



APPLICATION NOTE

No LAN 070419 Rev 01

L01xGAXx, S01xGAXx, OVTL01xGAXx & OVTS01xGAXx Series Products

General Precautions and Handling Instructions

All LED products are susceptible to accidental damage during handling, and in operation. This may be caused by Electrostatic Discharge(ESD), by reverse current, by overheating or from mechanical damage. The following guidelines are provided to minimise the possibility of damage to any device.

ESD

- LEDs are shipped in antistatic packaging materials
- All handling equipment must be effectively grounded
- Unpack LEDs only in ESD protected environments
- Enforce directives to ensure that all personnel who handle LEDs are connected to ESD protection

Reverse Current

- Avoid situations where LEDs may become reverse biased
- Pre-set PSU and test system outputs to voltages below the reverse breakdown value
- Use protective diodes within LED assemblies to prevent the flow of reverse current, wherever this is possible

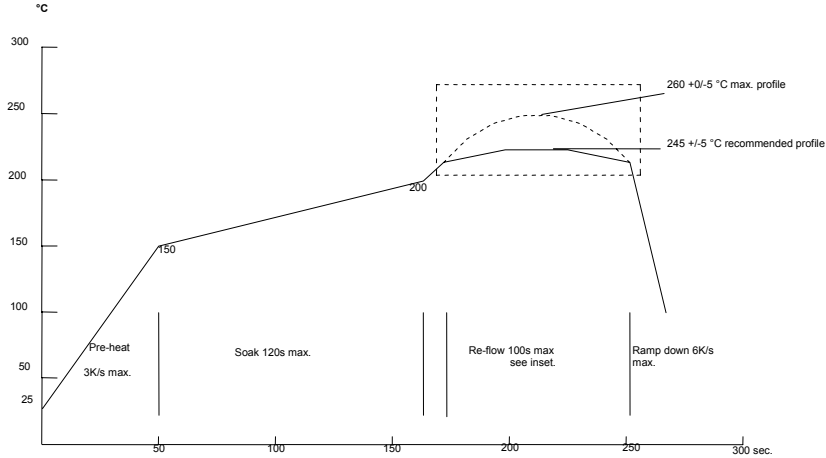
Overheating

- All LEDs require a thermal path to conduct heat away from the semiconductor junction
- Never operate Hi-Power LEDs at rated current without providing adequate thermal relief
- Design circuits using current limiting or constant current techniques
- When operating LEDs in a parallel configuration take measures to ensure that the circuit current is divided evenly between the various circuit paths
- Make adequate allowance for abnormally high ambient temperatures
- Apply generally conservative rules to thermal design and total power input

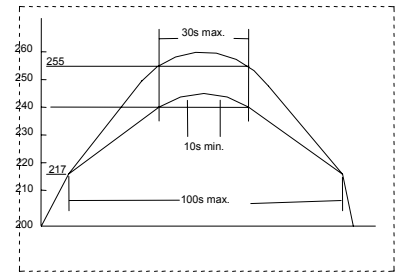
Mechanical

- Avoid manual handling of Lednium Cup Series Products wherever possible
- Where manual handling cannot be avoided, forceps tools should only contact the cathode leads
- Avoid contact with the moulded portions of the package, even where vacuum equipment is used
- Lednium Cup Products are over moulded with Silicone material which has low mechanical strength. Excess force can damage the package and/or the fragile LED assembly within.
- Limit the force applied by auto 'pick & place' equipment to minimum(less than 20gms) for both pick-up and put-down operations
- Use maximum size pick-up tools to minimise localised forces.
- Pick-up tube should be soft material with an internal diameter in the range 4.2 – 4.5mm.
- Where manual pick-up is mandatory, the cautious use of vacuum pens can be acceptable

Recommended reflow Solder Profile



Reflow Soldering Profile



Additional precaution

Some components of Lednium LED products are silver plated.

Silver is prone to discolouration in some circumstances, and is particularly susceptible to aggressive corrosion in the presence of sulphur.

It is advisable to avoid the use of sulphurous components, such as natural rubber, in assemblies which contain silvered surfaces.