Features

- Excellent thermal conductivity
- Excellent insulating ability
- Excellent Dimensional Stability
- Excellent Mechanical Strength
- Lower heat expansibility
- Lower operating temperature
- Increase power density
- Reduce the number of interconnects
- Extend the life of dies

OP REBEL STAR

★★★★★★★★★★

OP REBEL STAR
ALUMINUM CLAD PRINTED CIRCUIT BOARD FOR LUXEON REBEL ALLOWS OPTIMUM HEAT DISSIPATION.

★★★★★★★★★★

This is a custom MCPCB structure that further enhances heat dissipation and thus enabling the LED to last according to its life time.

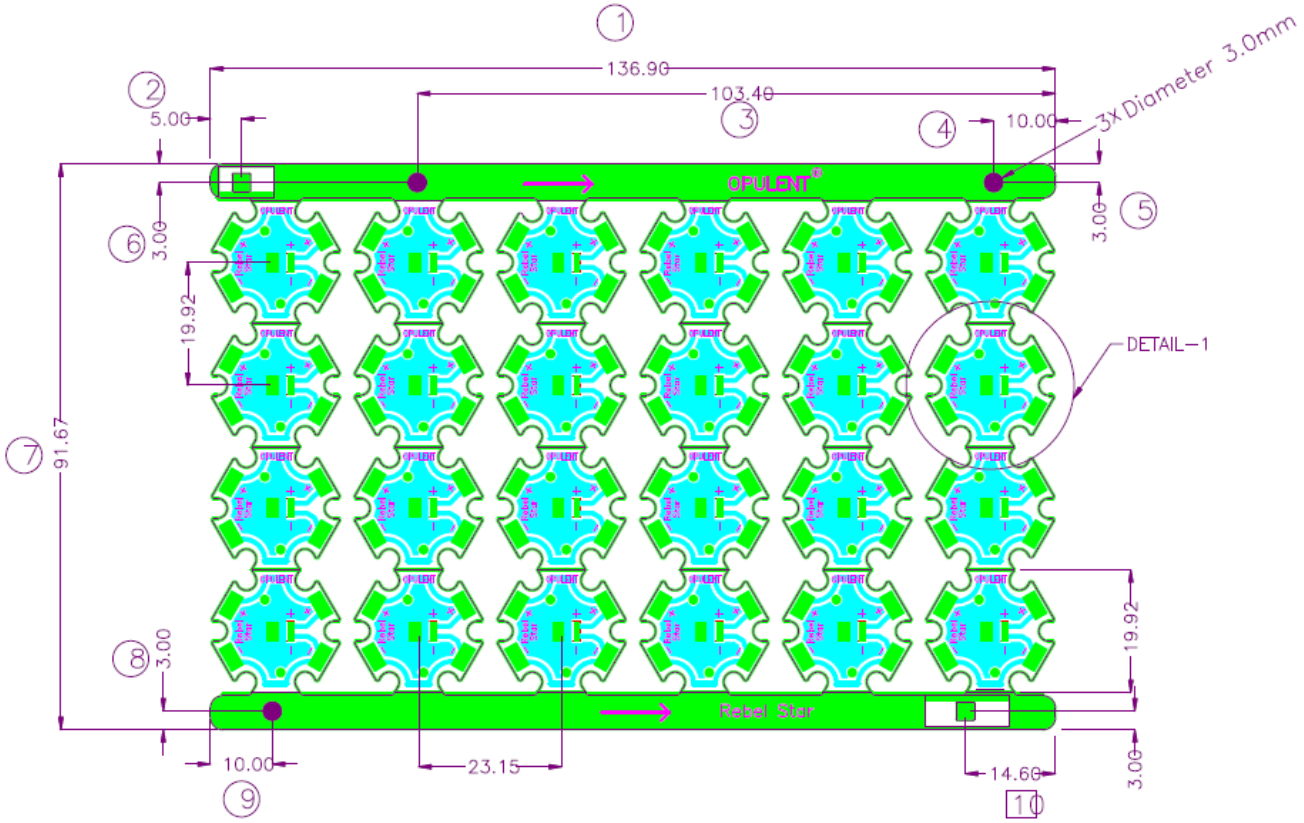
Higher thermal conductive MCPCB is also available with our special enhanced capabilities.

