深圳市拓视盾科技有限公司
Shenzhen Tstone Technology Co. ,Ltd

SPECIFICATION FOR APPROVAL

CUSTOMER :

PRODUCT NAME : 30W Small Form Factor Industrial Grade PoE PD Module

PRODUCT MODEL: TSD-V212

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!

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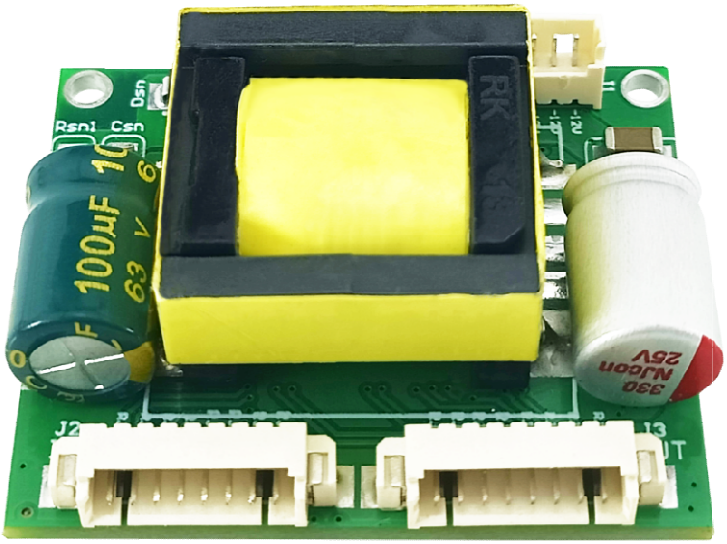
PRODUCT: 30W Small Form Factor Industrial Grade PoE PD Module

MODEL: TSD-V212



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

TSD-V212 complies with the IEEE 802.3af/at PoE international standard protocol. It can receive PoE signals from PSE devices through handshake protocols and stably output 12V DC power, achieving simultaneous transmission of power and data communication.

With a maximum output power of 30W, TSD-V212 is primarily used in advertising integrated machines, digital class signage systems, and commercial display terminals. The module significantly reduces wiring complexity for equipment and expands deployment scenarios for user devices.

Product Description

The TSD-V212 module features one input interface with an eight-pin PH1.25mm horizontal connector for receiving 38-56V DC PoE signals, and two output interfaces: an 8-pin PH1.25mm horizontal connector for data signals and an 8-pin PH1.25mm vertical connector for 12V DC output.

Dimensions: 38×32×14.5mm, Max.Module Height: 14.5mm,PCB Thickness: 1.6mm.PCB Design: Square structure, double-sided board with taller components concentrated on one side. PCB surface coated with glossy green solder mask. The diameter of the screw holes is Φ=2.2mm×2, hole-center distance: 34mm. Net Weight: 12g.

Equipped with an isolation transformer, TSD-V212 is an electrically isolated PD module providing safety protection. The circuit incorporates thermal overload, over-voltage, over-current, and short-circuit protection. Transmission Rate: 10/100/1000Mbps auto-negotiation, The module supports a wide DC input voltage range of 38-56V.Output Voltage: 12V DC, Output Current: 2.5A (max),Maximum Output Power: 30W.

The TSD-V212 meets the EMC requirements specified in IEC 61000-4-2/3/4/5/6. It has obtained authoritative certifications including CE, FCC, and RoHS. The compact module enables flexible installation and rapid multi-scenario deployment. Recognized for exceptional reliability and versatile applicability, it has earned high acclaim from users.

