

## UPSHINE®



# INTRODUCTION

The V series led driver provides the best compromise between an attractive price and qualified performance. With a focus on application-related functions, the LED Driver range offers good quality and performance that ensures reliable operation of LED module.

## Features

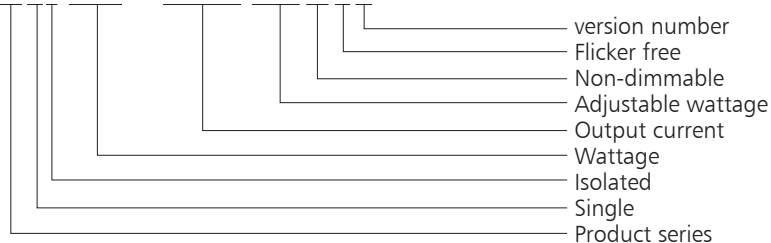
- Independent fixed output LED Driver
- Constant current
- Specific, optimized output current and voltage
- 6-60W Wattage adjustable
- Output current 150-1500mA
- Output power 6-60W
- Whole range are featured with flicker free performance
- Idea circuit design overcome luminarie flickering with voltage fluctuation.
- Nominal life-time up to 50,000 h
- For luminaires of protection class I and protection class II
- Temperature protection as per EN 61347-2-13 C5e
- Small, super compact dimensions
- IP rating IP20



