SPECIFICATION FOR APPROVAL

CUSTOMER :

PRODUCT NAME: 15W Isolated PoE module

PRODUCT MODEL : TSD-V187

BRAND : TST（OEM/ODM）

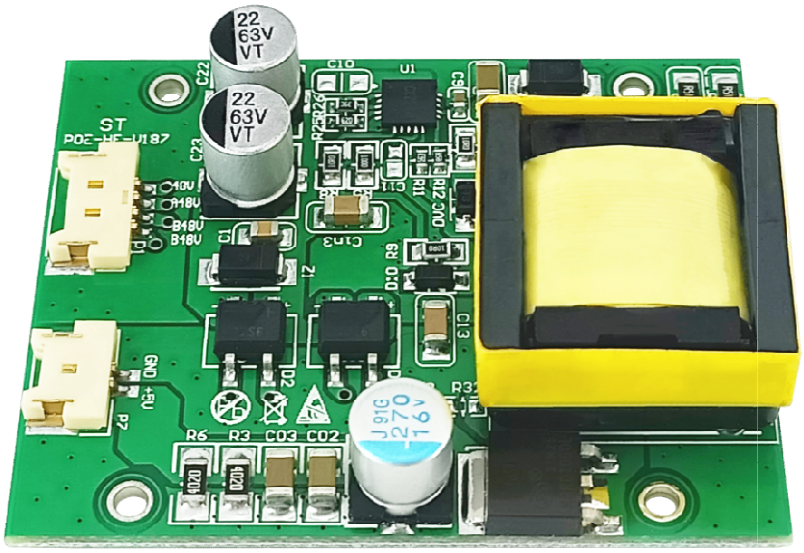
DATE : 2024 / 06 / 26

DRAWING			CUSTOMER APPROVE
DESIGNED	CHECKED	APPROVED	
VANNE	YOUTRONG	Mark	
DATE	2024 / 06 / 26		Please return the visa after confirmation, thank you!

Shenzhen Tstone Technology Co. ,Ltd
Mobile: 13640991523
http: www.tstpoe.com
Add：Room 903, Building B-14C, First Industrial Zone, Baihua Community, Guangming Street, Guangming District, Shenzhen, China

PRODUCT: 15W Isolated PoE module

MODEL: TSD-V187



What Is PoE

PoE (Power over Ethernet) refers to the technology that can transmit data signals for some IP-based terminals (such as IP phones, wireless LAN access point APs, IP cameras, etc.) without any changes to the existing Ethernet Cat.5 cabling infrastructure, and can also provide DC power supply for such devices.

A complete PoE system consists of two parts: Power Sourcing Equipment (PSE) and Powered Device (PD). The PSE device is the device that powers the Ethernet client device and is also the manager of the entire PoE (Power-over-Ethernet) process. The PD device is the PSE load that receives the power supply, that is, the client device of the PoE system. Based on the IEEE 802.3af/at standard, the two establish information about the connection status, device type, power consumption level and other aspects of the PD of the power receiving device, and use this as the basis for PSE to supply power to the PD through Ethernet.

The Principle of PoE

The standard Category 5 cable has four twisted pairs, but only two pairs are used in l0M BASE-T and 100M BASE-T. IEEE80 2.3af/at allows two uses: (1) When the idle pin is used for power supply, pins 4 and 5 are connected as the positive pole, and pins 7 and 8 are connected as the negative pole. (2) Pin 1 and pin 2 are connected as the positive pole, and pin 3 and 6 are connected as the negative pole.

The Advantages of PoE

1. Save labor and material costs. Compared with the traditional wiring method of weak current engineering, PoE only needs to install a network cable to make the IP equipment work normally. In many cases, PoE is more advantageous in the places where it is difficult to deploy AC power. As the number of network devices in the system increases, the use of PoE eliminates the need for local power supply for the equipment, which will greatly reduce deployment costs and simplify their manageability.

2. Easy to install and manage. Customers can autonomously and securely mix PoE devices and legacy devices within the system, and can coexist with existing Ethernet cables. PoE devices are compatible with the management system of existing network devices and can share the management platform with existing network devices.

3. Good security. The Power Sourcing Equipment（PSE） in a PoE system will only supply power to the Powered Device （PD） that needs to be powered. Only when the Device that needs to be powered is connected and the protocol is successfully identified, the power supply equipment will have a voltage output and supply power to the powered device, thus eliminating the risk of leakage and short circuit on the line.

Product Introduction

The TSD-V187 is a PoE module that supports the IEEE802.3af international standard protocol. It can receive PoE signals from the PSE end and convert the DC signals within the PoE signals through internal circuits for processing, outputting a continuous and stable 5V 3A DC power.

The TSD-V187 has a maximum output power of 15W and is a low-power module. It can be applied in commercial displays, all-in-one computers, electronic class signs and POS machines, etc. It can simplify the wiring deployment of user terminal devices and provide more power supply solutions for users.

Product Description

The TSD-V187 module is equipped with one input interface and one output interface. Input Interface: A 4-pin PH1.25mm socket for receiving DC 38-56V signals. Output Interface: A 2-pin PH1.25mm socket for delivering DC 5V 3A signals.

