

SPECIFICATION

SS-20U Series LED Driver

Model: SS-20U-XX

Description: 20W LED DRIVER

Rev.: V02

Release Date: 2017-10-10

SHENZHEN SOSEN ELECTRONICS CO.,LTD

A3 Building, Gonghe Fourth Industrial Area, Shajing Street, Baoan District
Shenzhen, China 518104

Features

- Efficiency up to 87%
- IP67 rated; Suitable for Dry, Damp and Wet Locations
- Protections: SCP, OVP
- Metal case with full potted for hazardous scenarios
- Surge Protection: L/N-PE: 6kV, L-N: 4kV
- Class 2
- 5 years warranty



Description

SS-20U series are constant current LED driver with universal input voltage 90-305Vac and high power factor. They are specifically designed for LED luminaires such as wallpacks, small street lights, tunnel lights and area lights with low standby power, high efficiency, compact housing and good thermal management, which greatly enhance the reliability and lifespan. Comprehensive protections, including Over Voltage Protection, Short Circuit Protection ensure proper functioning.

Model List

| Model | O/P Voltage | O/P Current | Max. O/P Power | O/P Current Tolerance | THD (Typ.) | PF (Typ.) | Efficiency (Typ.) |
|-----------|-------------|-------------|----------------|-----------------------|------------|-----------|-------------------|
| SS-20U-42 | 24-32V | 0.7A | 22W | ±7% | 8% | 0.96 | 86% |
| | 24-36V | 0.6A | | | | | |
| | 24-42V | 0.5A | | | | | |
| SS-20U-54 | 32-44V | 0.5A | 22W | ±7% | 8% | 0.96 | 87% |
| | 32-50V | 0.4A | | | | | |
| | 32-54V | 0.35A | | | | | |

Note: Default Tested at 230Vac, full load, Ta 25°C.

Input Characteristics

| Parameter | Min | Typ. | Max | Remarks |
|-----------------------|---------|------|---------|-------------------------------|
| Rated AC input range | 100 Vac | | 277 Vac | |
| AC input range | 90 Vac | | 305 Vac | |
| Input frequency range | 47Hz | | 63Hz | |
| Max input current | | | 0.3A | 90Vac, full load |
| Inrush current | | | 40A | 230Vac/50Hz, cold start |
| No load power | | 0.5W | 1W | 277Vac/50Hz, No load |
| Power factor | 0.95 | 0.96 | | 230Vac/50Hz, full load |
| | 0.88 | | | 100-277Vac/50Hz, 70-100% Load |
| THD | | 8% | 10% | 230Vac/50Hz, full Load |
| | | | 20% | 100-277Vac/50Hz, 70-100% Load |

Output Characteristics

| Parameter | Min | Typ. | Max | Remarks |
|-------------------------------|-----------|-------|-------|--------------------------------------|
| Output voltage range | SS-20U-42 | 24V | 42V | Power derated @ 24-32Vdc, see Fig. 1 |
| | SS-20U-54 | 32V | 54V | Power derated @ 32-44Vdc, see Fig. 1 |
| Rated output voltage | SS-20U-42 | 32V | 42V | Po=Vo*Io=22W, full load, see Fig. 1 |
| | SS-20U-54 | 44V | 54V | |
| Rated output current | SS-20U-42 | | 0.7A | Output 24-32V |
| | | | 0.6A | Output 24-36V |
| | | | 0.5A | Output 24-42V |
| | SS-20U-54 | | 0.5A | Output 32-44V |
| | | | 0.4A | Output 32-50V |
| | | | 0.35A | Output 32-54V |
| No load voltage | SS-20U-42 | | 49V | |
| | SS-20U-54 | | 59V | |
| Efficiency @230Vac | SS-20U-42 | 84.5% | 86% | Output 42V/0.5A, see Fig. 5 |
| | SS-20U-54 | 85.5% | 87% | Output 54V/0.35A, see Fig. 5 |
| Output current tolerance | -7% | | +7% | |
| Output Voltage Ripple(PK-PK) | | 10% | 20% | Full load |
| Output current ripple (PK-PK) | | 100% | 200% | Full load |
| Start-up current overshoot | | | 10% | |
| Start-up time | | 1S | 2S | 230Vac |
| Line Regulation | -3% | | +3% | full load |
| Load Regulation | -3% | | +3% | |



