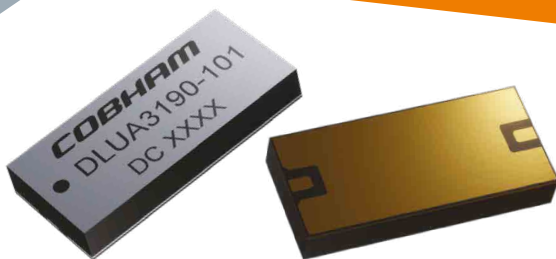


# SMD UHF Band Limiter

**DLUA3190-101**

## Features

- UHF Frequency Range: from 0.4 to 0.5GHz
- High Peak Power Handling: 58dBm
- High CW Power Handling: 52dBm
- Low Flat Leakage: 11dBm typical
- Low Insertion Loss: 0.45dB typical
- No external DC bias required
- High Reliability Silicon PIN diode process
- Integrated DC block and DC return
- DFN Package
- Compact 15mm x 7mm x 2mm SMD
- ROHS compliant



## Description

The DLUA3190-101 is a high power, surface mount, PIN diode limiter without DC bias but with internal loop power detection. The DLUA3190-101 operates from 0.4 to 0.5GHz with low Insertion Loss and provides high input power handling capability up to 630W (58dBm) long pulse mode input power (10ms, duty cycle up to 30%) with a low flat leakage and low spike leakage.

## Applications

The DLUA3190-101 limiter is ideally suited for high RF power receiver protection in commercial and military related markets. For high reliability purposes, this device includes PIN diodes manufactured with our proprietary technology based on mesa design and glass or oxide passivation. According to MIL-HDBK-217F, all discrete components have a calculated MTTF of  $3.10^6$  Hours. Taking into account the application and the environment, the complete hybrid device shows a MTTF of  $2.10^5$  Hours for grounded system applications.

**COBHAM**

# SMD UHF Band Limiter

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## Absolute Maximum Ratings @ $Z_0=50\ \Omega$

Parameter	Absolute maximum
Operating temperature	-55C, +85°C <sup>[1]</sup>
Storage temperature	-65°C, +125°C
Junction temperature (Tj)	175°C
Mounting temperature (20s Max)	260°C
Input power @ 10ms pulse typ. up to 30% duty cycle	58 dBm <sup>[1]</sup>

Note: any operation above these parameters may cause permanent damages.

[1] On infinite heatsink.

## Ordering Information

Part number	Packing
DLUA3190-101	Bulk <sup>[2]</sup>
DLUA3190-101T1	Tape & Reel per 1000

[2] For quantities other than 1000 in T&R, please see factory for conditions.

## Electrical Specification @ $Z_0=50\ \Omega$ , TA=+25°C

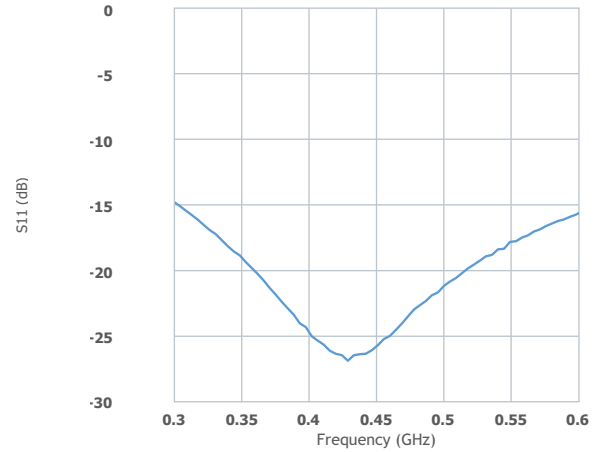
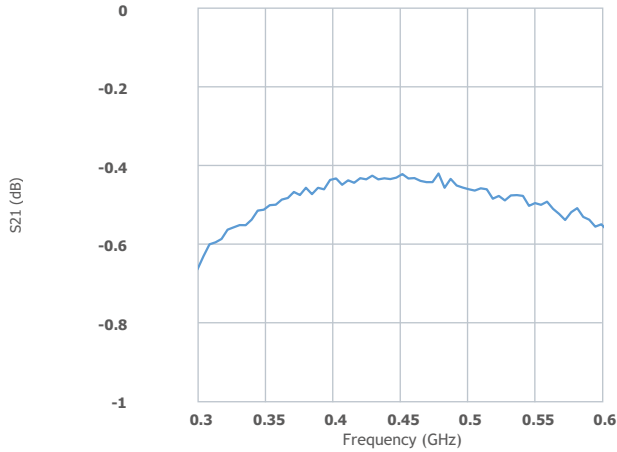
Parameter	Test Conditions	Min.	Typ.	Max.	Units
Frequency		0.4		0.5	GHz
Insertion Loss	-20dBm, 0.4 – 0.5GHz		0.45	0.6	dB
Return Loss	-20dBm, 0.4 – 0.5GHz	20	22		dB
Peak input Power	10ms pulse, 30% duty cycle, 0.45GHz			58	dBm
Flat leakage Output Power	10ms pulse, 30% duty cycle, 0.45GHz		11	14	dBm
Spike Power	Pin=58 dBm, 10ms pulse, 30% duty cycle, 0.45GHz		12	16	dBm
1dB Recovery time	Pin=58 dBm, 10ms pulse, 30% duty cycle, 0.45GHz		2.5		µs
CW Input Power	CW Power, 0.45GHz			52	dBm
Flat leakage Power	CW Power, 0.45GHz		12		dBm