Dimensions and Structure: Size: 50 * 40 * 14.5 mm. PCB Design: Square structure, double-sided board with single-layer design, coated with glossy green solder mask. PCB Thickness: 1.6 mm. Module Maximum Thickness: 14.5 mm. Screw Hole Diameter: Φ = 2.0 mm * 4, Net Weight: 20 g. The input and output interfaces of the TSD-V187 module are located on the same side, using high-temperature-resistant and flame-retardant materials. The ultra-thin horizontal surface-mount sockets ensure user convenience and safety.

The TSD-V187 module accepts DC signals ranging from 38-56V (PoE signal) as input and outputs a DC 5V 3A signal, with a maximum output power of 15W. The module incorporates an isolation transformer, making it a PoE module with isolation functionality. Additionally, the module's circuitry includes features such as overcurrent protection, short-circuit protection, overheat protection, overvoltage protection, and 4KV surge protection.

The TSD-V187 complies with the IEEE 802.3af PoE international standard protocol, and its EMC parameters meet the requirements of IEC 61000-4-2/3/4/5/6 standards. The product has obtained authoritative certifications such as CE, FC, and RoHS. The TSD-V187 module is widely exported overseas, offering high precision, excellent performance, safety, and reliability. It has earned consistent praise from users both domestically and internationally.

Product Features

- Input: Wide - voltage DC power via PoE, ranging from 38V to 56V.
- Output: Voltage 5V DC, Max 3A
- IEEE 802.3af PoE International Standard Protocol
- CE, FC, RoHS Authoritative Certifications
- EMC Compliant with IEC 61000-4-2/3/4/5/6 Standards
- Fully Compatible with RJ12+ RJ36- / RJ45+ RJ78-

- 4KV Surge Protection
- Two-Layer Board, Single-Sided Design
- Beige High-Temperature-Resistant Flame-Retardant Material, Horizontal Ultra-Thin SMD Socket
- Solid SMD Capacitors for Long Lifespan and Stable Performance
- Pure Copper Thickened Core Transformer
- Short-Circuit Protection, Overload Protection, Overheat Protection, Overvoltage Protection
- High-Precision Electronic Components from Reputable Brands
- Conversion Efficiency Exceeds 85%
- High-Power High-Conductivity Low-Impedance Transistors
- Pure Copper Pin Connectors with Excellent Conductivity and Heat Dissipation
- High-Temperature-Resistant and Eco-Friendly PCB Material

Specifications

Product parameter table	
Product Name	15W Isolated PoE module
Product Model	TSD-V187
PoE Standard	IEEE802.3af
Input Voltage	PoE: DC38-56V
Output	DC 5V MAX3A
Conversion Efficiency	≧85%
PoE Pin	RJ12+ RJ36- / RJ45+ RJ78- Fully compatible
Conversion Mode	Isolated type
Data Rate	/
Transmission Distance	100 meters(Category 5e Cable (Cat5e))
Surge Protection	4KV
Circuit Protection	Short-circuit Protection, overcurrent Protection Overvoltage Protection, overheating Protection
LED Indicator	/

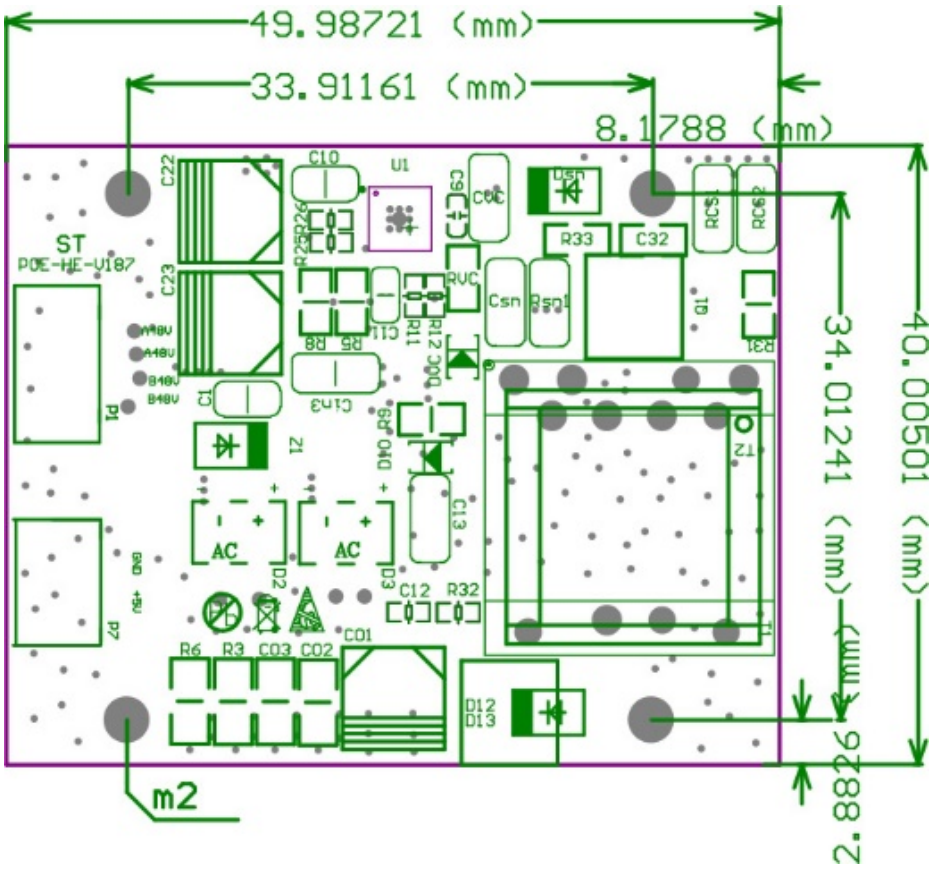
Interface	Input Port (4 - Pin PH1.25mm Socket): DC 38-56V IN Output Port (2 - Pin PH1.25mm Socket): DC 5V OUT
Function	/
Material	FR-4
Color	bright green oil
Accessories	/
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-30～65℃ For Operating -40～85℃ For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 20g
Dimension	50*40*14.5mm
Package	Anti-static pearl cotton