Other Characteristics

| Parameter | Min | Typ. | Max | Remarks |
|--------------------------|--|------------|-----------|---|
| Short Circuit Protection | Driver will not damaged with short-circuit power <1W | | | Hiccup mode |
| Life time | | 55,000hrs | | 230Vac, full load, Tc 75°C, See Fig. 6 |
| MTBF | | 200,000hrs | | 230Vac, full load, Ta= 25°C, (MIL-HDBK-217F) |
| Temperature Coefficient | -0.03%/°C | | +0.03%/°C | Tc: 0°C ~ 90°C |
| Tc | | | 90°C | |
| Warranty | | 5 years | | Tc: 75°C |
| Net Weight | | 280g | | |
| Dimension | 116mm*46.5mm*31.5mm | | | L x W x H |

NOTE: All the parameters above are tested Ta 25°C, unless specified.

Environmental Requirements

| Parameter | Min | Typ. | Max | Remarks |
|-----------------------|-------------|------|--------|------------|
| Operating Temperature | -40°C | 25°C | +60°C | See Fig. 2 |
| Storage Temperature | -40°C | 25°C | +85°C | |
| Operation Humidity | 10%RH | | 90%RH | |
| Storage Humidity | 5%RH | | 95%RH | |
| Altitude | -65m | | 4,000m | |
| Cooling Method | Air Cooling | | | |

Safety and EMI/EMS Standards

| Certification | Standard | Status | Remark |
|---------------|--|--------|--------|
| UL/CUL | UL8750 | √ | |
| TUV | EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 EN62493:2015 | √ | |
| SAA | AS/NZS61347.2.13 | √ | |
| CCC | GB 19510.14-2009 | √ | |
| CE | EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 | √ | |

| Item | Standard | Remark |
|-----------------------|---------------|---------------------|
| Insulation strength | Input-output | 3200Vac/5mA Max/60s |
| | Primary-Earth | 1600Vac/5mA Max/60s |
| | Sec.- Earth | 1000Vac/5mA Max/60s |
| Insulation resistance | Input-output | ≥10MΩ |

| | | |
|-----------------|---------|------------|
| Ground resistor | ≤0.1Ω | 25A/1min |
| Leakage current | ≤0.75mA | Vin=277Vac |

| Item | Criterion | Remark |
|----------------------------|----------------------|---|
| Conduction Emission | EN55015:2013+A1:2015 | |
| Radiation Emission | EN55015:2013+A1:2015 | |
| Harmonic Current Emissions | IEC/EN 61000-3-2 | Class C |
| Surge | IEC/EN61000-4-5 | Difference mode 4kV, Common mode 6kV Criterion B |