CONSTRUCTION OF MCPCB

The structure of the aluminum material includes copper layer, dielectric layer laminated together with aluminum base layer. Below appends summary of available range of material:

Aluminum Type	Aluminum Thickness	Copper Thickness	Dielectric Thickness
AL 5052	1.5 mm	1 oz	0.100mm

PANEL DRAWING



MATERIAL DATASHEET

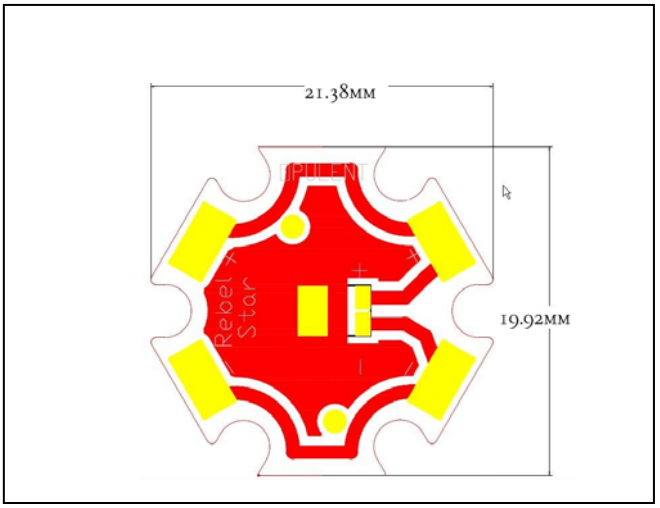
Material Datasheet - **OPT111.01.Al5215.4.0018**			
	Treatment Condition	**Value**	**Unit**
Thermal Properties			
Thermal Conductivity (Dielectric layer)		1.8	W/m-k
Thermal Resistance (Dielectric layer)		0.086	°C-in²/W
Maximum Operating Temperature	UL 746	125	°C
Glass Transition Temp (Tg)	DSC	130	°C
Coefficient of Thermal Expansion (CTE)	< Tg	21.5	$x10^{-6}$/°C
	> Tg	22.0	
Electrical Properties			
Dielectric constant	1kHz/1MHz	4.2	—
Dissipation Factor	1kHz/1MHz	0.02	—
Volume Resistivity	C-96/40/90	$1×10^{8}$	MΩ·cm
Surface Resistivity	C-96/40/90	$1×10^{7}$	MΩ
Dielectric Breakdown Voltage	A	30	KV/mm
Mechanical Properties			
Dielectric Thickness	A	100	µm
Peel Strength	A	1.05	N/mm
Chemical Properties			
Water absorption	D-24/23	0.09	%
Ratings and Durability			
UL Flammablility		94 V-0	—
Comparative Tracking Index	IEC60112	600	V
Thermal stress	10 sec @ 288 °C, 3 cycles	Pass	—
Time to delamination	5min @ 260 °C	Pass	—

* The data is based on typical values of standard production and should be considered as general information. Our company reserves the right for future changes. It is the responsibility of the user to ensure that the product complies with his requirements.

PRODUCT SPECIFICATIONS

OP REBEL STAR MCPCB

Aluminum Type:	AL5052
Aluminum Thickness:	1.5mm
Copper Thickness:	1oz
Dielectric Thickness:	0.1mm
Unit Size:	21.38 x 19.92mm (±0.1mm)
Panel Size:	136.9 x 91.67mm (24pcs/pnl)
Finishing:	OSP
Solder Mask:	Glossy Black



SOLDER PASTE

Type:	Leadfree SAC 305 paste, grade 3 or above
Lumileds Internal:	Alpha Metal OM325 grade 4
Alternative:	Alpha Metal OM338 grade 3

PACKAGING

One carton consists of 10 internal white boxes. Each white box consists of 3 trays. Each tray consists of 48 pieces.

Type of tray:	Individual slot for each OP Rebel Star
Cavity per tray:	48 pcs
Dimension of tray:	44.3cm x 17.25cm x 2.3cm
Internal White Box:	contains 3 trays with 1 cover tray (equivalent to 144pcs of OP Rebel)
Dimension of I.W.B:	44.8cm x 17.7cm x 5.5cm
Carton box:	contains 10 white boxes (equivalent to 1440pcs of OP Rebel Star)
Dimension of carton:	45.5cm x 36.4cm x 28.5cm

ABOUT OPULENT

Opulent (Asia)

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Singapore☎: +65 67498188 (Head Office)

Headquartered in Singapore, Opulent has more than 20 years experience in the manufacturing of conventional printed circuit boards (PCBs). Embarking for an international presence, Opulent has set up sales and marketing support in China, Hong Kong, Germany, Italy, United Kingdom and Malaysia.

Through innovation and R&D, Opulent created metal-clad PCBs (MCPCB) and is currently a leading designer and manufacturer of thermal solutions. Our products and works are guided by a customer centric approach that empowers us to provide value added solutions from design to assembly.

Our customers are well-known international brands whom have come to trust Opulent for our innovation, our knowledge and our commitment to attain customer satisfaction.