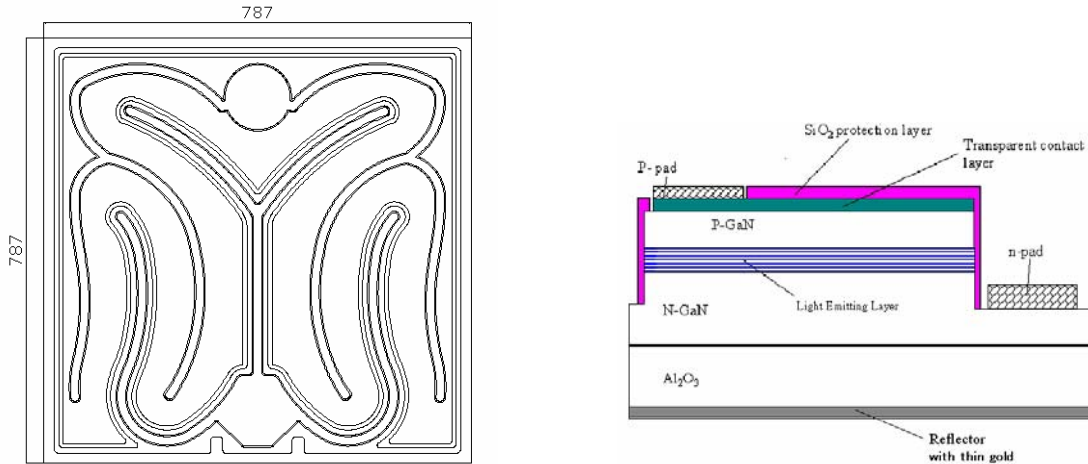




Data Sheet

MKO 31 x 31 mil
Power Chip MKO3131CXXX-M

LED Chip Diagram:



Mechanical Dimensions :

Chip size	787 (-10/+30) μm \times 787 (-10/+30) μm
Chip thickness	150 \pm 10 μm
Au Pad thickness	2.4 \pm 0.2 μm
Au Pad diameter	P: 120 μm / N: 130 μm

Features:

- Epitaxy is MOCVD grown on sapphire (0001)
- Thin gold coating on back of chip compatible with solder paste, solder perform or silver epoxy.
- Chips are 100% tested and sorted by dominant wavelength, optical power output, and forward voltage
- Chips are delivered on medium tack blue tape (20cm \pm 10mm \times 20 cm \pm 10mm)

Product applications include camera flash, torch, general illumination, LCD panel backlight, and automotive lighting

Definitions of Part Numbers, Bins, and Kits:

BridgeLux LED chips are sorted into the brightness and dominant wavelength bins shown below at $I_f=350\text{mA}$. Each blue tape will contain die from only one brightness bin and one wavelength bin. Customer orders for kit numbers MKO3131CBLL, MKO 3131CBLM and MKO3131CBLH may consist of a combination of dies from some or all bins within that kit. Additionally, all chips are sorted with forward voltage bins range from 3.0-3.5V, 3.5-3.7V and 3.7-3.9V on each tape.

[BridgeLux, Inc.](http://www.bridgelux.com)

PSW-037

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Data Sheet

**MKO 31 x 31 mil
Power Chip MKO3131CXXX-M**

MKO3131CBLL

450 to 452.5nm	MKO3131C450-8	MKO3131C450-9	MKO3131C450-A	MKO3131C450-B
452.5 to 455nm	MKO3131C452-8	MKO3131C452-9	MKO3131C452-A	MKO3131C452-B
455 to 457.5nm	MKO3131C455-8	MKO3131C455-9	MKO3131C455-A	MKO3131C455-B
457.5 to 460nm	MKO3131C457-8	MKO3131C457-9	MKO3131C457-A	MKO3131C457-B
	130 - 150 mW	150 - 175 mW	175 - 200 mW	200 - 230 mW

MKO3131CBLM

460 to 462.5nm	MKO3131C460-7	MKO3131C460-8	MKO3131C460-9	MKO3131C460-A
462.5 to 465nm	MKO3131C462-7	MKO3131C462-8	MKO3131C462-9	MKO3131C462-A
465 to 467.5nm	MKO3131C465-7	MKO3131C465-8	MKO3131C465-9	MKO3131C465-A
467.5 to 470nm	MKO3131C467-7	MKO3131C467-8	MKO3131C467-9	MKO3131C467-A
	115 - 130 mW	130 - 150 mW	150 - 175 mW	175 - 200 mW

MKO3131CBLH

470 to 472.5nm	MKO3131C470-6	MKO3131C470-7	MKO3131C470-8	MKO3131C470-9
472.5 to 475nm	MKO3131C472-6	MKO3131C472-7	MKO3131C472-8	MKO3131C472-9
475 to 477.5nm	MKO3131C475-6	MKO3131C475-7	MKO3131C475-8	MKO3131C475-9
477.5 to 480nm	MKO3131C477-6	MKO3131C477-7	MKO3131C477-8	MKO3131C477-9
	100 - 115 mW	115 - 130 mW	130 - 150 mW	150 - 175 mW

Binning @ forward current of 350 mA.

