

# MU050I180AQI53

## Features

- 1 LED channel, 100% dimming Output Current can be set to from 200mA to 1800mA
- Soft light Dimming Range 0.1%~100%  
For linear dimming curve, the minimum dimming level is 0.1%  
For logarithmic dimming curve, the minimum dimming level is 0.1%
- Support DMX/RDM Dimming
- Dim-to-off with Standby Power < 0.3 W
- Constant Power Maximum is 50W
- Protection: OTP, SCP, NLP, OPP
- Mode of wiring: From the side to wiring
- UL Class 2, IP20
- 5-year warranty



150 × 76 × 30mm

## Electrical Specifications

|                                                                   |                                                  |
|-------------------------------------------------------------------|--------------------------------------------------|
| Rated input voltage range                                         | 90-305 VAC                                       |
| Maximum input voltage range                                       | 90 - 305 V                                       |
| Input voltage frequency                                           | 50 / 60 Hz                                       |
| Leakage current                                                   | <750uA                                           |
| Output voltage range                                              | 8 - 50 V                                         |
| Maximum input power                                               | <70W                                             |
| Efficiency typical value ( 230V, 50Hz, full loaded <sup>①</sup> ) | 88 - 90 %                                        |
| Power factor ( 230V, 50Hz, full loaded <sup>①</sup> )             | >0.95                                            |
| Stand-by power consumption <sup>②</sup>                           | <0.3W                                            |
| THD(230V, 50Hz, full loaded <sup>①</sup> )                        | <10%                                             |
| Start-up time ( 230V, 50Hz, full loaded )                         | <0.5S                                            |
| Start-up time ( 120V, 50Hz, full loaded )                         | <1S                                              |
| The maximum setup current precision                               | ± 5%                                             |
| Input inrush current                                              | <15A                                             |
| Dimming range                                                     | 0.1 -100%                                        |
| Withstand Voltage I/P-O/P                                         | 3750 V                                           |
| Withstand Voltage I/P-FG                                          | 1875 V                                           |
| Withstand Voltage O/P-FG                                          | 500V                                             |
| Surge L/N-earth, L-N                                              | 2KV, 1KV                                         |
| Operating Temp., Humidity                                         | -25℃ ~ +58℃, 20% ~ 95% RH                        |
| Storage Temp., Humidity                                           | -40℃ ~ +85℃, 10% ~ 95% RH                        |
| Lifetime                                                          | ≥50000 hours @ Tc=78℃ at 120VAC input, 100% load |
| Weight                                                            | 360g                                             |
| Reference dimension                                               | 150 × 76 × 30 mm                                 |

## Model Specifications

| Type           | Output Current | Output Voltage | Output Power | Input Power (230V, 50Hz) | Efficiency | Case Temperature | Ambient Temperature |
|----------------|----------------|----------------|--------------|--------------------------|------------|------------------|---------------------|
| MU050I180AQI53 | 1000 mA        | 50 V           | 50.00 W      | 56.20 W                  | 89.0%      | 85℃              | -25 - 58℃           |
|                | 1050 mA        | 48 V           | 50.40 W      | 56.80 W                  | 88.7%      | 85℃              | -25 - 58℃           |
|                | 1100 mA        | 45 V           | 49.50 W      | 56.30 W                  | 87.9%      | 85℃              | -25 - 58℃           |
|                | 1150 mA        | 43 V           | 49.45 W      | 56.30 W                  | 87.8%      | 85℃              | -25 - 58℃           |
|                | 1200 mA        | 42 V           | 50.40 W      | 57.20 W                  | 88.1%      | 85℃              | -25 - 58℃           |
|                | 1250 mA        | 40 V           | 50.00 W      | 57.00 W                  | 87.7%      | 85℃              | -25 - 58℃           |
|                | 1300 mA        | 38 V           | 49.40 W      | 56.40 W                  | 87.6%      | 85℃              | -25 - 58℃           |
|                | 1350 mA        | 37 V           | 50.00 W      | 57.00 W                  | 87.7%      | 85℃              | -25 - 58℃           |
|                | 1400 mA        | 36 V           | 50.40 W      | 57.50 W                  | 87.7%      | 85℃              | -25 - 58℃           |
|                | 1450 mA        | 34 V           | 49.30 W      | 56.50 W                  | 87.3%      | 85℃              | -25 - 58℃           |
|                | 1500 mA        | 33 V           | 49.50 W      | 56.80 W                  | 87.1%      | 85℃              | -25 - 58℃           |
|                | 1550 mA        | 32 V           | 49.60 W      | 57.00 W                  | 87.0%      | 85℃              | -25 - 58℃           |
|                | 1600 mA        | 31 V           | 49.60 W      | 57.00 W                  | 87.0%      | 85℃              | -25 - 58℃           |
|                | 1650 mA        | 30 V           | 49.50 W      | 57.00 W                  | 86.8%      | 85℃              | -25 - 58℃           |
|                | 1700 mA        | 29 V           | 49.30 W      | 56.90 W                  | 86.6%      | 85℃              | -25 - 58℃           |
|                | 1750 mA        | 29 V           | 50.75 W      | 58.40 W                  | 86.9%      | 85℃              | -25 - 58℃           |
|                | 1800 mA        | 28 V           | 50.40 W      | 57.90 W                  | 87.0%      | 85℃              | -25 - 58℃           |

