



# Thomas Research Products

SSL Solutions Faster Than The Speed Of Light®

## TRC-025 Series—Fixed Output and Dimmable 25W Switch Mode LED Drivers Constant Current, Long Life

Total Power: 25 Watts  
Input Voltage: 120-277 Vac, 50/60 Hz  
Outputs: Single from 4-72 Vdc  
High Efficiency  
High Power Factor  
Indoor or Outdoor Applications, IP66  
Input and Output Protection

### Electrical Specifications

|                      |                                                                            |
|----------------------|----------------------------------------------------------------------------|
| Input Voltage Range: | 120 - 277 Nom. Vac (90 - 305 V Min/Max)                                    |
| Frequency:           | 50/60 Hz Nom. (47-63 Hz Min/Max)                                           |
| Power Factor:        | >0.90 @ full load, 100V through 277V                                       |
| Input Current:       | 0.32 A @ 100Vac, 0.15 A @ 220Vac                                           |
| Inrush Current:      | 60.0 Amps @ 230Vac, 25°C Cold Start                                        |
| Efficiency           | 85-85% typical @ maximum load                                              |
| Maximum Power:       | 25W                                                                        |
| Line Regulation:     | ± 3%                                                                       |
| Load Regulation:     | ± 5%                                                                       |
| Turn-on Time Delay:  | 3S                                                                         |
| Output Protection:   | Over-Voltage, Over-Current,<br>Short Circuit Protection with Auto Recovery |

### Environmental Specifications

|                        |                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------|
| Operating Temperature: | -20°C to +70°C                                                                          |
| Maximum Case Temp.     | 89°C                                                                                    |
| Storage Temperature:   | -40°C to +85°C                                                                          |
| Humidity:              | 10% to 100%                                                                             |
| Cooling:               | Convection                                                                              |
| MTBF:                  | 484,000 Hours @ 25°C, 80% load, 110Vac input<br>on 2080 mA output model (MIL-HDBK-217F) |
| Lifetime:              | 79,000 Hours @ 45°C, 80% load, 110Vac input<br>on 2080 mA output model                  |
| Weight:                | 0.4 lbs.                                                                                |



### Constant Current Versions - Product Specifications

| Model Number  | Output Current (mA) | Output Voltage Range (Vdc) | Max. Output Power (W) | Typical Efficiency |
|---------------|---------------------|----------------------------|-----------------------|--------------------|
| TRC-025S035PS | 350                 | 24-72                      | 25                    | 84%                |
| TRC-025S045PS | 450                 | 19-56                      | 25                    | 84%                |
| TRC-025S062PS | 620                 | 13-40                      | 25                    | 83%                |
| TRC-025S070PS | 700                 | 12-36                      | 25                    | 83%                |
| TRC-025S105PS | 1050                | 8-24                       | 25                    | 82%                |
| TRC-025S140PS | 1400                | 6-18                       | 25                    | 81%                |
| TRC-025S175PS | 1750                | 5-14                       | 25                    | 81%                |
| TRC-025S208PS | 2080                | 4-12                       | 25                    | 80%                |

### Dimmable Versions - Product Specifications

| Model Number  | Output Current (mA) | Output Voltage Range (Vdc) | Max. Output Power (W) | Typical Efficiency |
|---------------|---------------------|----------------------------|-----------------------|--------------------|
| TRC-025S035DS | 350                 | 24-72                      | 25                    | 84%                |
| TRC-025S045DS | 450                 | 19-56                      | 25                    | 84%                |
| TRC-025S062DS | 620                 | 13-40                      | 25                    | 83%                |
| TRC-025S070DS | 700                 | 12-36                      | 25                    | 83%                |
| TRC-025S105DS | 1050                | 8-24                       | 25                    | 82%                |
| TRC-025S140DS | 1400                | 6-18                       | 25                    | 81%                |
| TRC-025S175DS | 1750                | 5-14                       | 25                    | 81%                |
| TRC-025S208DS | 2080                | 4-12                       | 25                    | 80%                |

Class 2: US/Canada US Only



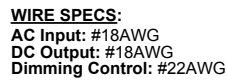
#### Note:

LED drivers are designed and intended to operate LED loads only. Non-LED loading may be outside the specified design limits of our LED driver, and therefore cannot be covered by any warranty. If you desire to use our LED drivers to operate non-LED loads please contact us to discuss compatibility. Specifications subject to change without notice.

10-23-13



**Pg 2 of 3**



## Safety and EMC Compliance

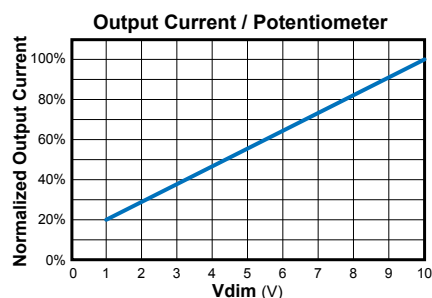
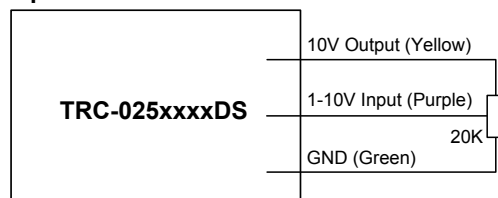


### Dimming Control Details

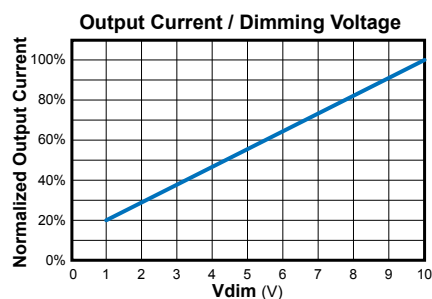
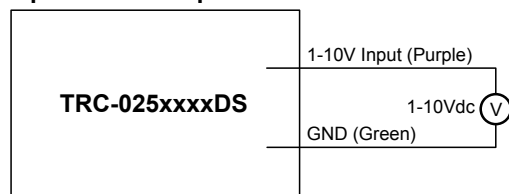
| Parameters                                      | Minimum | Typical | Maximum |
|-------------------------------------------------|---------|---------|---------|
| 10V output voltage                              | 9.8 V   | 10 V    | 10.2 V  |
| 10V output source current                       | -10 mA  | —       | 2 mA    |
| Absolute maximum voltage on the 0-10V input pin | -2 V    | —       | 15 V    |
| Source current on 0-10V input pin               | 0 mA    | —       | 1 mA    |

The dimmer control is operated from either a potentiometer or from an input signal of 1 – 10 Vdc. Recommended implementations are provided below.

#### Option 1 - Potentiometer Control



#### Option 2 - DC Input



#### Notes:

1. When the dimming voltage is decreased to less than 1V, the output current will decrease to approximately 20%Ir; but the connected LEDs may flicker. It is strongly recommended to keep the dimming voltage greater than 1V in the end-use application.
2. Do not connect the GND of dimming to the output or to earth ground; otherwise the LED driver will not work normally.