



Features

- . Input voltage 176 ~ 264VAC 50/60Hz or 200~360VDC
- . Output voltage select able from 3.3V to 24Vdc constant voltage
- . Protections: Short Circuit / Overload / Over Voltage Protection
- . Long life and high reliability and free air convection cooling
- . All using high quality 105°C long life electrolytic capacitors
- . Low cost solution and LED indicator for power on
- . Efficiency is no less than 75% and 2 years guarantee.

Safety Standards

- . IEC62368-1 CB report for worldwide use
- . UL62368-1 + CAN/CSA 62368-1 for USA and Canada
- . EN 62368-1:2014/A11:2017 for European Union
- . AS/NZS 62368.1:2018 for Australia and New Zealand
- . J62368-1 for Japan and GB4943.1 for China market.



Product Description:

It is a low cost and reliable 5VDC 5A 25W single output switching power supply solution with 176-264Vac or 200 - 360Vdc input and designed strictly according to the international safety standards. The output voltage is adjustable by the potentiometer by +/-10% of output voltage. This 5Vdc 5A switch mode power supply is suitable for various types of mechanical and electrical equipment, electronic instruments, equipment or apparatus, household applications and so on. This switching power supply utilizes aluminum alloy housing with cellular shape cover which is better for free air convection cooling with dimensions of 110 * 78* 35mm .

Technical Specification

| Typ. Model | TL-25S-3.3 | TL-25S-5 | TL-25S-9 | TL-25S-12 | TL-25S-24 |
|------------------------|--|----------|-----------|-----------|-----------|
| Output | | | | | |
| Output Voltage | 3.3VDC | 5VDC | 9VDC | 12VDC | 24VDC |
| Rated Current | 5A Max. | 5A Max. | 2.8A Max. | 2.1A Max. | 1A Max. |
| Current Range | 0 ~ 5A | 0 ~ 3A | 0 ~ 2.8A | 0 ~ 2.1A | 0 ~ 1A |
| Output Power | 16.5W Max. | 25W Max. | 25W Max. | 25W Max. | 24W Max. |
| Voltage Tolerance | ±5% | ±5% | ±5% | ±5% | ±5% |
| Ripple & Noise | 80mVp-p | 80mVp-p | 100mVp-p | 100mVp-p | 150mVp-p |
| Input | | | | | |
| Input voltage | 176 - 264Vac or 200- 360Vdc | | | | |
| Input Frequency | 50-60Hz (When the input is AC) | | | | |
| Input Current | 0.5Max. @ 100 ~240Vac 50/60Hz input | | | | |
| Inrush Current | 40A Max. @ 100 ~240Vac 50/60Hz input | | | | |
| Efficiency (Typ.) | 70% | 75% | 78% | 80% | 82% |
| Leakage Current | ≤0.5mA @ full input range | | | | |
| Protections | | | | | |
| Over current | 110~130% rated output power. Auto-Recovery when the fault is removed | | | | |
| Short Circuit | No damage. Auto-Recovery when the fault is removed | | | | |
| Over temperature | Shut down o/p voltage, re-power on to recover | | | | |
| Environmental | | | | | |
| Operation Temperature | 0°C to +45°C, 20%RH to 90%RH | | | | |
| Storage Temp, Humidity | -45~ +85°C, 10%RH to 95%RH | | | | |
| Operation Altitude | ≤2000m @ full load and rated operating temperatures | | | | |
| MTBF | ≥50000Hrs @ full load and rated operating temperatures | | | | |
| Mechanical | | | | | |
| Dimensions (W x L x H) | 110.0 x 78.0 x 35.0mm (4.35 x 3.07 x 1.18 inch) | | | | |
| Unit Weight | 150g±10 grams | | | | |
| Packing Information | 60pcs/ Carton, carton dimensions:47*37*20cm, 10.5kgs/ Carton | | | | |

TEST REPORT

OUTPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDIDTION | RESULT | VERDICT |
|----|-------------------|-----------------|---|-----------------------------------|---------|
| 1 | RIPPLE & NOISE | 80mVp-p (Max) | I/P:230VAC / O/P:FULL LOAD / Ta:25°C | 58mVp-p | P |
| 2 | VOLTAGE TOLERANCE | -5% ~ +5% (Max) | I/P:176VAC~264VAC O/P:FULL~MIN. LOAD / Ta:25°C | -2% ~ +2% of output voltage | P |
| 3 | LINE REGULATION | -1% ~ +1% (Max) | I/P:176VAC ~264VAC O/P:FULL LOAD / Ta:25°C | -0.05% ~ +0.05% of output voltage | P |
| 4 | LOAD REGULATION | -3% ~ +3% (Max) | I/P:230VAC O/P:FULL ~MIN LOAD / Ta:25°C | -0.92% ~ +0.92% of output voltage | P |
| 5 | OVER/UNDERSHOOT | <±5% | I/P: 230VAC O/P:FULL LOAD / Ta:25°C | 0.8% | P |
| 6 | SET UP TIME | 2000 mS (Max) | I/P:230VAC O/P:FULL LOAD / Ta:25°C | 1160 mS | P |
| 7 | RISE TIME | 30 mS (Max) | I/P: 230VAC O/P:FULL LOAD / Ta:25°C | 25 mS | P |
| 8 | HOLD UP TIME | 10 mS (Min) | I/P: 230VAC O/P:FULL LOAD / Ta:25°C | 14 mS | P |