\*1: Load: 50V\*1A

\*2: Stand-by power consumption 110V < 50mW, 230V < 200mW

## ■ Safety & EMC Compliance

|                                     |                                          |
|-------------------------------------|------------------------------------------|
| CUL                                 | UL8750, UL1310, CAN/CSA-C22.2 No.223-M91 |
| CE                                  | EN 61347-1, EN61347-2-13                 |
| Conducted Emissions                 | FCC Part15 Class B / EN55015             |
| Radiated Emissions                  | FCC Part15 Class B / EN55015             |
| Harmonic Current Emissions          | EN61000-3-2                              |
| Voltage Fluctuations and Flicker    | EN61000-3-3                              |
| Electrostatic Discharge             | EN61000-4-2                              |
| RFE Field Susceptibility            | EN61000-4-3                              |
| Electrical Fast Transient           | EN61000-4-4                              |
| Conducted Radio Frequency           | EN61000-4-6                              |
| Power Frequency Magnetic Field Test | EN61000-4-8                              |
| Voltage Dips                        | EN61000-4-11                             |
| Electromagnetic Immunity            | EN61547                                  |

## ■ Function Description

- DMX/RDM

DMX+、DMX-、Shield are the interfaces of DMX/RDM.

- MCS technology

Connect Smartkey to the driver through MCS( Multifunctional Configuration Settings) ports. With MOONS' Configurator software, you can set the MAX current of the driver( each step is 1 mA),dimming curve type, DMX start address, etc. Please refer to specification of Smartkey to get specific information.

- Temperature Detection

In order to protect the LED, the temperature of LED is detected by a NTC. When the temperature exceeds the point which can be set by Smartkey, the output current can be decreased automatically, but not less than 25%.

- Constant Output Power

The driver can satisfy the curve of constant output power within a large range of output current and voltage.

- Protection

Thermal Protection

When the temperature of the inside PCB exceeds 110℃ , output current will be decreased to 50%. And it can not recover until the temperture drops to 70℃ .

Short-circuit Protection

Once the output short-circuits, the output will be cut off automatically. Then the driver will try to restart every 4s.

No-load Protection

The driver operating with no load will not be damaged, and it will try to restart every 4s. So the driver supports hot plug in.

Over-Power Protection

If the total power exceeds 60W, the output current of each channel will decrease to 50% , and then the maximum output power is increased to 50W gradually.

- Online Update

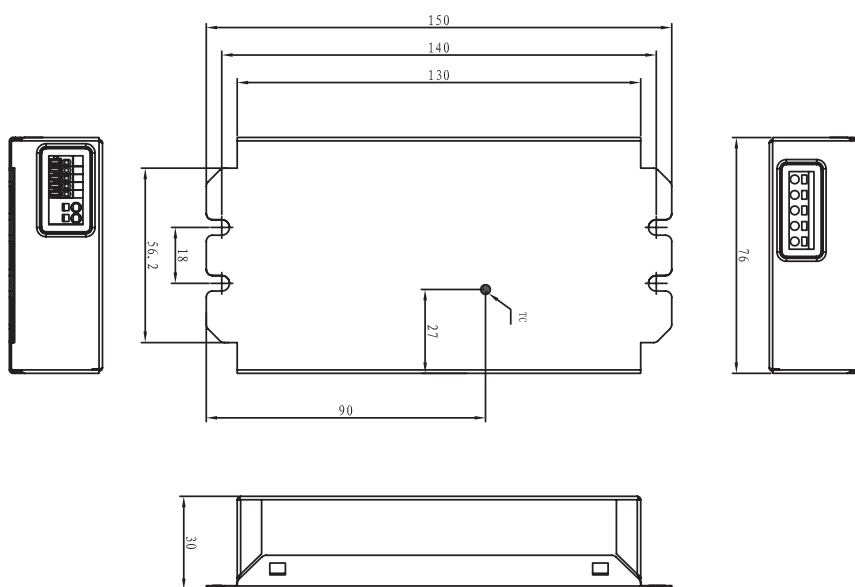
Connect Smartkey to PC through a USB port, then connect Smartkey to the driver correctly to update.

Please refer to the specification of Smartkey.

