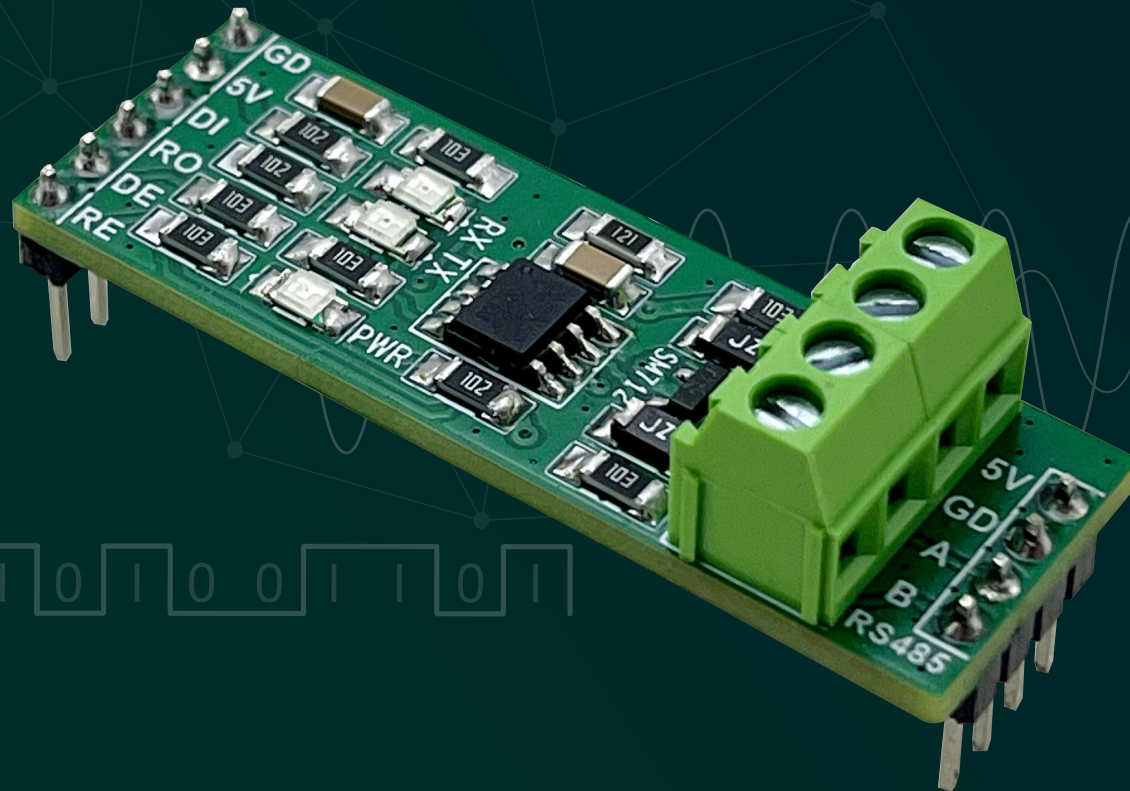




RS485/TTL Serial Converter Module

General Description

The **RS485/TTL Serial Converter Module** is a **TTL-to-RS485** interface designed to provide reliable serial communication between microcontrollers, embedded systems, and RS485-compatible devices. Built around the **MAX487 RS485 transceiver**, the module offers a compact and reliable solution for industrial automation, instrumentation, embedded systems, and other serial communication applications.

A dedicated **TTL header** provides direct access to **RE, DE, RO, and DI** signals, while onboard **Power, TX, and RX** LEDs provide communication status indication. Field connections are made through a four-position screw terminal and compatible header exposing **5 V, GND, RS485 A, and RS485 B** signals.