# TECHNICAL DATASHEET

## Code Number Definition

VSI-XXWXXX-A5NF1

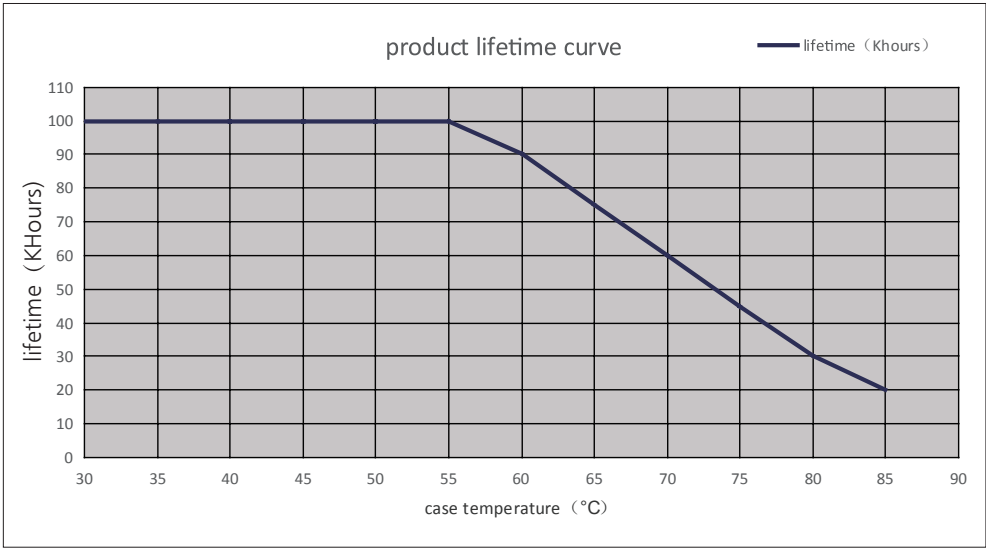


## Driver Datasheet (Non-dimmable )

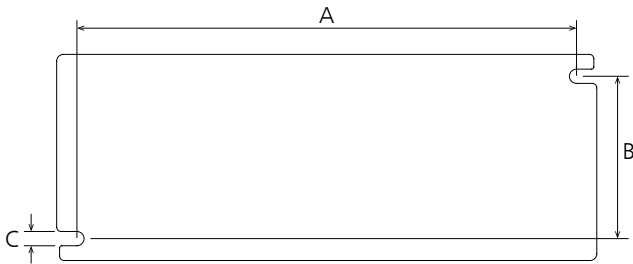
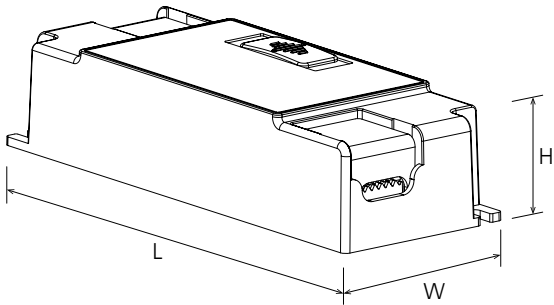
| Code        |                                | VSI-XXWXXX-A5NF1                                                                       |                       |                       |                        |                           |
|-------------|--------------------------------|----------------------------------------------------------------------------------------|-----------------------|-----------------------|------------------------|---------------------------|
| Input       | Input POWER                    | 6/8/10/13/15W                                                                          | 13/16/18/20/25W       | 18/20/22/25/30W       | 20/25/30/36/40W        | 30/40/50/55/60W           |
|             | Input Voltage                  | 200-264V                                                                               |                       |                       |                        |                           |
|             | Rated Input Voltage(V)         | 220-240V                                                                               |                       |                       |                        |                           |
|             | Frequency                      | 50/60HZ                                                                                |                       |                       |                        |                           |
|             | Input Current                  | ≤0.09A                                                                                 | ≤0.14A                | ≤0.17A                | ≤0.23A                 | ≤0.34A                    |
|             | Rated Input Current            | ≤0.075A                                                                                | ≤0.13A                | ≤0.15A                | ≤0.20A                 | ≤0.3A                     |
|             | Power Factor (typ)             | 0.9                                                                                    |                       |                       |                        |                           |
|             | Total harmonic distortion(THD) | <20% @230V                                                                             |                       |                       |                        |                           |
|             | Efficiency (typ)               | ≥86%                                                                                   | ≥87%                  | ≥89%                  | ≥89%                   | ≥89%                      |
|             | Inrush currentN (Typ.)         | 23A/36uS                                                                               | 22.2A/53uS            | 23.2A/224uS           | 23.2A/224uS            | 45A/380uS                 |
|             | Max circuit breaker            | Please refer to" Circuit breaker Specification"                                        |                       |                       |                        |                           |
|             | Leakage current                | <0.5mA/240V                                                                            |                       |                       |                        |                           |
|             | No load wattage                | <0.5w @230V                                                                            |                       |                       |                        |                           |
| Output      | Output Voltage range           | 30-40V                                                                                 |                       |                       |                        |                           |
|             | Rated output current           | 150/200/250/300/360mA                                                                  | 300/400/450/500/620mA | 450/500/550/600/750mA | 500/620/750/900/1000mA | 750/1000/1300/1400/1500mA |
|             | Line Regulation                | ±5%                                                                                    |                       |                       |                        |                           |
|             | Open circuit voltage (max)     | 50V                                                                                    |                       |                       |                        |                           |
|             | Setup time(note1)              | <500ms @230V                                                                           |                       |                       |                        |                           |
|             | Flickering Index(IEEESTd 1789) | 1%(NO RISK)                                                                            |                       |                       |                        |                           |
| Protection  | Short circuit protection       | Constant current limiting, recovers automatically after fault condition is removed     |                       |                       |                        |                           |
|             | Over voltage protection        | Shut down o/p voltage                                                                  |                       |                       |                        |                           |
|             | Over temperature protection    | Shut down o/p voltage, recovers automatically after temperature goes down              |                       |                       |                        |                           |
| Environment | Ambient temperature range ta   | -20...+45°C                                                                            |                       |                       |                        |                           |
|             | Maximum case temperature tc    | 85°C (Measured on tc point indicated of the product label, tc not exceeded)            |                       |                       |                        |                           |
|             | Operating temperature          | -20...+45°C                                                                            |                       |                       |                        |                           |
|             | Storage temperature/humidity   | -25...+85 °C; 5-95% RH                                                                 |                       |                       |                        |                           |
|             | Relative humidity              | 5...85%                                                                                |                       |                       |                        |                           |
|             | Environmental rating           | Indoor                                                                                 |                       |                       |                        |                           |
|             | IP rating                      | IP20                                                                                   |                       |                       |                        |                           |
| Safety&EMC  | Life time                      | > 50,000H @25°C                                                                        |                       |                       |                        |                           |
|             | Safety standards               | IEC/EN61347-1, IEC/EN61347-2-13, IEC/EN62384 independent,GB19510.14,GB19510.1 approved |                       |                       |                        |                           |
|             | Withstand voltage              | I/P-O/P:3.75KVac, <5mA 60S; I/P-FG:1.6KVac, <5mA 60S                                   |                       |                       |                        |                           |
|             | Isolation Resistance           | I/P-O/P: 500VDC, ≥100M Ω                                                               |                       |                       |                        |                           |
|             | surge                          | IEC/EN61000-4-5(L-N:1.5KV )                                                            |                       |                       |                        |                           |
|             | EMC Emission                   | IEC/EN55015, IEC/EN61000-3-2                                                           |                       |                       |                        |                           |
| Other       | EMC Immunity                   | IEC/EN61000-4-2,3,4,5,6,8,11; IEC/EN61547                                              |                       |                       |                        |                           |
|             | Dimension                      | 103*39*28mm                                                                            | 103*39*28mm           | 121*46*28mm           | 121*46*28mm            | 153*51*30mm               |
|             | Weight                         | 0.064Kg                                                                                | 0.073Kg               | 0.102Kg               | 0.102Kg                | 0.173Kg                   |