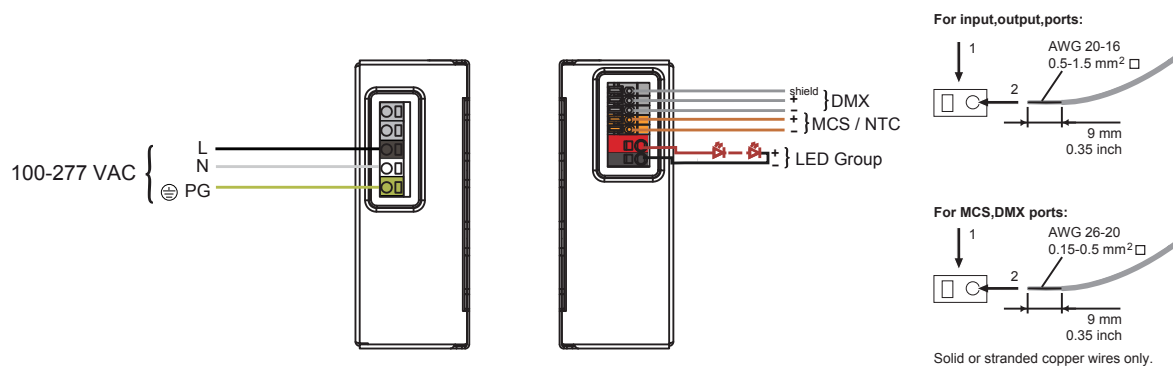
\*1: Recommended manufacture and type of the NTC

Manufacture: Thinking TSM2A473J409ARZA(SMD) \ VISHAY NTCS0805e4473JXT \ MURATA NCP21WB473J03RA

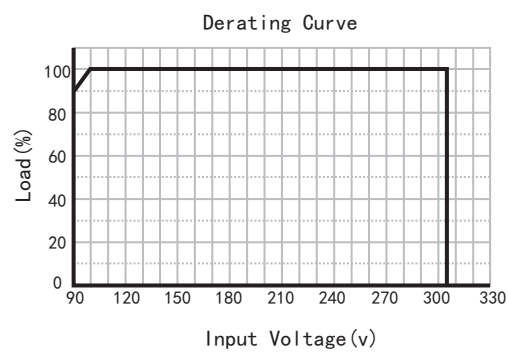
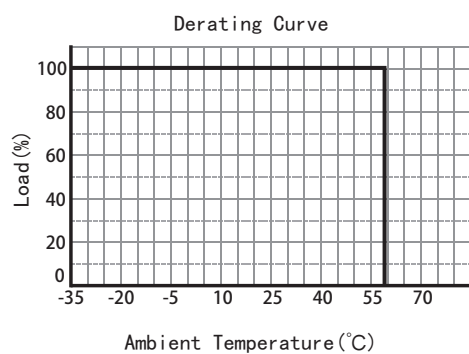
## Mechanical Outline (unit: mm)



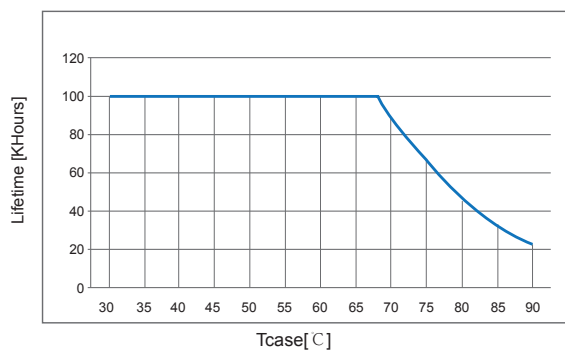
## Ports



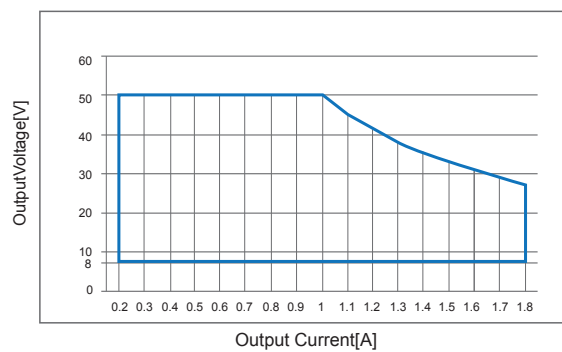
## Test curve



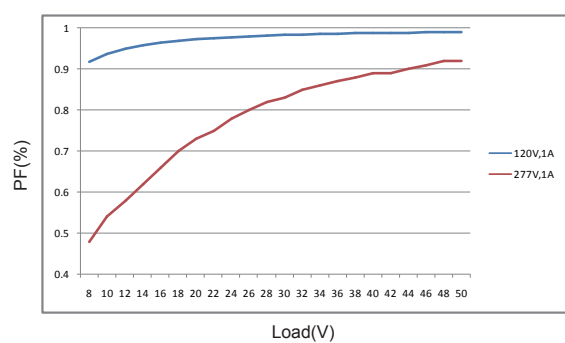
Lifetime VS.Tcase



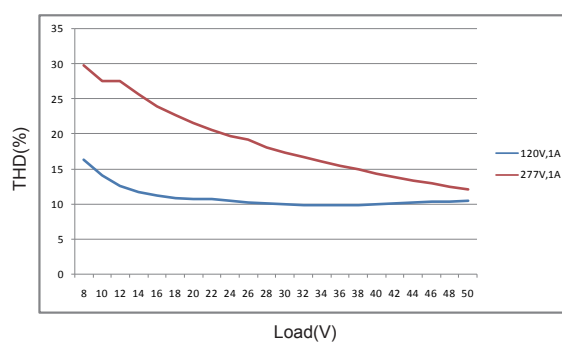
V/I OPERATING RANGE



Power Factor Curve



Current Total Harmonic Curve



Efficiency Curve