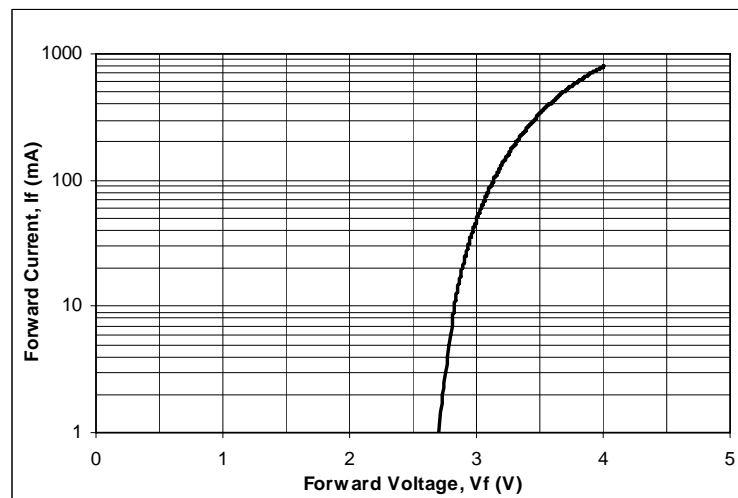


Fig. 1 Forward Current vs. Forward Voltage



Data Sheet

MKO 31 x 31 mil
Power Chip MKO3131CXXX-M

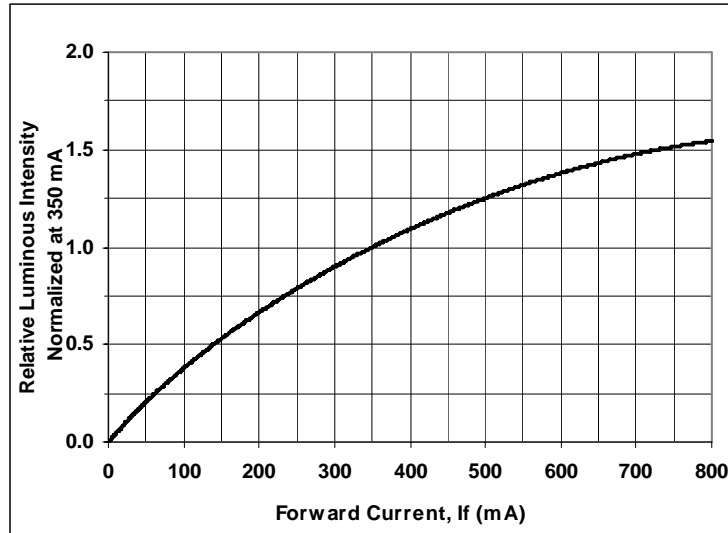


Fig. 2 Relative Luminous Intensity vs. Forward Current
(Device is tested under a probe station)

Absolute maximum ratings:

Parameter	Symbol	Condition	Rating
Forward DC Current	I_f	$T_j=125^{\circ}\text{C}$	450mA ⁽¹⁾
Reverse voltage	V_r	$T_a=25^{\circ}\text{C}$	-5V
Junction Temperature	T_j		150°C
Reverse Current	I_r	$V_r = -5\text{ V}$	<10 μA
Assembly Process Temp.			325°C(<5 sec)

⁽¹⁾maximum driving current depends on junction temperature, die attach methods/materials, and lifetime requirements of the customer's application.



Data Sheet

MKO 31 x 31 mil
Power Chip MKO3131CXXX-M

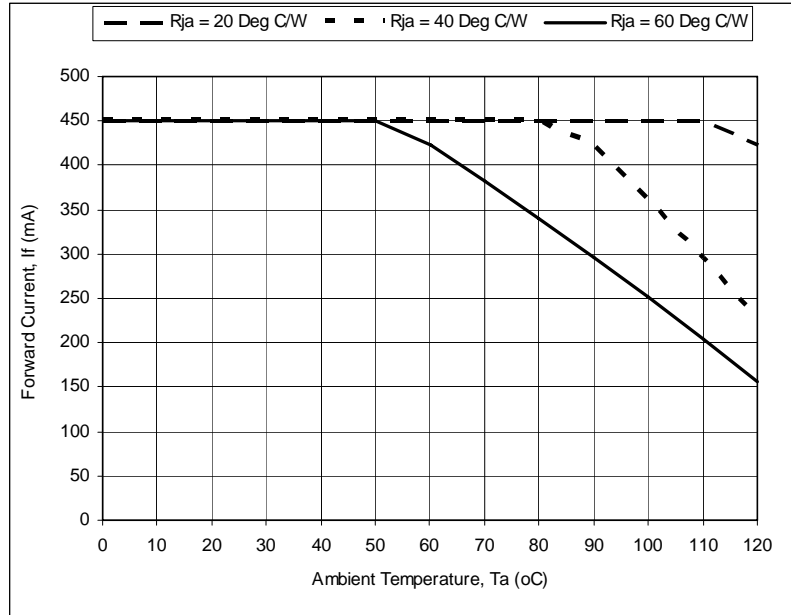


Fig. 3 Maximum derating forward DC current vs. Ambient Temperature.
Derating based on $T_j(\text{max})=150^\circ\text{C}$

Remarks:

1. BridgeLux GaN LEDs are Class 1 ESD sensitive.
2. Please consult the BridgeLux technical service team for information on how to optimize the light output of your package.
3. Brightness values are measured in an integrating sphere using Au plated TO39 headers without an encapsulate.
4. Forward voltage (V_f) is sorted into three bins from 3.0-3.5V, 3.5-3.7V and 3.7-3.9V