# Product Referenced Lifetime Curve

The curve below illustrates the driver's lifetime date when the LED driver's Max. case temperature reaches 40°C,50°C,60°C,70°C, 80°C and 90°C.



# DIMENSION



| Dimension(mm)     |     |    |    |     |      |     |
|-------------------|-----|----|----|-----|------|-----|
| Code              | L   | W  | H  | A   | B    | C   |
| VSI-15W360-A5NF1  | 103 | 39 | 28 | 97  | 31.1 | 3.2 |
| VSI-25W620-A5NF1  | 103 | 39 | 28 | 97  | 31.1 | 3.2 |
| VSI-30W750-A5NF1  | 121 | 46 | 28 | 112 | 36.4 | 3.2 |
| VSI-40W1000-A5NF1 | 121 | 46 | 28 | 112 | 36.4 | 3.2 |
| VSI-60W1500-A5NF1 | 153 | 51 | 31 | 146 | 43   | 3.2 |

# CIRCUIT BREAKER SPECIFICATION

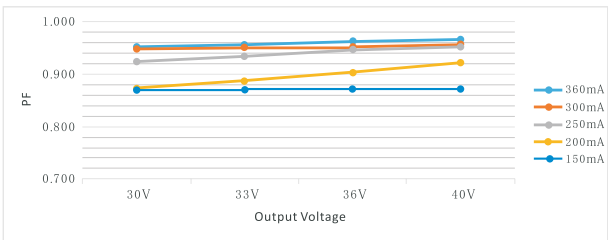
| Circuit Breaker Specification |     |     |     |     |     |     |     |     |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Code                          | B10 | B13 | B16 | B20 | C10 | C13 | C16 | C20 |
|                               | 10  | 13  | 16  | 20  | 10  | 13  | 16  | 20  |
| VSI-15W360-A5NF1              | 74  | 96  | 119 | 148 | 74  | 96  | 119 | 148 |
| VSI-25W620-A5NF1              | 48  | 62  | 76  | 95  | 48  | 62  | 76  | 95  |
| VSI-30W750-A5NF1              | 39  | 51  | 63  | 78  | 39  | 51  | 63  | 78  |
| VSI-40W1000-A5NF1             | 29  | 38  | 46  | 58  | 29  | 38  | 46  | 58  |
| VSI-60W1500-A5NF1             | 20  | 25  | 31  | 39  | 20  | 25  | 31  | 39  |

## DIP SWITCH TABLE

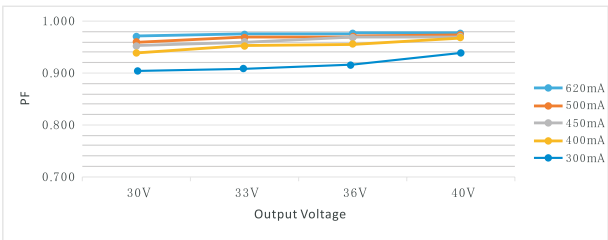
| Code             | Vout   | Po Max | Io    |
|------------------|--------|--------|-------|
| VSI-15W360-A5NF1 | 30-40V | 14.4W  | 360mA |
|                  | 30-40V | 12W    | 300mA |
|                  | 30-40V | 10W    | 250mA |
|                  | 30-40V | 8W     | 200mA |
|                  | 30-40V | 6W     | 150mA |

