

## **LED Driver Protection**

LED Drivers from Thomas Research Products include circuits to protect themselves from situations that could be damaging.

| Protection   |                       | Standard Series<br>(LED / LEG / PLED)   | Value Series<br>(TRC / TRV / TSC / TSV / VLED)  | M Series<br>(LEDxxW-xx-Cxxxx-M)   |
|--|-----------------------|---|---|---|
| Output Over-Voltage  Protects driver if a light engine is connected that requires more voltage than driver can deliver | Which models have it? | All have overvoltage protection   | All have overvoltage protection   | All have overvoltage protection   |
|  | How does it work?     | OVP limits the output voltage   | Driver will shut down if an over-voltage condition is sensed  | OVP limits the output voltage   |
|  | Does it self-reset?   | All models self-reset   | No; Cycle input voltage to reset<br>the driver  | 12W, 50W, 60W CC, 75W CC:     Cycle input voltage to reset     All other models self-reset  |
| Output Over-Current Protects driver if a light engine is connected that requires more current than driver can deliver  | Which models have it? | All have overcurrent protection   | All have overcurrent protection   | All have overcurrent protection   |
|  | How does it work?     | •12W, 17W, 20W, 50W Rev A1.1: Output current is reduced to zero, driver self-resets, and output current is restored. Note: If fault is not removed, the driver's output will flash as it continues to shut down the output and reset. • All other models: Driver shuts down, cycle power to reset               | Output current is reduced to zero, driver self-resets, and output current is restored. Note: If fault is not removed, the driver's output will flash as it continues to shut down the output and reset. | Output current is reduced to zero, driver self-resets, and output current is restored. Note: If fault is not removed, the driver's output will flash as it continues to shut down the output and reset. |
|  | Does it self-reset?   | 12W, 17W, 20W:     Driver self-resets     All others:     Cycle input voltage to reset  | Yes   | Yes   |
| Short-Circuit  | Which models have it? | All have short circuit protection   | All have short circuit protection   | All have short circuit protection   |
| Protects driver if someone shorts output leads   | How does it work?     | 12W, 17W, 20W, 50W Rev A1.1:     Output current is reduced to zero, driver self-resets, and output current is restored.     Note: If fault is not removed, the driver's output will flash as it continues to shut down the output and reset.      All other models:     Driver shuts down, cycle power to reset | Output current is reduced to zero, driver self-resets, and output current is restored. Note: If fault is not removed, the driver's output will flash as it continues to shut down the output and reset. | Output current is reduced to zero, driver self-resets, and output current is restored. Note: If fault is not removed, the driver's output will flash as it continues to shut down the output and reset. |
|  | Does it self-reset?   | 12W, 17W, 20W:     Driver self-resets     All others:     Cycle input voltage to reset  | Yes   | Yes   |
| Over-Temperature Shuts down driver if a specific temperature is exceeded, usually 105°C-115°C                          | Which models have it? | • LED25W-HL,<br>LED40W-HL   | All have over-temp protection,<br>EXCEPT: TRC-025, TRV-035,<br>TRC-040, TRx-050, VLED25W  | All have over-temp protection,<br>EXCEPT: 12W, 40W  |
|  | How does it work?     | Driver shuts down if an over-<br>temperature condition is sensed<br>(Tc=105°C)  | Driver shuts down if an over-<br>temp condition is sensed,<br>EXCEPT: TRC-152Q, which<br>decreases output to half current   | Driver is shut down if an over-<br>temperature condition is sensed  |
|  | Does it self-reset?   | All models self-reset when case<br>temperature falls below 65°C   | All models self-reset when case<br>temp falls below 75°C  | 50W, 60W CC, 75W CC:     Cycle input voltage to reset     All other models self-reset   |