

## Limiters

Pin Diode, Pin Diode Low Leakage, High Power, and Surface Mount Limiters

# COBHAM

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The most important thing we build is trust

## Pin Diode and Low Leakage Limiters

### Description

Conventional limiters typically exhibit leakage levels up to +20dBm with recovery times less than 40nsec. These models handle up to 100W peak power levels and cover the frequency range from 100MHz to 40GHz. The limiter's 1 dB compression is around +11 dBm. Custom models with higher power handling are available.

Low Leakage limiters are designed to have lower threshold and leakage levels than those of conventional limiters in order to protect more sensitive components. The limiter threshold (1dB compression) is typically +5dBm. Low Leakage limiters will also handle peak power levels above 100W (1µsec pulse width, 0.001 duty cycle, and 1kHz repetition rate). Peak leakages are higher than CW leakages as they are with conventional limiters. This becomes exaggerated at frequencies below 2GHz.



### Features

- Low Insertion Loss
- Low Leakage Power Circuit Protection
- High CW Power Handling
- Hermetically Sealed Modules
- Assorted Package Styles
- Custom Designs Available

Frequency Range (GHz)	Part Number	Peak Input Power (W)	CW Input Power (Watts)	Maximum Flat Leakage (Peak Power) (+dBm)	Maximum Flat Leakage (CW Power) (+dBm)	Maximum Insertion Loss (dB)	Maximum VSWR	Standard Case Styles	Optional Case Styles	Limiter Type
0.1 - 1.1	ACLM-4538	100	2	20	18	0.4	1.4:1	C3	C36,C37,M22	Pin Diode
0.5 - 2	ACLM-4530	100	2	20	18	0.4	1.4:1	C3	C36,C37,M22	Pin Diode
0.1 - 4	ACLM-4637	100	2	20	17	0.5	1.4:1	C3	C36,C37,M22	Pin Diode
4 - 8	ACLM-4532	100	2	20	17	1.0	1.5:1	C3	C36,C37,M22	Pin Diode
8 - 12	ACLM-4533	100	2	21	18	1.5	1.6:1	C3	C36,C37,M22	Pin Diode
0.5 - 18	ACLM-4601	100	1	21	18	1.8	1.9:1	C36	C37,M22	Pin Diode
2 - 18	ACLM-4537	100	1	21	18	1.8	1.9:1	C36	C37,M22	Pin Diode
0.02 - 0.5	ACLM-4594F	100	3	-	13.5	0.4	1.3:1	C3	C36,C37,M10,M22	Low Leakage
0.1 - 2	ACLM-4800F	100	2	-	13.5	0.5	1.3:1	C3	C36,C37,M10,M22	Low Leakage
0.5 - 2	ACLM-4650F	100	2	-	13.5	0.5	1.4:1	C3	C36,C37,M10,M22	Low Leakage
0.5 - 6	ACLM-4700F	100	2	-	13.5	0.8	1.5:1	C3	C36,C37,M22	Low Leakage
2 - 8	ACLM-4504F	100	2	-	13	0.8	1.5:1	C3	C36,C37,M22	Low Leakage
1 - 18	ACLM-4618F	100	2	-	13	2.4	2.4:1	C36	C37,M22	Low Leakage

#### NOTES:

1. Typically CW leakage is measured at mid-band with 1W input.
2. Higher power handling available. Contact the factory to discuss specific requirements.
3. Power handling is linearly derated from full power at +25°C to zero power at +150°C.

## High Power and Surface Mount Limiters

### Description

High power limiters were developed to protect sensitive receiver circuits from close proximity threats (e.g. high power radar or communication transmitters). The standard models handle up to 60W CW while the higher power models can handle up to 100W CW. All models handle 1000W peak and exhibit low insertion loss and leakage levels. The limiters are available in either Type N (male-to-male) or SMA connector versions.

Surface mount limiters were developed to offer higher power handling than our conventional limiters in a small compact design. Covering the band from 20 – 6000 MHz, these devices can limit input power levels of 10W CW over the operating temperature range of -55C to +85C. Peak power handling is rated to 1kW with a 1us pulse width and a 0.1% duty cycle. Typical leakage levels are less than 12.5dBm (measured at 1W input). These units are available in both drop-in and surface mount packages. Coaxial configurations are available upon request.

### Features

- Low Insertion Loss
- Low Leakage Power Circuit Protection
- High CW Power Handling
- Assorted Package Styles – High Power
- Hermetically Sealed Modules – Surface Mount

