



SPECIFICATION FOR APPROVAL

CUSTOMER : _____

PRODUCT NAME : 30W DC 12V Power Supply PoE Module (Active)

PRODUCT MODEL : TSD-V105H

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

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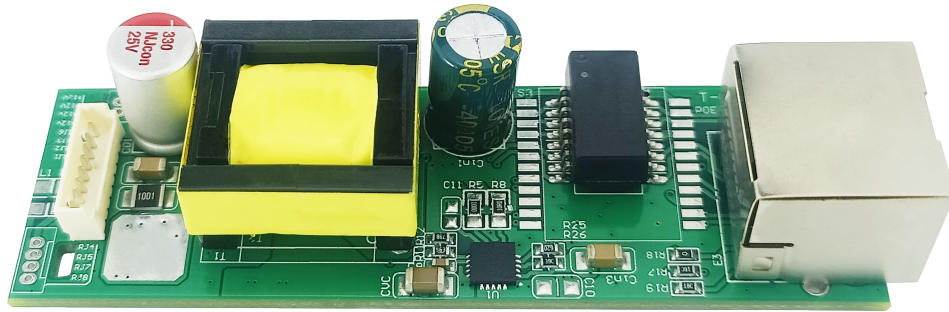
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PRODUCT: 30W DC 12V Power Supply PoE Module (Active)

MODEL: TSD-V105H



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 10M BASE-T and 100M BASE-T. IEEE802.3af/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-V105H module complies with the IEEE 802.3af/at PoE standard protocol and features handshake recognition. It can directly receive PoE signals through the RJ45 Ethernet port. This module is mainly used in devices such as IP broadcasting systems, cameras, and wireless bridges. With a maximum output power of 30W, it can provide a stable 12V 2.5A DC power supply for connected devices.

The TSD-V105H can separate PoE signals, delivering stable data signals and electrical power to non-PoE devices. This effectively addresses the issue of user devices not supporting PoE-powered networks, enabling seamless compatibility between modern PoE network systems and traditional network devices.

The TSD-V105H product series includes three variants:

TSD-V105H: Transmission speed up to 10/100 Mbps;



TSD-V105H-G: Transmission speed up to 10/100/1000 Mbps;

TSD-V105H-2.5G: Transmission speed up to 10/100/1000 Mbps/2.5 G.

Product Description

The TSD - V105H module is equipped with one input Ethernet port and one output terminal block. Ethernet port (RJ45): It serves as a PoE input port, accepting an input DC voltage of 38 - 56V. 8 - pin PH1. 25mm female socket: This is the output port, which provides data output along with a DC voltage of 12 V and a current of 2.5A.

Dimensions and structure: The overall dimensions of the module are 80 * 23 * 17mm (Length * Width * Height). The thickness of the PCB board is 1.6mm, and the maximum thickness of the module is 17mm. The PCB adopts a double - layer structure with a square design. The components are arranged on both sides of the board, with large - sized components concentrated on the front side. The surface is coated with bright - green solder mask oil, making it both practical and aesthetically pleasing. The net weight of the module is 24g.

The TSD - V105H complies with the IEEE 802.3af/at PoE standard protocol. It has an adaptive transmission rate of 10/100M. The maximum output power of the module is 30W. It supports wide - voltage input of DC 38 - 56V, with a default output voltage of DC 12V. Other output voltages can be customized upon request.

The TSD - V105H is a PD module with isolation function. It is equipped with an EE19 skeleton isolation transformer, which can prevent faults such as electric leakage and short - circuits, effectively enhancing electrical safety performance. The EMC parameters of the module meet the requirements of IEC 61000 - 4 - 2/3/4/5/6 standards. It has obtained certifications such as CE, FCC, and RoHS. The circuit is equipped with multiple protection functions, including over - heat protection, over - voltage protection, over - load protection, and short - circuit protection. The product has achieved remarkable sales performance both at home and abroad, and its quality and performance have won the deep trust and recognition of users.

