



## APG2C3-470



### High Power Single Chip LED

APG2C1-470 is a InGaN based, high power 470 nm single chip LED in standard emitter package for general application.

#### Specifications

- Structure: InGaN, 3W high power chip
- Peak Wavelength: 470 nm
- Optical Output: 20-30 lm
- Life Time: > 30.000 hours
- **Lead free product - RoHS compliant**



#### Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

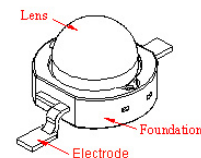
Parameter	Symbol	Value	Unit
Power Dissipation, DC	$P_D$	2.8	W
Forward Current, DC	$I_F$	700	mA
Pulsed Current (10% duty cycle, 100 $\mu\text{s}$ kHz)	$I_{FP}$	1400	mA
Reverse Voltage	$U_R$	-5	V
Operating Temperature	$T_{opr}$	-40 ... +65	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ... +100	$^\circ\text{C}$
Soldering Temperature (max. 3 s)	$T_{sol}$	260	$^\circ\text{C}$

#### Electro-Optical Characteristics ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Current	$I_F$		-	700	-	mA
Viewing Angle	$\varphi$	$I_F = 700 \text{ mA}$	-	$\pm 60$	-	deg.
Luminous Flux	$\Phi_v$	$I_F = 700 \text{ mA}$	20	-	30	lm
Peak Wavelength	$\lambda_p$	$I_F = 700 \text{ mA}$	460	-	470	nm
Forward Voltage	$U_F$	$I_F = 700 \text{ mA}$	3.2	-	4.0	V

#### Device Materials

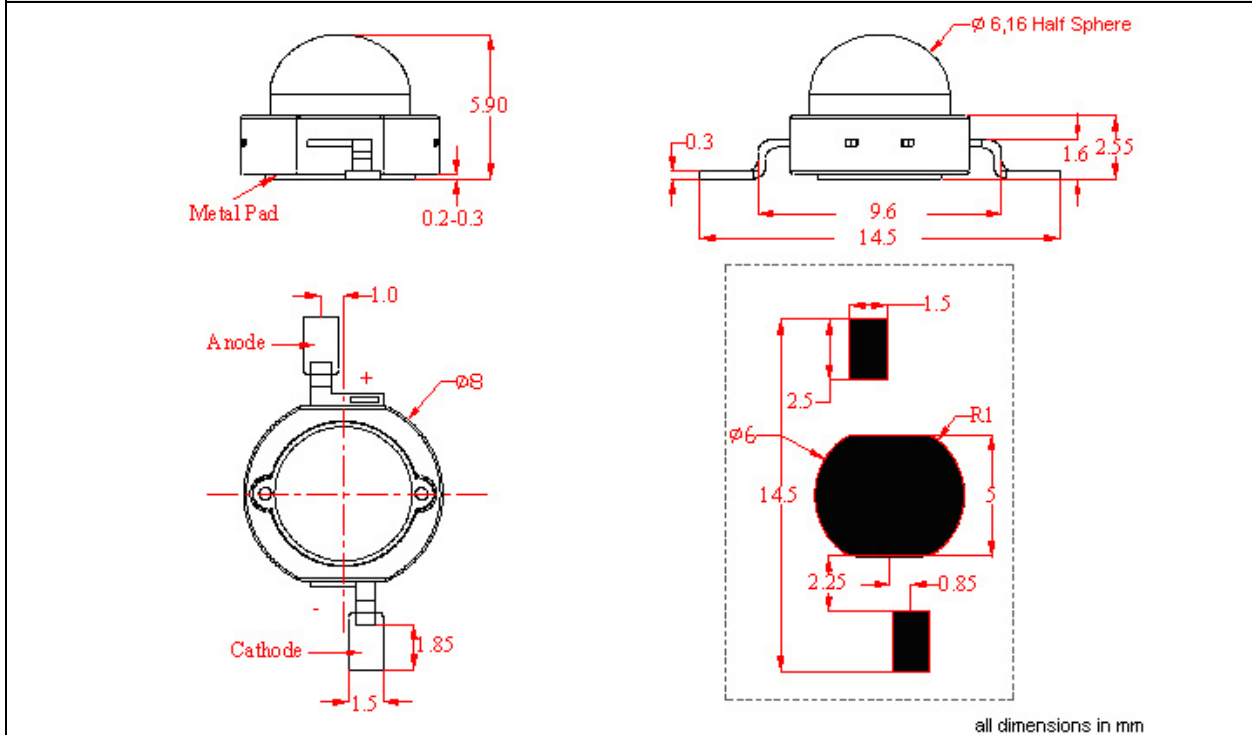
Item	Material
Foundation	Plastic
Lens	Acryl
Electrodes	AgCu
Heat Sink	AgCu





## Outline Dimensions

### Emitter:



## Static Electricity

LEDs are very sensitive to static Electricity and surge voltage. It is recommended to wear a wristband or an anti-electrostatic glove whenever handling the LEDs

All devices, equipment, and machinery that is used when handling the LEDs must be grounded properly.



## Heat Generation

It is advised to operate these LEDs at a reasonable low temperature for long lifetime and stability. High operating temperature will result in premature degradation and shortened lifetime.





## Soldering Conditions

### Reflow Soldering:

APG2C3 LEDs have a maximum storage temperature of 85°. Therefore it is not possible to use a reflow soldering process for array assembly!

### Hot Bar Soldering:

A Hot Bar Soldering process is recommended when soldering APG2C1 emitters. This process will only transfer heat to the leads and avoids overheating the emitter which will damage the device. In order to transfer sufficient heat from the hot bar to the device, following parameters must be carefully considered:

- Amount of flux
- Pressing force of solder tip
- Hot bar temperature

For the standard assembly process, following parameters should be maintained:

- Hot Bar temperature: 330 °C
- Force of Hot Bar: 40 N
- Soldering time: 1.5 s

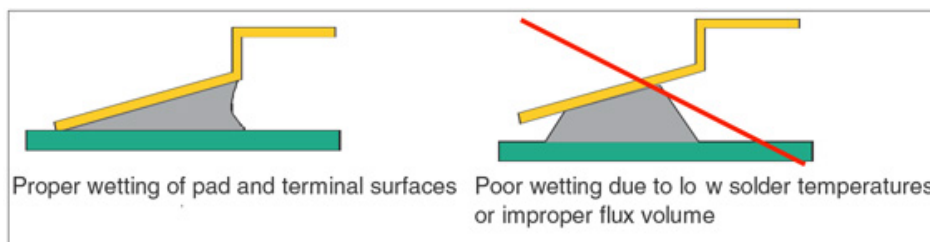
It is recommended to use a copper nickel-plated hot bar mounted to standard temperature controlled soldering equipment.

### Manual Hand Soldering:

For prototype build or small series production runs, it is possible to place and solder the emitters by hand. It is therefore recommended to maintain the following parameters:

- Solder Tip Temperature 330 °C
- Soldering time: < 1.5 s
- Junction temperature must be kept below 70 °C

A visual inspection may be used to check the quality of the solder joint



### General Soldering Precautions:

- Mechanical stress, shock and vibration must be avoided during soldering
- Only use non corrosive flux.
- Do not apply current to the device until it has cooled down to room temperature after soldering.



**NOTE**  
HIGH POWER LED  
MUST BE COOLED



## Accessories

### Collimating optics, holders, reflectors

polycarbonate optic + optic holder



metalized polycarbonate reflector