Frequency Range (GHz)	Part Number	Peak Input Power (KW)	CW Input Power (Watts)	Maximum Flat Leakage (CW Power) (+dBm)	Maximum Insertion Loss (dB)	Maximum VSWR	Standard Case Styles	Optional Case Styles	Limiter Type
0.0005 - 0.03	ACLM-4869	1	60	14	0.1	1.25:1	C46	C24,C25,C88,C89,M70	High Power
0.1 - 0.5	ACLM-4930	1	60	14	0.2	1.25:1	C46	C24,C25,C88,C89,M70	High Power
0.1 - 1.0	ACLM-4871	1	60	14	0.2	1.28:1	C46	C24,C25,C88,C89,M70	High Power
0.002 - 1.5	ACLM-4932	1	60	14	0.25	1.25:1	C46	C24,C25,C88,C89,M70	High Power
0.02 - 2.0	ACLM-4924	1	60	13	0.35	1.25:1	C46	C24,C25,C88,C89,M70	High Power
0.5 - 2.0	ACLM-4947	1	60	14	0.35	1.25:1	C46	C24,C25,C88,C89,M70	High Power
0.0001 - 3.0	ACLM-4896	1	60	13	0.4	1.25:1	C46	C24,C25,C88,C89,M70	High Power
2.0 - 3.0	ACLM-4828	1	60	13	0.5	1.25:1	C46	C24,C25,C88,C89,M70	High Power
0.6 - 3.1	ACLM-4891	1	60	13	0.5	1.25:1	C46	C24,C25,C88,C89,M70	High Power
2.7 - 3.1	ACLM-4852	1	60	13	0.5	1.25:1	C46	C24,C25,C88,C89,M70	High Power
3.0 - 3.7	ACLM-4905	1	60	13	0.8	1.9:1	C46	C24,C25,C88,C89,M70	High Power
2.0 - 4.0	ACLM-4943	1	60	13	1.2	2:1	C46	C24,C25,C88,C89,M70	High Power
0.02 - 3.0	ACLM-4812F	1	10	12.5	1.0	1.4:1	M17	M16, M22	Surface Mount
0.02 - 6.0	ACLM-4748F	1	10	12.5	1.0	1.4:1	M17	M16, M22	Surface Mount
2.0 - 6.0	ACLM-4805F	1	10	12.5	1.0	1.4:1	M17	M16, M22	Surface Mount
0.02 - 1.0	ACLM-4866F	1	10	12.5	0.7	1.4:1	M17	M16, M22	Surface Mount

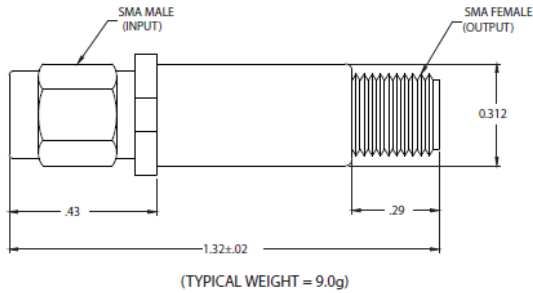
#### HIGH POWER NOTES:

1. Test conditions: Full rated power for 30 seconds.
2. Insertion loss is slightly higher for the high power versions.
3. Most models are broadband and will operate beyond the frequency ranges shown.
4. Typical leakage is 3dB below the maximum shown.
5. Power handling is linearly derated from full power at +25°C to zero power at +150°C.
6. All models require external DC blocks for proper operation.

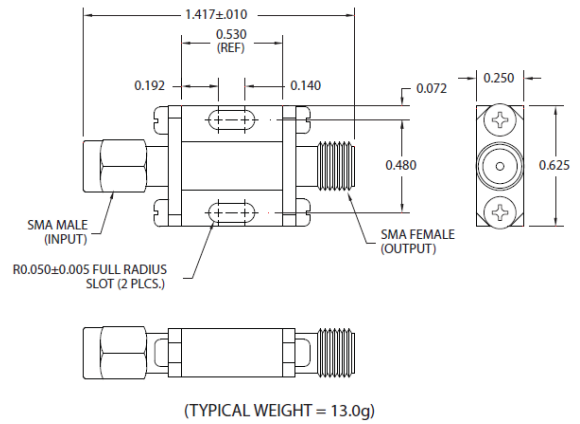
#### SURFACE MOUNT NOTES:

1. Typically CW leakage is measured at mid-band with 1W input.
2. Power handling is rated from -55°C to +85°C.

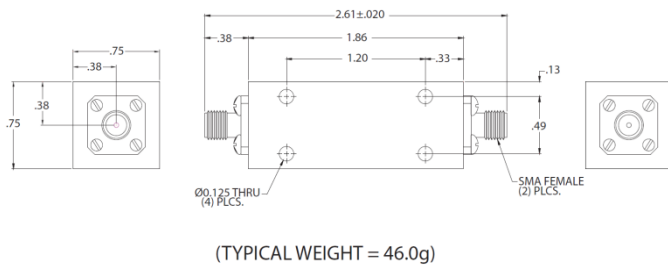
## Outline Case Style C3



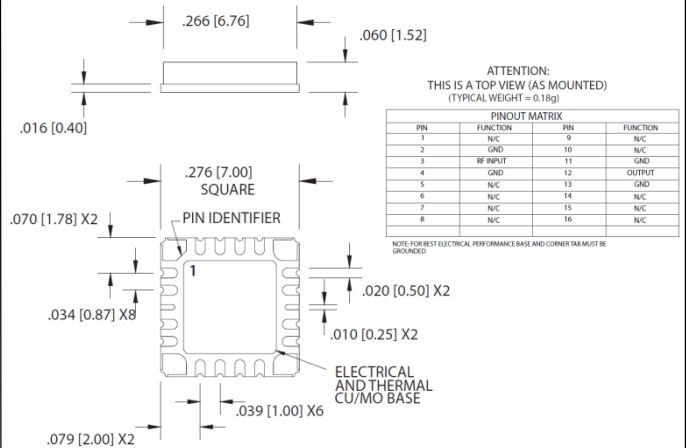
## Outline Case Style C36



## Outline Case Style C46



## Outline Case Style M17



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