Product Features

- Complies with the international IEEE 802.3af/at Power over Ethernet (PoE) standard protocol.



- Electromagnetic Compatibility (EMC) meets the requirements of IEC 61000 - 4 - 2/3/4/5/6 standards.
- Certified by CE, FCC, and RoHS.
- Input: PoE wide - voltage DC 38 - 56V.
- Output: Data and Voltage DC 12V, maximum current 2.5A.
- PoE: Fully compatible with RJ12+ RJ36- / RJ45+ RJ78-.
- 4KV surge protection.
- Over - heat protection, over - voltage protection, over - load protection, and short - circuit protection.
- Conversion efficiency greater than 85%.
- Environmentally friendly, high - temperature - resistant PCB
- Adaptive transmission rate of 10/100M.
- Beige, high - temperature - resistant, flame - retardant material, vertical interface socket.
- High - frequency PoE filter for 100M Ethernet, enabling efficient data transmission.
- Original high - precision electronic components from well - known brands, ensuring stable performance.
- High - frequency, low - resistance electrolytic capacitors effectively reduce high - frequency losses and heat generation in the circuit.
- SMD (Surface Mount Device) solid capacitors offer a long service life and stable performance.
- High - power, high - conductivity, low - impedance transistors with stable performance and low heat generation.
- EE19 bobbin isolation transformer to enhance anti - interference ability.
- An 80mm connecting cable for convenient connection.

Specifications

Product parameter table			
Product Name	30W DC 12V Power Supply PoE Module (Active)		
Product Model	TSD-V105H	TSD-V105H-G	TSD-V105H-2.5G
PoE Standard	IEEE802.3af/at		
Input Voltage	PoE: DC 38-56V		
Output	voltage DC 12V MAX2.5A (Other Voltage can be customized)		
Conversion Efficiency	$\geq 85\%$		