Product Applications

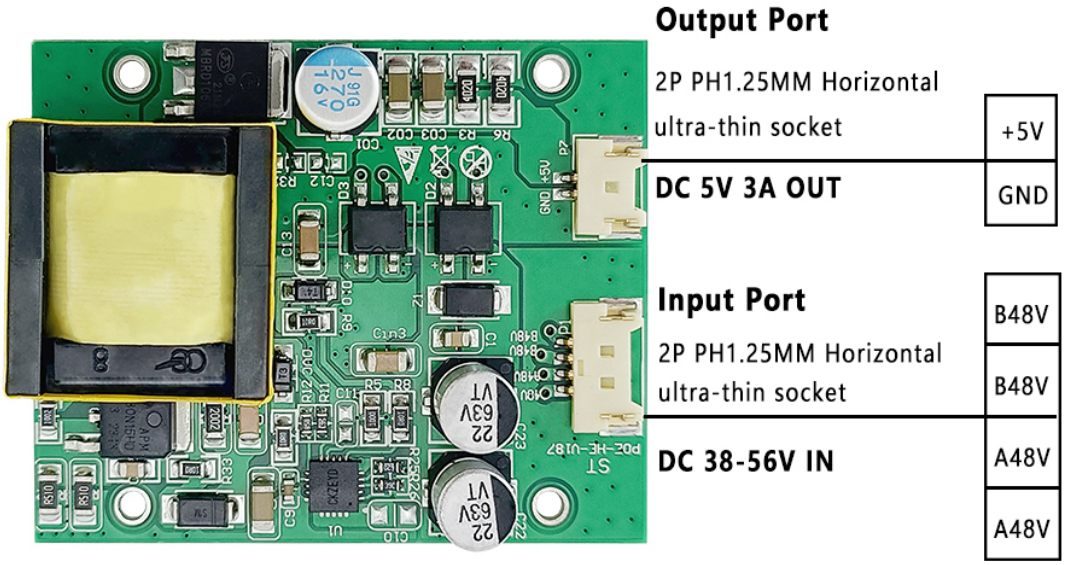
The TSD-V187 module is lightweight and compact, with a maximum thickness of less than 15mm. It features flexible and convenient installation, ensuring excellent compatibility with a variety of user terminal devices. It is primarily used in low-power devices such as POS machines, all-in-one computers, and commercial displays. The module provides DC power to user devices through Ethernet cables, effectively simplifying wiring complexity while reducing user costs.

The TSD-V187 module does not include a network filter. It processes only the electrical signals within the PoE signal and outputs a DC 5V 3A signal.

Dimensions


49.98721 (mm)
33.91161 (mm)
8.1788 (mm)
34.01241 (mm)
40.00501 (mm)
2.8826 (mm)
m2
ST
POE-HE-V187
AC
AC

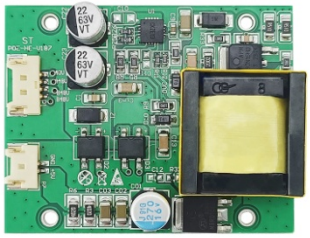
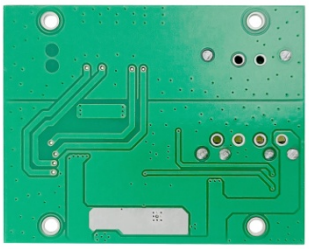
Interface Definition



Application Scenarios

<table>
<tr><td>  </td><td rowspan="3">  </td></tr>
<tr><td>Outdoor advertising screen</td></tr>
<tr><td>  </td></tr>
<tr><td>POS machine</td><td>All-in-one computer</td></tr>
</table>

Product Detail

Product Package

Package Size: 41*29*32 cm (L*W*H)

MPQ: 560 PCS

N.W: 11.2 kg

G.W: 12.2 kg