Performance Curves

Fig. 1 O/P Voltage VS Output Current

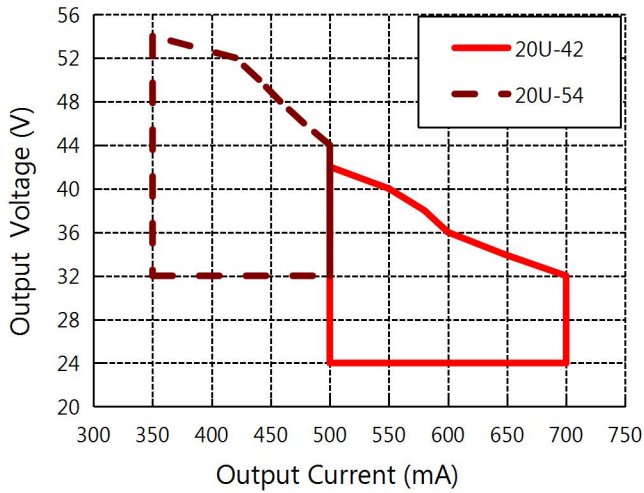


Fig. 2 O/P Power VS Ambient Temperature

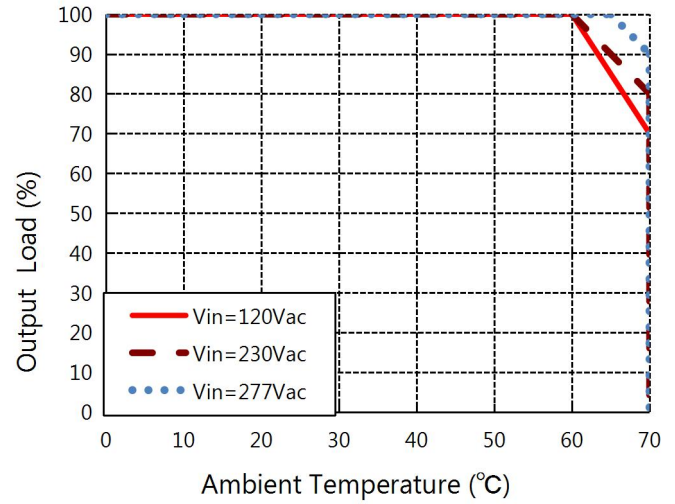


Fig. 3 Power Factor VS Output Power

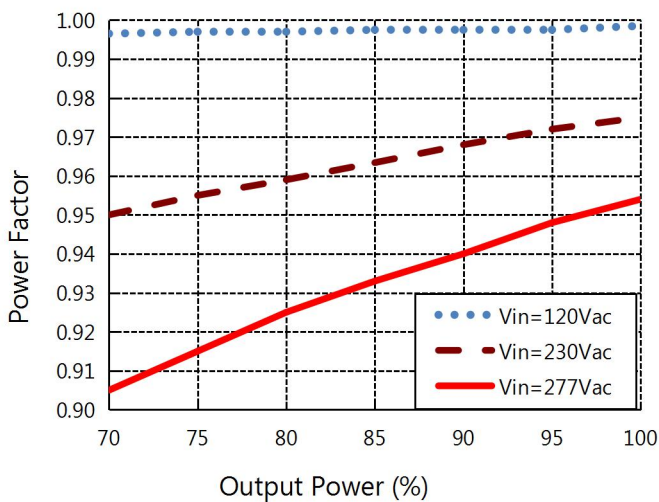