## POWER FACTOR CHARACTERISTIC

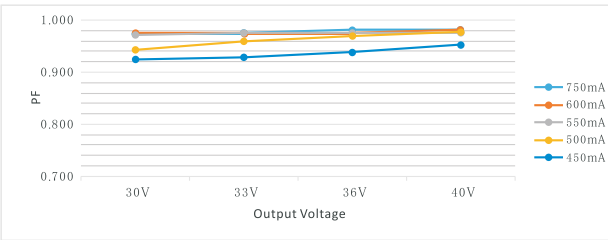
@AC230Vac Input



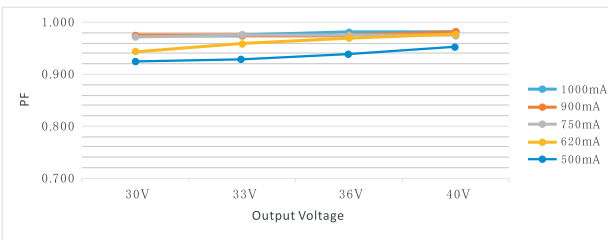
| Code             | Vout   | Po Max | Io    |
|------------------|--------|--------|-------|
| VSI-25W620-A5NF1 | 30-40V | 24.8W  | 620mA |
|                  | 30-40V | 20W    | 500mA |
|                  | 30-40V | 18W    | 450mA |
|                  | 30-40V | 16W    | 400mA |
|                  | 30-40V | 12W    | 300mA |



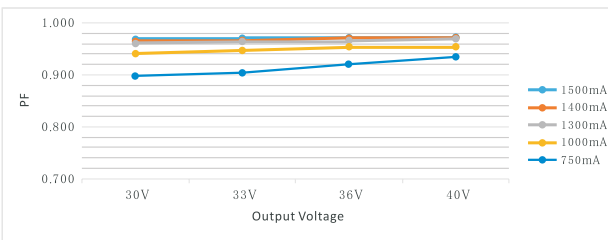
| Code             | Vout   | Po Max | Io    |
|------------------|--------|--------|-------|
| VSI-30W750-A5NF1 | 30-40V | 30W    | 750mA |
|                  | 30-40V | 25W    | 600mA |
|                  | 30-40V | 22W    | 550mA |
|                  | 30-40V | 20W    | 500mA |
|                  | 30-40V | 18W    | 450mA |



| Code              | Vout   | Po Max | Io     |
|-------------------|--------|--------|--------|
| VSI-40W1000-A5NF1 | 30-40V | 40W    | 1000mA |
|                   | 30-40V | 36W    | 900mA  |
|                   | 30-40V | 30W    | 750mA  |
|                   | 30-40V | 24.8W  | 620mA  |
|                   | 30-40V | 20W    | 500mA  |



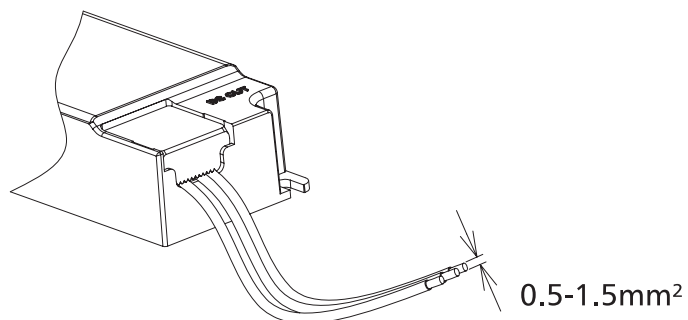
| Code              | Vout   | Po Max | Io     |
|-------------------|--------|--------|--------|
| VSI-60W1500-A5NF1 | 30-40V | 60W    | 1500mA |
|                   | 30-40V | 56W    | 1400mA |
|                   | 30-40V | 52W    | 1300mA |
|                   | 30-40V | 40W    | 1000mA |
|                   | 30-40V | 30W    | 750mA  |



# CIRCUIT DIAGRAM

## No-load operation

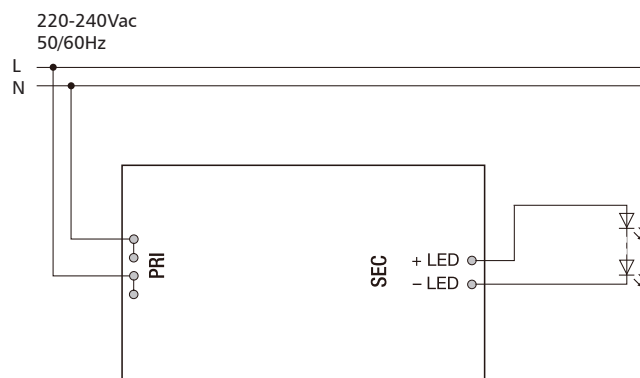
In case of open circuit, protection will be activated, there will be 50V output voltage.



## Glow wire test

According to EN 61347-1 with increased temperature of  $960^{\circ}\text{C}$  passed.

## NON-Dimmable circuit diagram



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*Up to Shine, there is life* 光之上，是生活