Product Features

- Input: Wide-range PoE DC 38-56V
- Output:DC 12V MAX 2.5A
- Compliance: IEEE 802.3af/at PoE International Standard

- Certifications: CE, FCC, RoHS
- EMC Standards: Meets IEC 61000-4-2/3/4/5/6 Requirements
- RJ12+ RJ36- / RJ45+ RJ78- Fully Compatible
- Transmission Rate: 10/100/1000M Auto-Negotiation
- Gigabit High-Power Network Filter, Supports High-Power Devices
- High-Frequency Low-Resistance Electrolytic Capacitors to Reduce High-Frequency Loss and Heat
- Solid Capacitors: High Stability and Long Lifespan
- High-Temperature Flame-Retardant Connector
- Premium Original High-Precision Electronic Components
- High-Power, High-Conductivity, Low-Impedance Transistors
- Pure Copper Pins for Excellent Conductivity and Heat Dissipation
- High-Temperature-Resistant Eco-Friendly PCB
- Lead-free manufacturing process
- Isolation Transformer: Ensures Safety and Signal Integrity
- Conversion Efficiency: ≧85%
- Protection Features: Short-Circuit Protection, Overload Protection, Overheat Protection, Overvoltage Protection
- Surge Protection: 4KV lightning surge resistance
- 80mm Connecting Cable for Easy Installation

Specifications

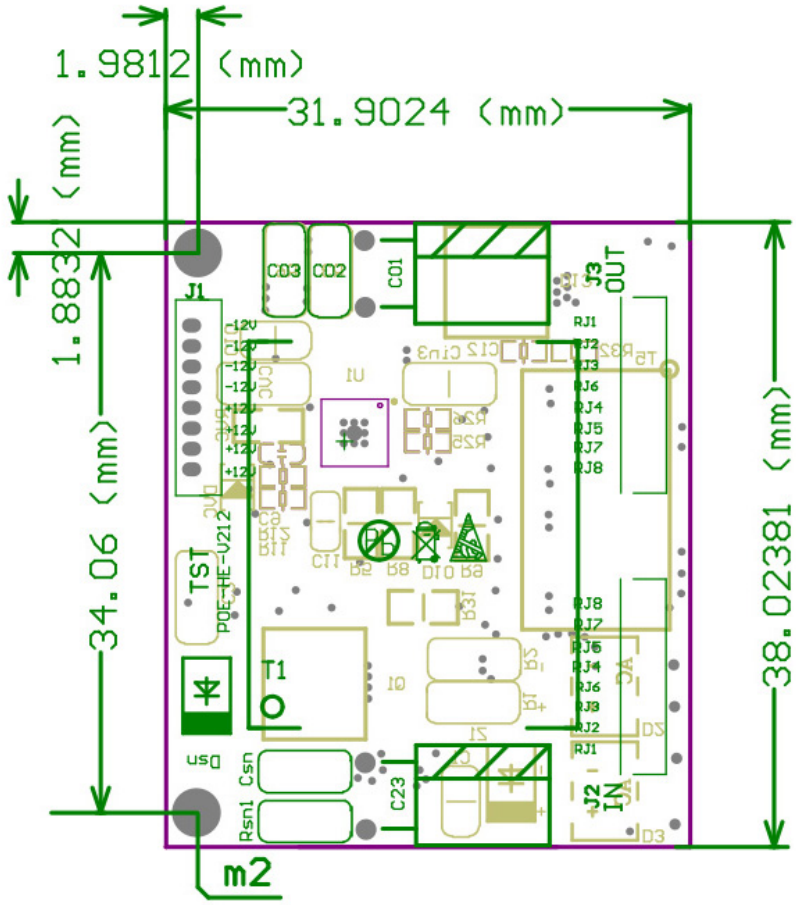
Product parameter table	
Product Name	30W Small Form Factor Industrial Grade PoE PD Module
Product Model	TSD-V212
PoE Standard	IEEE802.3af/at
Input Voltage	PoE: DC38-56V
Output	DC 12V MAX 2.5A
Conversion Efficiency	≧85%
PoE Pin	RJ12+ RJ36- / RJ45+ RJ78- Fully compatible

Conversion Mode	Isolated type
Data Rate	10/100/1000M Auto-Negotiation
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 (8-Pin PH1.25mm Socket): DC 38-56V IN Output Port (8-Pin PH1.25mm Socket): DC 12V OUT Output Port (8-Pin PH1.25mm Socket): Data OUT
Function	/
Material	FR-4
Color	glossy green solder mask
Accessories	/
EMC	IEC 61000-4-2/3/4/5/6
Temperature	-20～60℃ For Operating -30～80℃ For Storage
Humidity	RH95% MAX (Non-condensation)
Weight	N.W: 12g
Dimension	38*32*14.5mm
Package	Blister packaging tray