Fig. 4 THD VS Output Power

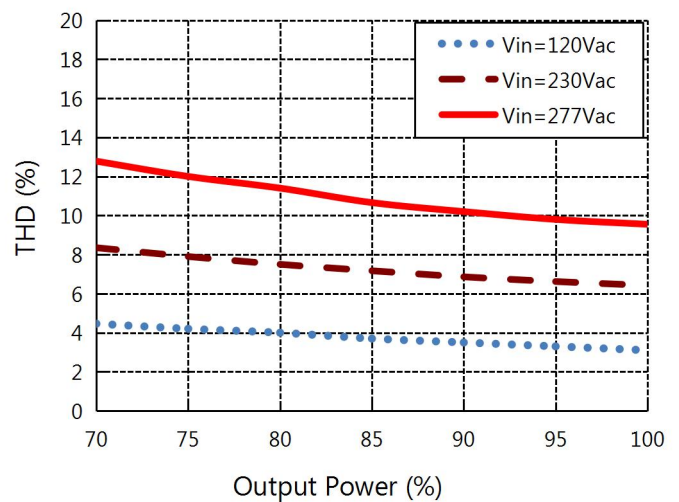


Fig. 5 Efficiency VS Output Power

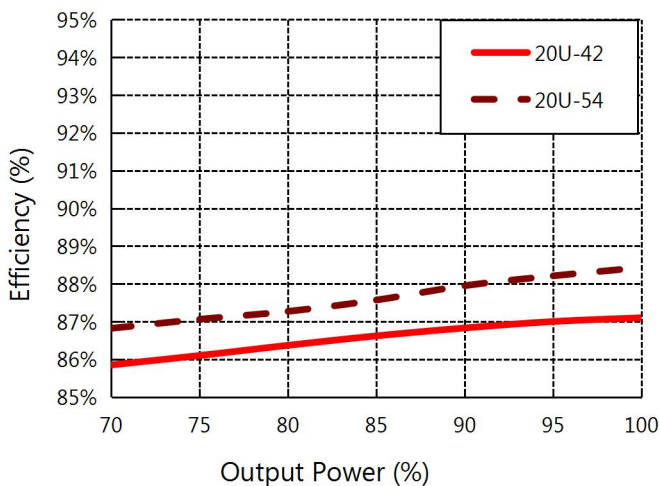
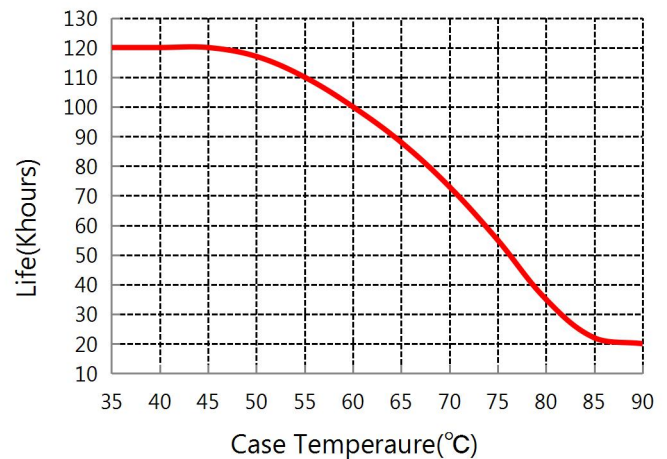
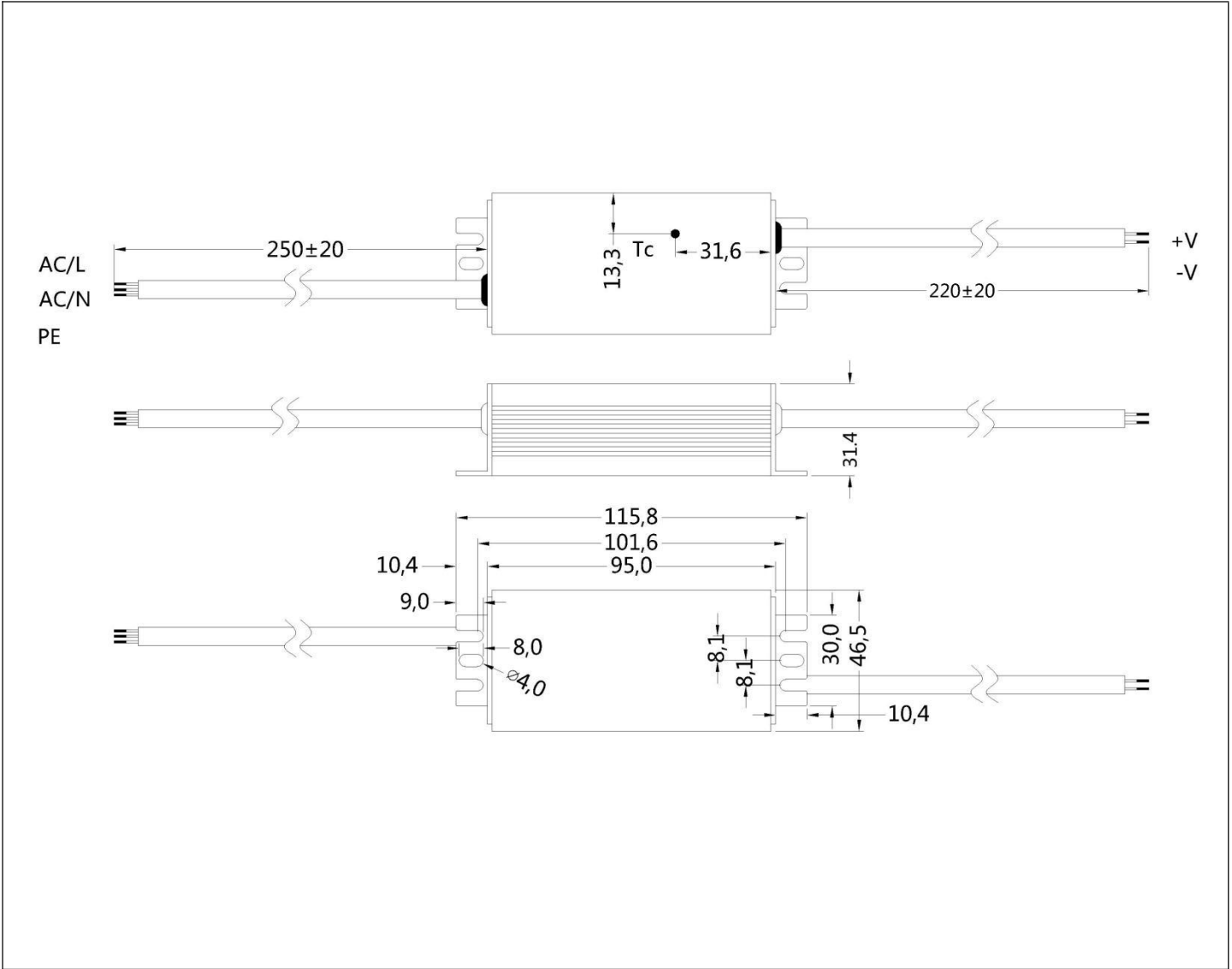


