MSLD63D

Solar Lantern LED Driver and SMF Battery Charger with 3 stage Dimming, mobile phone charging

|  |  |
| --- | --- |
| naming.png | **Product Features**   * High Efficiency * Constant Current LED driver * Three Stage Dimming – (300mA, 200 mA, 100 mA) * Input – 6V SMF/Lead Acid(5.25V to 6.5V) * 6V SMF/Lead Acid battery charger. * Output Voltage: Boost configuration * High and Low Voltage Cutoff – 5.25V and 6.5V * Energy Efficient – no power consumption during off mode * Battery Over Voltage Protection * Battery Reverse Charging Protection * Mobile Charger(O/P 5.5V, 350mA)   **Application**  MSLD63D is a high efficiency LED driver with SMF/Lead Acid battery Charging for 6V SMF battery and efficient three stage Dimming Control.  Its high/low voltage control, state of art protection circuit for Battery Reverse Charging and Battery Over Voltage.  This is best suited for designing of Solar Lanterns, powered with 6V SMF battery. It can drive LED string with output power .81W to 3.33W.  For best efficiency use LED strips in series each having forward voltage,Vf(Typ) 3.2 V |

Product Program

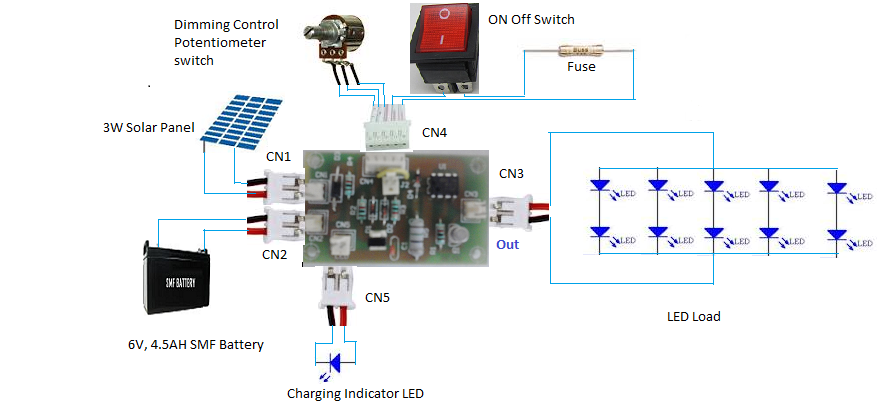
|  |  |
| --- | --- |
| Input Voltage | 6V SMF/Lead Acid battery |
| Output Current | As per dimming stage selected |
| Output Voltage | As per dimming stage |
| Output Power | 0.81W to 3.33W |
| Dimming Control | Three Stage Dimming  Low – 100 mA current on load  Medium – 200 mA current on load  High – 300 mA current on load |

Connectors

MSLD63D is designed for solder free, easy installation. Design includes following connectors

1. CN4: 2 pin 2.5 mm Berge Pin male connector for connecting Solar Panel
2. CN3: 2 pin 2.5 mm Berge Pin male connector for connecting Battery
3. CN2: 2 pin relimate male connector for connecting LED string
4. CN5: 5 pin 2.5 mm Berge Pin male connector for connecting battery charging indicator led, low/high cutoff indicator led
5. CN6: 2 pin 2.5 mm Berge Pin male connector for connecting LED charging indicator
6. CN1:

Connector Type: Berge Pin 2.5mm male



PCB Size/ Quality

MSLD6D is designed considering

* Compact PCB to fit properly in lantern designs
* Components sufficiently spaced for heat dissipation
* PCB is designed with high quality FR-3 material
* Connectors mounted on PCB are 2 pin and 5 pin berge pin make connector of 2.54 mm pitch
* PCB size is 2.5 inch \* 3 inch

Mobile Charging

Separate small PCB for mobile charger is available. If required Mobile Charger can be integrated in same PCB

Mobile Charger output:

Voltage: 5 Volt

Current: upto 300 mA

Testing Details

**Test Setup**

MSLD63D is tested as Solar Lantern with following

|  |  |  |
| --- | --- | --- |
| LED Load | No of LED | 3 |
| Manufacturer | Osram |
| Model | LUW W5AM |
| Forward Current Rating | 350 mA |
| Forward Voltage | Min:2.7V Typ: 3.2V, Max: 3.7V |
| View Angle | 170 degree |
| Luminance | 6.1 Candella |
| Battery | Manufacturer | Amptek |
| Type | SMF(Rechargeable) |
| Nominal Voltage | 6 |
| C20 Rating | 4.5AH |
| Photo Voltaic Panel | Manufacturer | Maharishi Solar Technology |
| Model | MS B06 |
| Max Power | 3 Watt |
| Voc | 10.5 V |
| Isc | 0.44 amps |
| Vmp | 8.2 V |
| Imp | 0.36 amps |
| LED hosting | Cover | Two transparent glass |
| Outer Glass | XXXX |
| Inner Glass | XXXX |
| LED Strips | 3 |
| No of LED per strip | 1 |
| LED electrical connections | 3 LEDs in strips |

**Test Results**

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Name** | **Test Description** | **Test Results** | |
| Lux Measurement | Lux is measurement of illuminance. It measures luminous flux per unit area. Lux is measured in “Power Stage High” | |  |  |  | | --- | --- | --- | | **Distance** | **Horizontal** | **Vertical** | | 1 feet | 48 | 120 | | 2 feet | 8 | 44 | | 3 feet | 4 | 24 | | 4 feet | 2 | 12 | | 5 feet | 1 | 9 | | |
| Duty Cycle | Average hours lantern should operate in a day, under average insolation of 5.5 kWh/sqm on a horizontal surface. | Power Stage Low |  |
| Power Stage Medium |  |
| Power Stage High |  |
| Discharge Time | Discharge time of fully charged battery by continuous operation of Lantern | Power Stage Low |  |
| Power Stage Medium |  |
| Power Stage High |  |
| Charging Time | Time required to fully charge battery using solar panel with following insolation | |  |  | | --- | --- | | **Insolation** | **Time to charge** | | **-** | **-** | | **-** | **-** | | |

About Moxie Devices

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Our focus is to provide environmentally conscious solutions by creating products that are designed to meet unique customer needs and protect the environment for today and for the future.Moxie Devices is a professionally managed company engaged in the designing, manufacturing, distribution and export of Solar energy and LED based Products for various applications. Our products exemplify TQI (Technology, Quality and Innovation). Our products are known for their enormous energy efficiency and reliable performance

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