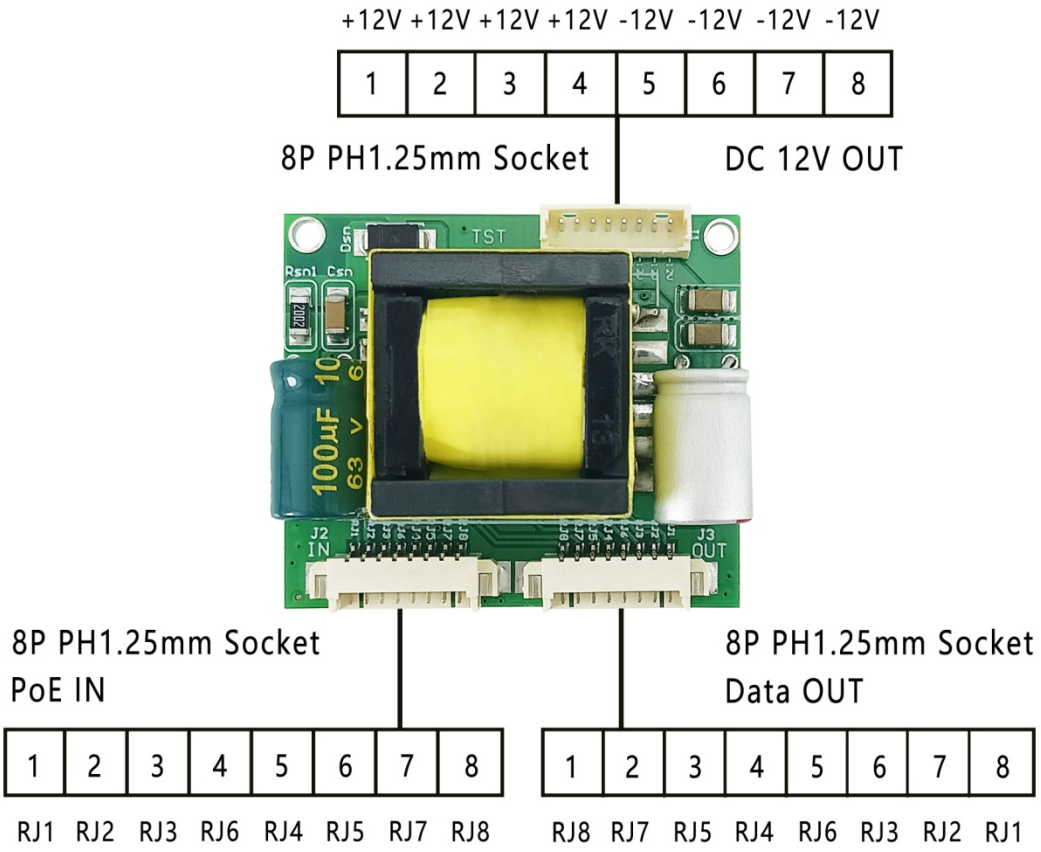
Product Applications

The TSD-V212 module drastically simplifies equipment installation and lowers deployment costs. Its s mall form factor, lightweight construction, and robust performance make it ideal for commercial displays, smart education, financial terminals, and industrial automation, delivering a highly reliable and adaptable p ower solution.