Fig. 6 Lifespan VS Case Temperature










Mechanical Characteristics(Unit: mm)



NOTE:

| | |
|-------------|--|
| Input Wire | SJOW, H05RN-F/YZW/PNCTF 3*17AWG 105°C 3*1.0mm ² , YELLOW&GREEN: PE, BROWN: L, BLUE: N |
| Output Wire | SJOW, H05RN-F/YZW/PNCTF 2*17AWG 105°C 2*1.0mm ² , BROWN: V+, BLUE: V- |

Label

| UL/TUV/SAA/CCC/CE | |
|--|---|
| <p>INPUT (输入端)</p> <p>○ ACL (BROWN 棕) ○ ACN (BLUE 蓝) ○ (GREEN/YELLOW) (绿/黄)</p> <p>www.szsofen.com Made in China (中国制造)</p> | <div style="text-align: center;">  <p>MODEL:SS-20U-42 (型号) Class 2 LED控制装置</p> <p>LED Driver</p> <p>Shenzhen Sosen Electronics Co.,Ltd A3 building, Gonghe Fourth Industrial Area, Shajing Street, Baoan District, 518104 Shenzhen, PEOPLE'S REPUBLIC OF CHINA</p> <p>INPUT (输入) : 100-240V ~ 0.3A 50/60Hz PF: 0.95 - tc tc: 85 °C 277V ~ 0.1A 50/60Hz(277V~ for North America only) ta: 60 °C</p> <p>OUTPUT (输出) : 24-42V = Max.0.7A Max.(最大电压) : 49V = Output Power(输出功率) : 22W</p> <p>Suitable for Dry, Damp and Wet Locations For LED modules use only 仅适用于LED模块</p> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="text-align: center;"> <p>RoHS SELV</p>  </div> <div style="text-align: center;"> <p>IP67</p>  </div> <div style="text-align: center;"> <p>CE</p>  </div> <div style="text-align: center;"> <p>CCC</p>  </div> <div style="text-align: center;"> <p>TUV</p>  </div> <div style="text-align: center;"> <p>UL US</p>  <p>E360758</p> </div> </div> |

Package, Transportation & Storage

1. Package

- Outside carton dimension: L×W×H =500mm×390mm×170mm;
- 48PCS/Carton;
- Net weight/PC: 0.28kg;
- Gross weight/Carton: 14.5kg.

2. Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be shielded from direct sunshine, loaded/unloaded with caution.

3. Storage

The product storage meets the standard of the GB 3873—83.

Products should be rechecked if stock for over 1 year before installation.