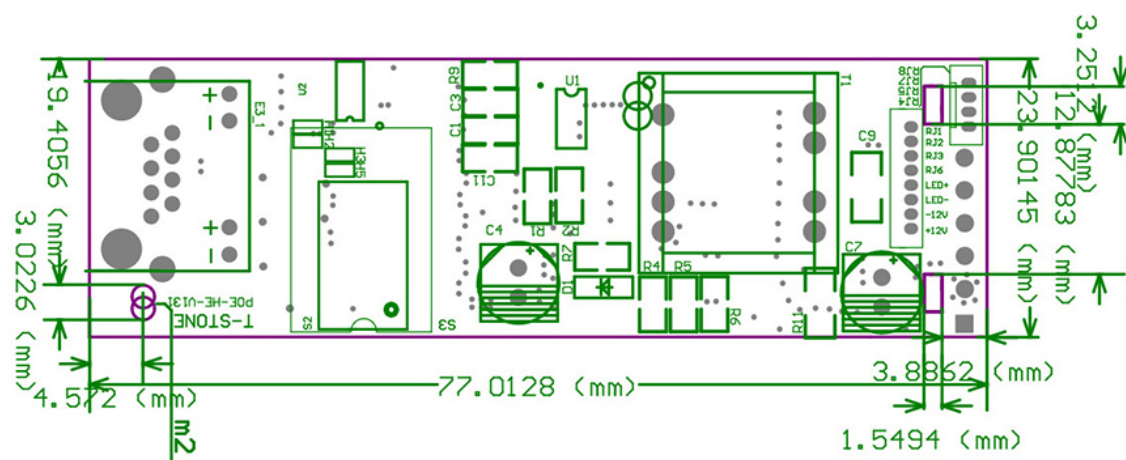


PoE Pin	PoE: RJ12+ RJ36- / RJ45+ RJ78- Fully compatible		
Conversion Mode	Isolated		
Data Rate	10/100M	10/100/1000M	10/100/1000M/2.5G
Transmission Distance	100 meters(Category 5e Cable (Cat5e))		
Surge Protection	4KV		
Circuit Protection	over - heat protection, over - voltage protection overload protection, and short - circuit protection.		
LED Indicator	/		
Interface	Input Port (RJ45 Jack): PoE 38V~56V IN Output Port (8Pin PH1.25mm terminal block): Data +DC 12V OUT		
Function	/		
Material	FR-4		
Color	Bright green		
Accessories	80mm Connecting Line		
EMC	IEC 61000-4-2/3/4/5/6		
Temperature	-30~65°C For Operating -40~85°C For Storage		
Humidity	RH95% MAX (Non-condensation)		
Weight	N.W: 24g		
Dimension	80 *23 *17mm		
Package	Anti - static bubble wrap		

Product Application

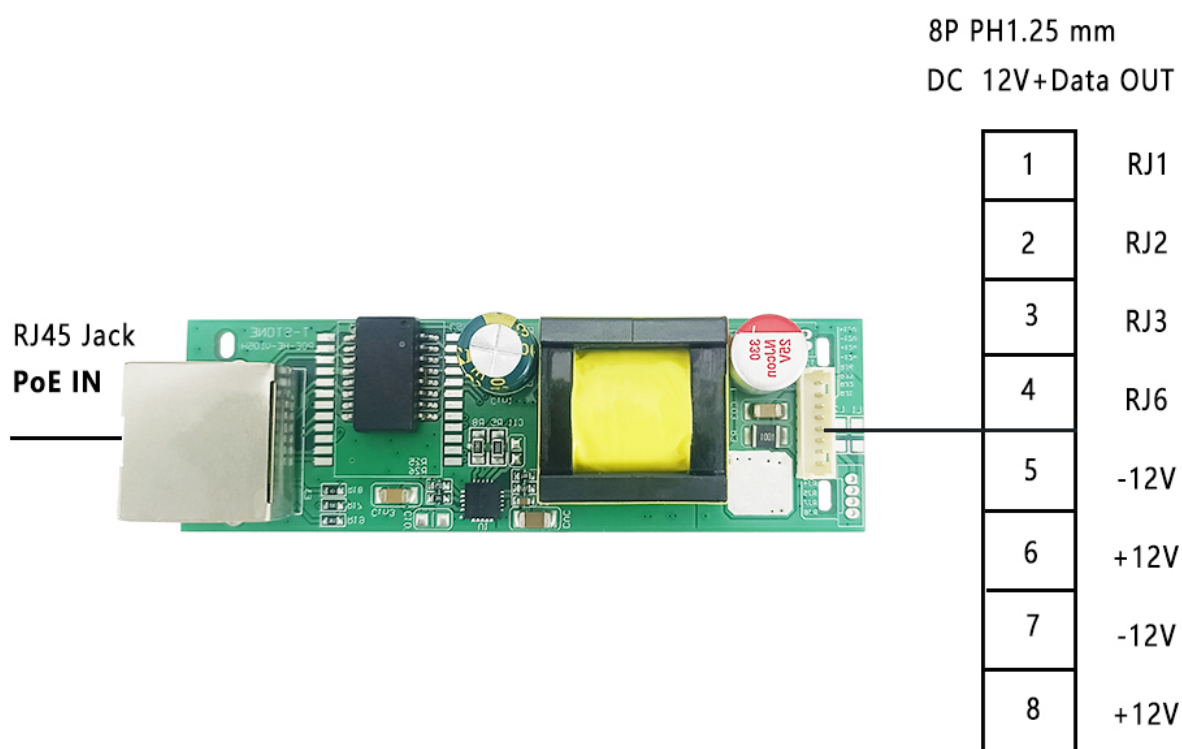
The TSD - V105H module is small in size, light in weight, and easy to install. It can be flexibly applied in various PoE power - supply scenarios, providing users with a reliable - technology and low - cost wiring option. This module can also safely power traditional network devices (such as IP phones, wireless routers, etc.), while maintaining the network connection to ensure the stability and compatibility of PoE power supply.

