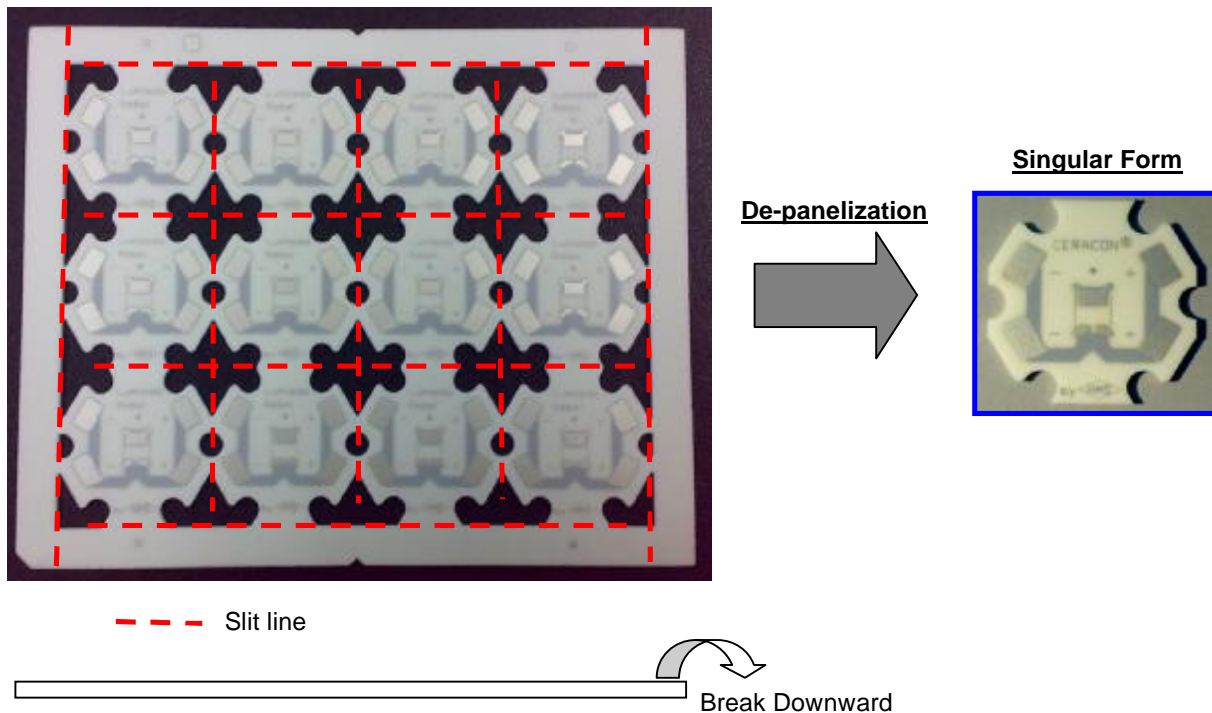


Thermal Substrate - Ceracon® & Tricon®

Application Notes

1) DE-PANELIZATION

For Ceracon substrate, the slit line is ONLY on the pattern side whereas Tricon is on the both sides. Use the simple holding jig to de-panelize the dummy portion in downward direction. Care should be taken to prevent any sharp edge injured during or after the de-panelization process.



2). BARE THERMAL SUBSTRATE (PCB) SHELF-LIFE

Shelf life period of 90 days after delivery of bare boards for solderability with recommended storage conditions as follows with original package.

Storage environmental condition:

- a) Temperature : No more than 28°C
- b) Humidity : No more than 75%

Above conditions are based on HMS bare MCPCB within 3 months during shipment.

3). MOISTURE SENSITIVITY

Thermal substrate is shipped in sealed, if the substrates are exposed to moist environments after opening the original packaging but before soldering, poor solderability of the substrates may occur during the soldering operation. The following derating table 1 defines the maximum exposure time (in days) for the substrates with the below temperature and humidity conditions.

Temperature	Relative Humidity (RH)				
	50%	60%	70%	80%	90%
30°C	4	3	1	1	1
25°C	5	4	2	1	1

Table 1

3). REFLOW SOLDERING

Thermal substrate is designed to be reflow soldered with LED. Reflow soldering may be done by a reflow oven or hotplate and follow the reflow soldering profile which was recommended by LED manufacturer. Thermal substrate is good in thermal conductivity, it is advisable to follow the lowest soldering profile temperature and time from the LED manufacturer.



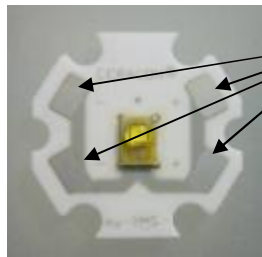
Reflow Oven



Hot plate

Note: this guideline may not apply to all application, it depends on the type of solder paste used and configuration of reflow soldering equipment.

Solder paste population - The solder paste ONLY apply on the led pad and coverage percentage is refer to individual led specification/datasheet respectively.



No need to apply solder paste on the wire solder pad during solder paste population

Note: The thermal substrates is ONLY allow one time reflow. No recycle thermal substrate is allow to use for this purpose.

4). MANUAL SOLDERING - Wire/Cable ON THE SILVER PAD

Soldering Tip Temperature: 360~400°C Max (Depend on the board size)

Soldering Time: 3 sec. Max (one time only).

Wire pre-tinned: either by dipping into solder pot or soldering iron.

5). ASSEMBLED MODULE SHELF-LIFE

Shelf life period of 30days after delivery based on the following conditions:

- No additional other reflow or heat cycle
- Storage Conditions: Temperature no more than 28°C & humidity no more than 75%
- Correct & Proper Usage: Correct LED junction temperature is maintained during operations
- Other Parameters: Drive current, heat sinking, ambient temperature, light engine, ESD, EMI, RFI are well within LED specified applications.
- Functionality of Components, i.e. LED is warranted by LED chip manufacturer

Note: The assembled module without/has not solder with wire shall keep in the proper seal to prevent any exposure to moist environment. Refer to Table 1 for the moisture sensitivity.

Remark: The information above is subject to change without any notice.