# SMD UHF Band Limiter

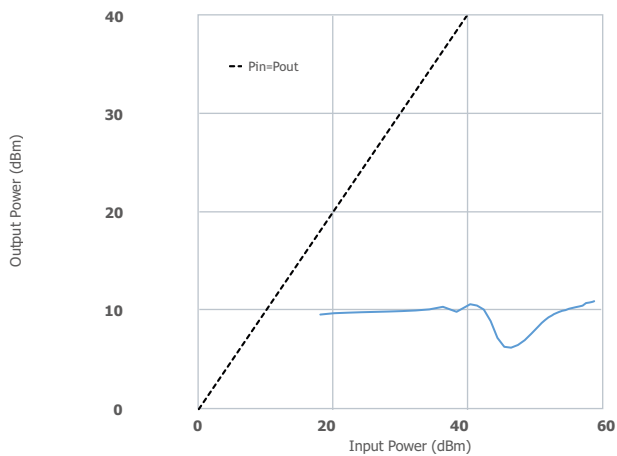
DLUA3190-101

## Typical Performances (@Z0=50 Ω, TA=+25°C)

- Insertion Loss, Input Return Loss versus Frequency

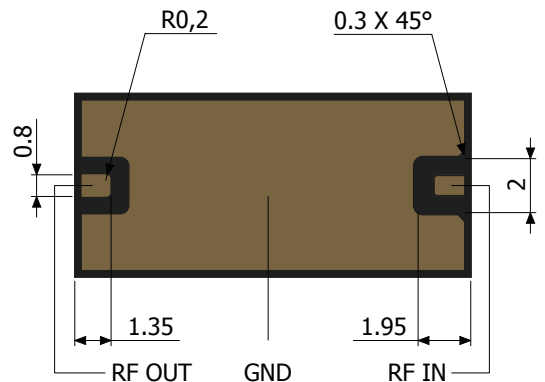
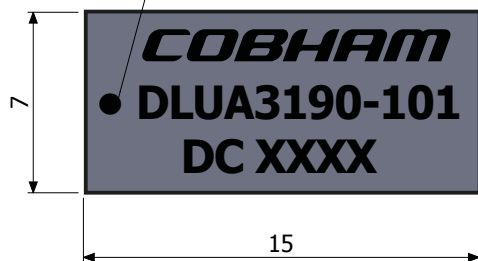


- Output Power vs. Pulsed Input Power 10ms pulse, 30% duty cycle 0.45GHz



## SMD DFN Limiter Outline Drawing

RF IN mark



Notes: Typical Dimension Unit: millimetre (mm) ±0.1mm  
Thin gold termination

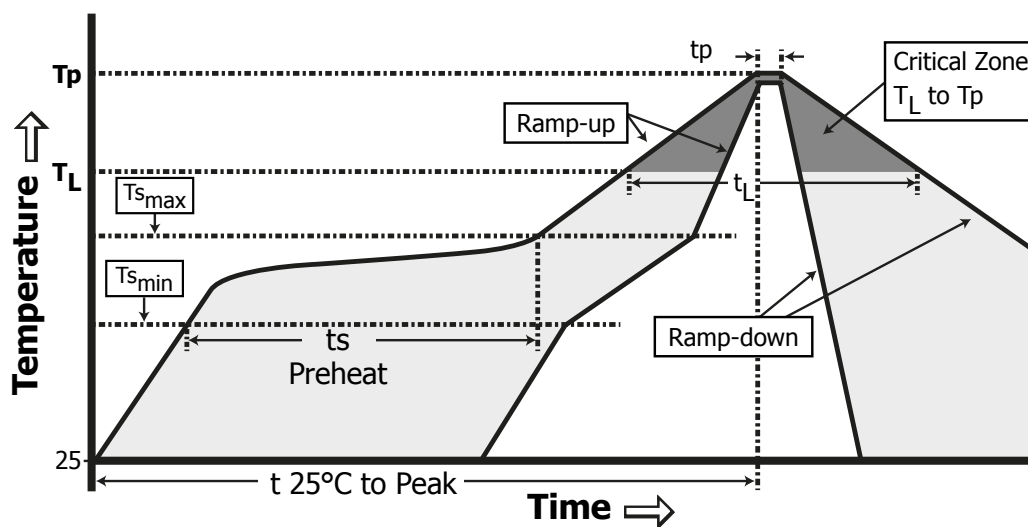
# SMD UHF Band Limiter

DLUA3190-101

## Solder Reflow Time-Temperature Profile:

Profile Feature	Sn-Pb Eutectic Assembly	Pb Free Assembly
Average Ramp-up rate ( $T_{s_{max}}$ to $T_p$ )	3°C/second max	3°C/second max
Preheat : <ul style="list-style-type: none"> <li>• Temperature Min (<math>T_{s_{min}}</math>)</li> <li>• Temperature Max (<math>T_{s_{max}}</math>)</li> <li>• Time (<math>t_{s_{min}}</math> to <math>t_{s_{max}}</math>)</li> </ul>	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above : <ul style="list-style-type: none"> <li>• Temperature (<math>T_L</math>)</li> <li>• Time (<math>t_L</math>)</li> </ul>	183°C 60-150 seconds	217°C 60-150 seconds
Peak/Classification Temperature ( $T_p$ )	225 +0 / -5°C	260 +0 / -5°C
Time within 5°C of actual Peak temperature ( $t_p$ )	10-30 seconds	20 seconds
Ramp-Down Rate	6°C/second max	6°C/second max
Time 25°C to Peak Temperature	6 minutes max	6 minutes max

Notes: All temperatures refer to topside of the package measured on the package body surface.  
Compatible with JEDEC Moisture Sensitivity Level 1 requirements.



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