Dimensions



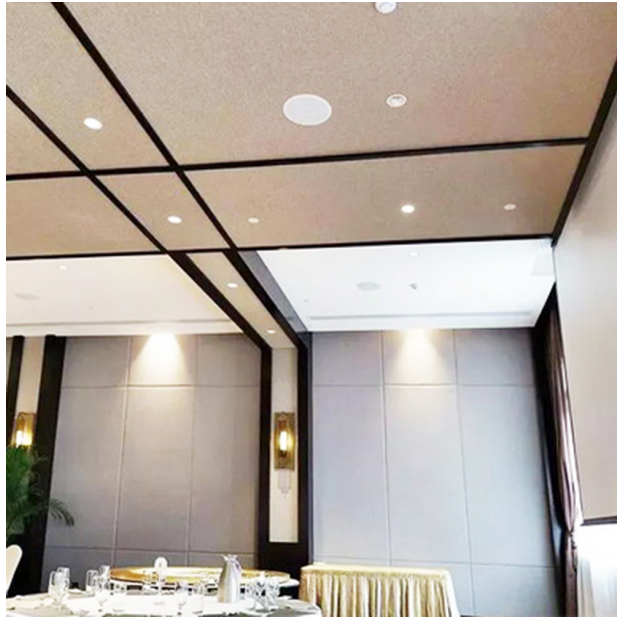


Interface Definition





Application Scenarios



Ceiling speaker



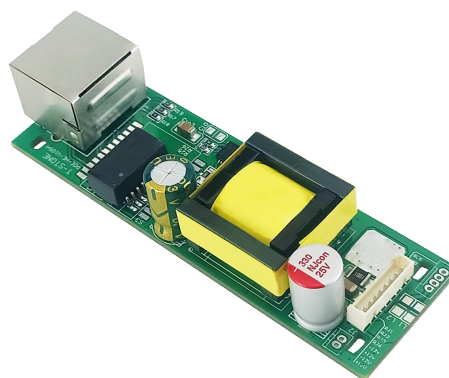
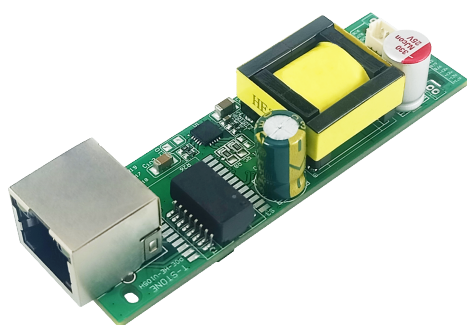
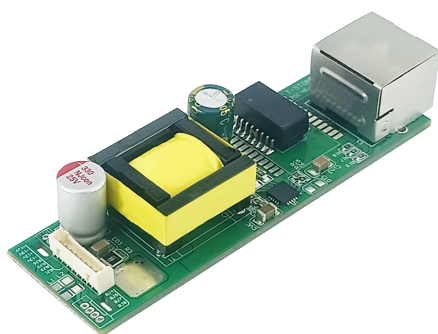
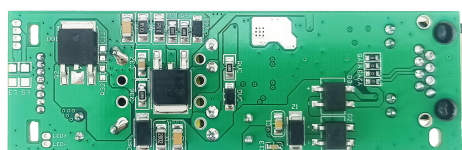
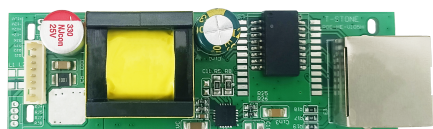
Outdoor sound column



Road monitoring



Product Detail





Product Package



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

MPQ: 500 PCS

N.W: 12.0 Kg

G.W: 12.9 Kg