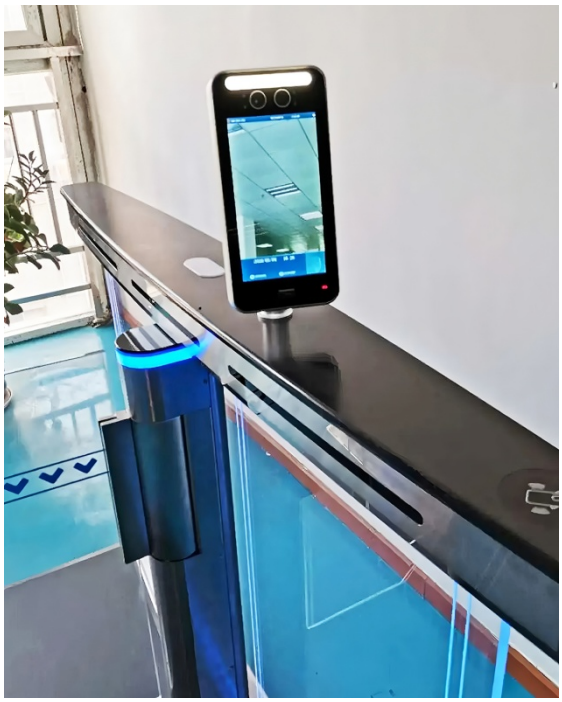
Dimensions


1.9812 (mm)
31.9024 (mm)
1.8832 (mm)
34.06 (mm)
38.02381 (mm)
J1
J3
OUT
J2
IN
C01
C02
C03
C23
T1
TST
POE-HE-V212
Dsn
Csn
Rsn1
m2

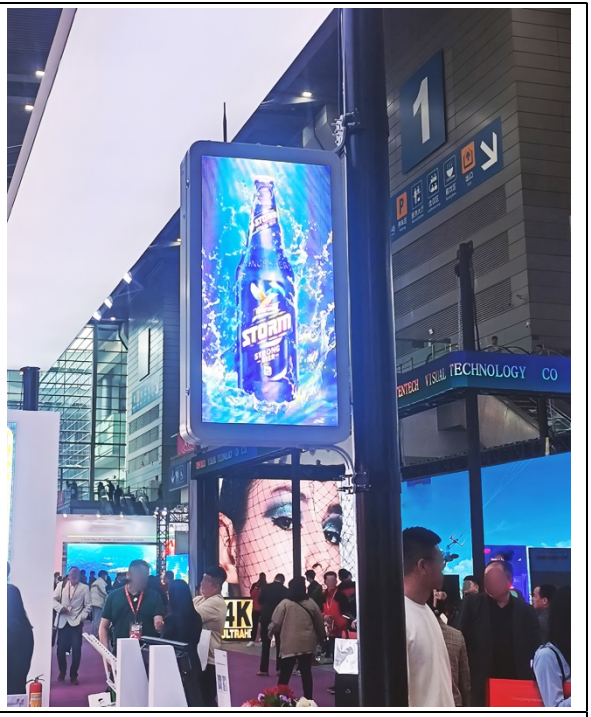
Interface Definition



Application Scenarios



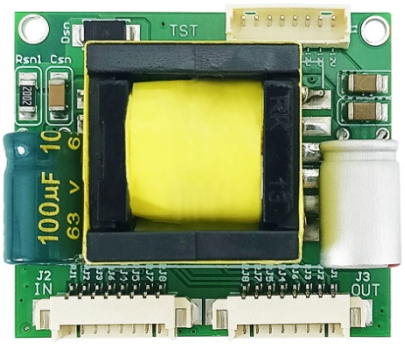
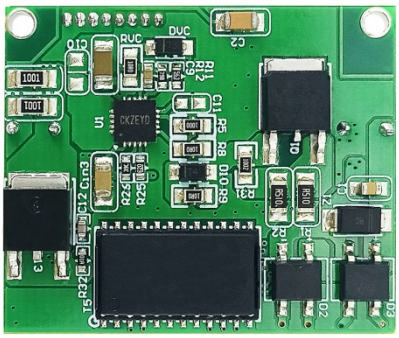
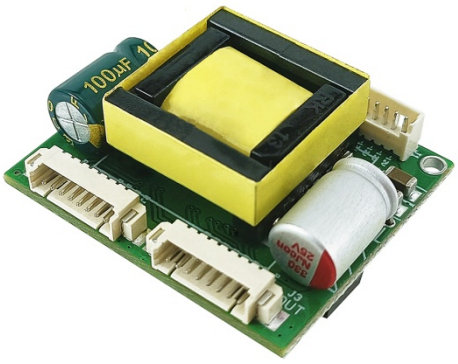
Access Control Display



Digital Advertising Display

PoE Explosion-Proof Electric Clock

Product Detail

Product Package

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

MPQ: 500 PCS

N.W: 9 kg

G.W: 10.5 kg