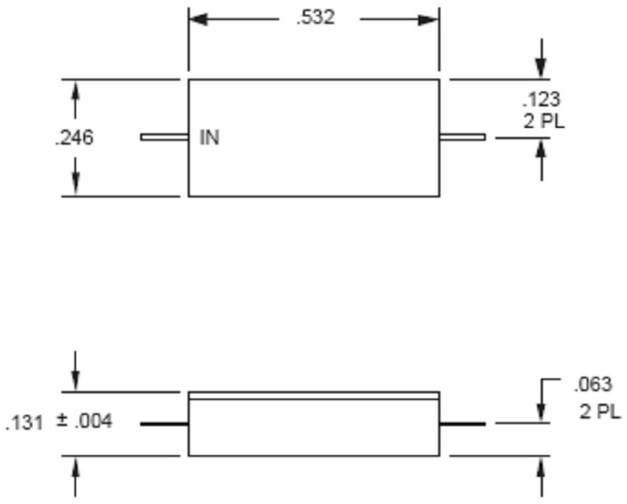
STANDARD MECHANICAL OUTLINES

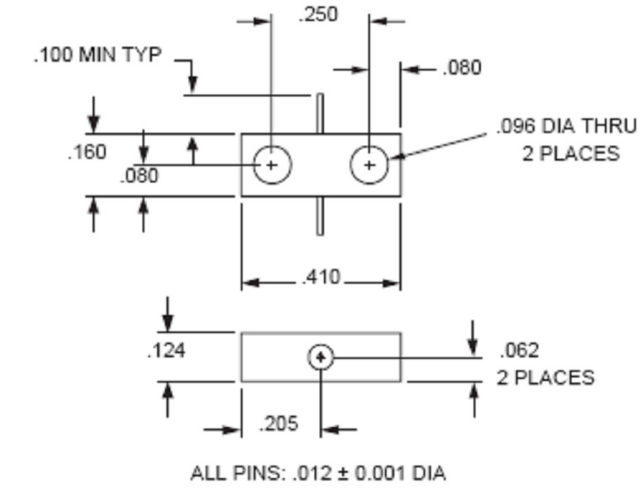
210001 OUTLINE



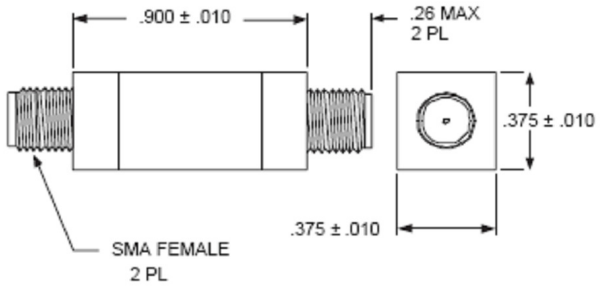
210003 OUTLINE



210013 OUTLINE



210019 OUTLINE



Notes:

1. All pins are 0.012±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).

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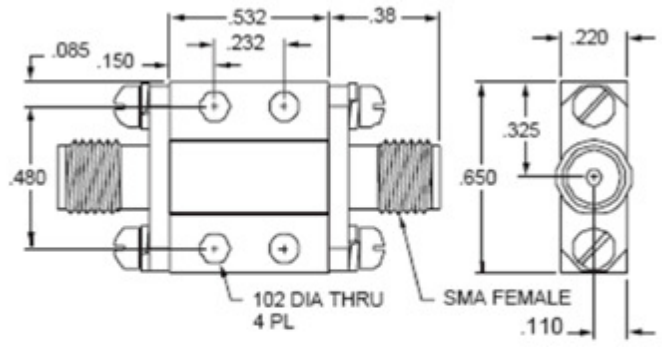
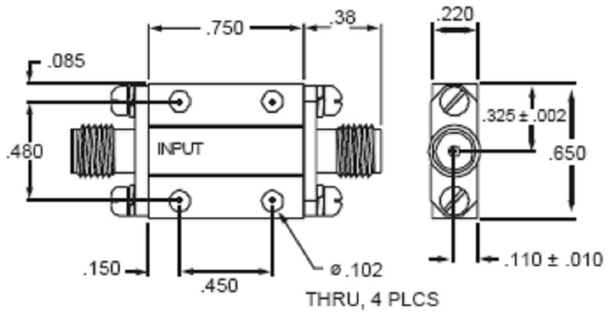
STANDARD MECHANICAL OUTLINES

210032 OUTLINE



210093 OUTLINE



Notes:

1. Removable connectors reveal 0.015±0.001” dia x 0.070±0.010” long pins
2. Tolerances: .xxx = 0.010”, .xx = 0.020”
3. Case and lead finish: Gold plate per MIL-G-45204, Type 3, Grade A, 50uinch min
4. SMA female connectors per MIL-PRF-39012

Revision History

Revision Level / Date	Para. Affected	Description
0.1 / 6 August 2012	-	Initial Preliminary Release