INPUT FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDIDTION | RESULT | VERDICT |
|----|--------------------|------------------------------------|---|----------------------------|---------|
| 1 | VOLTAGE RANGE | 176VAC~264VAC | I/P:TESTING O/P:FULL LOAD / Ta:25°C | 158V~264V | P |
| 2 | FREQUENCY RANGE | 50HZ - 60HZ (Typ) NO DAMAGE OSC | I/P: 176VAC ~ 240VAC O/P:FULL~MIN LOAD / Ta:25°C | TEST: OK | P |
| 3 | EFFICIENCY | 75% (Typ) | I/P:230VAC O/P:FULL LOAD / Ta:25°C | 75.45% | P |
| 4 | AVERAGE EFFICIENCY | >73% | I/P:230VAC & O/P:25%、50%、75%、100% LOAD & Ta:25°C | 73.36% (230VAC) | P |
| 5 | AC CURRENT | 0.5A (Max) | I/P:230VAC & O/P:FULL LOAD Ta:25°C | 0.39A | P |
| 6 | INRUSH CURRENT | <40A COLD START | I/P: 230VAC / O/P:FULL LOAD Ta:25°C | 26.63A | P |
| 7 | LEAKAGE CURRENT | < 0.5mA | I/P:230VAC & O/P:Min LOAD Ta:25°C | L-FG:0.37mA N-FG:0.35mA | P |

PROTECTION FUNCTION TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDIDTION | RESULT | VERDICT |
|----|-------------------------|----------------------------------|---------------------------------------|--|---------|
| 1 | OVER LOAD PROTECTION | 110 ~ 130% (Typ) | I/P:230VAC & O/P:TESTING Ta:25°C | 121.3% HICCUP MODE | P |
| 2 | OVER VOLTAGE PROTECTION | 115 ~ 135% (Typ) | I/P:230VAC O/P:MIN LOAD & Ta:25°C | Hiccup mode ,recovers automatically after fault condition is removed | P |
| 3 | SHORT PROTECTION | SHORT OUTPUT 1 HOUR NO DAMAGE | I/P:264VAC O/P:FULL LOAD & Ta:25°C | NO DAMAGE HICCUP MODE | P |

SAFETY TEST & E.M.C TEST

| NO | TEST ITEM | SPECIFICATION | TEST CONDIDTION | RESULT | VERDICT |
|----|----------------------|---|---|--|---------|
| 1 | WITHSTAND VOLTAGE | I/P-O/P: 1.5KVAC/min I/P- FG: 1.5KVAC/min O/P-FG:0.5KVAC/min | I/P-O/P: 1.8 KVAC/min I/P-FG: 1.8 KVAC/min O/P-FG:0.6 KVAC/min Ta:25°C | I/P-O/P:3.71mA I/P-FG: 3.25mA O/P-FG: 2.84mA NO DAMAGE | P |
| 2 | ISOLATION RESISTANCE | I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ | I/P-O/P: 500 VDC I/P-FG: 500 VDC O/P-FG: 500 VDC Ta:25°C | I/P-O/P: 9999MΩ I/P-FG: 9999MΩ O/P-FG:9999 MΩ NO DAMAGE | P |
| 3 | CONDUCTION | BS EN/EN55032(CISPR32), FCC PART 15 / CISPR22 CAN | I/P: 230 VAC (50HZ) O/P: FULL/50% LOAD Ta: 25°C | PASS Test by certified Lab | P |
| 4 | RADIATION | BS EN/EN55032(CISPR32), FCC PART 15 / CISPR22 CAN | I/P: 230 VAC (50HZ) O/P: FULL LOAD Ta: 25°C | PASS Test by certified Lab | P |
| 5 | SURGE | BS EN/EN61000-4-5 LIGHT INDUSTRY L-N: 1KV | I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C | CRITERIA B | P |
| 6 | E.S.D | BS EN/EN61000-4-2 LIGHT INDUSTRY AIR: 8KV / Contact: 4KV | I/P: 230 VAC/50HZ O/P: FULL LOAD Ta: 25°C | CRITERIA B | P |

| TEST RESULT | TESTER | REVIEW | APPROVAL |
|-------------|---------------|----------------|-----------------|
| PASS | ZHU LI | WANG LW | ZHANG DL |