Features

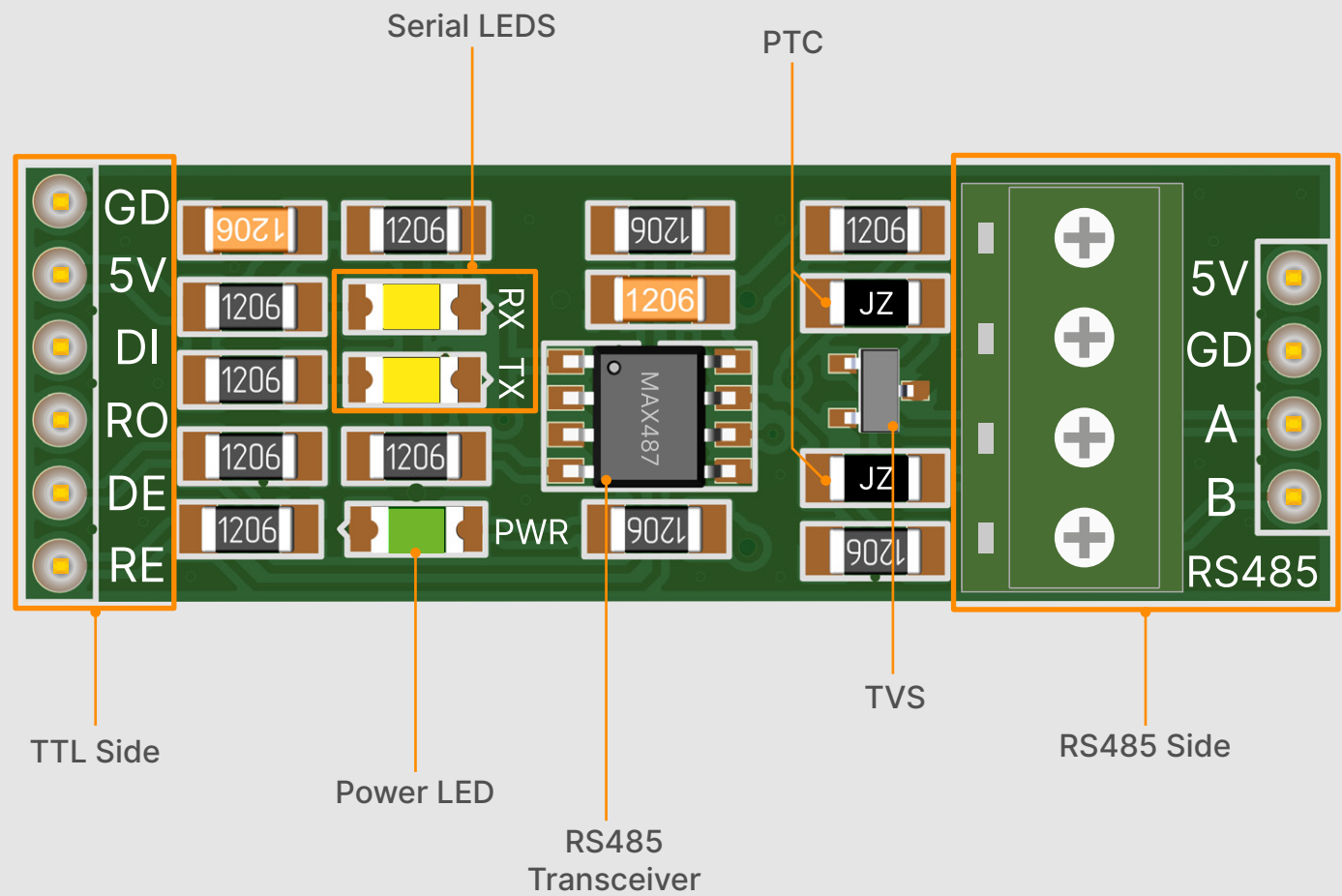
- **MAX487 half-duplex RS485 transceiver:**
 - Compliant with **TIA/EIA-485 standard**.
 - Maximum data rate: **250 kbps**.
 - **Multi-drop bus** network topology.
 - Supports up to **128 nodes**.
- **TTL UART interface:**
 - Direct access to **RE, DE, RO, and DI**.
 - **5 V TTL logic**.
 - DI input with on-board **10 k Ω pull-up** resistor for **a defined logic state**.
 - UART baud rate up to **2 mbps** (limited to 250 Kbps by MAX487).
- **RS485 interface:**
 - On-board **120 Ω** bus termination resistor.
 - Differential A/B communication lines.
 - **10 k Ω RS485 fail-safe** biasing resistors on A and B.

- **TVS array for ESD/transient protection.**
- **Onboard status LEDs:**
 - **Green:** Power indicator.
 - **Yellow:** TX and RX activity indicators.
- **Interfaces:**
 - **6-pin TTL header:** 5 V, GND, RE, DE, RO, D I.
 - **4-pin header and screw terminal:** 5 V, GND, A, B.
- **Dimensions:** 45.6 X 15.2mm.

Applications

- Industrial Automation.
- PLC Communication.
- Building Automation Systems.
- RS485 Sensor Networks.
- Data Acquisition Systems.
- Embedded Development.
- Smart Metering.
- SCADA Systems.
- Modbus RTU Communication.
- Long-Distance Serial Communication.

RS485/TTL Serial Converter Module Overview



TTL Interface

Pin	Description
5V	Module Supply.
GND	Ground.
RE	Receiver Enable, Active-Low.
DE	Driver Enable, Active-High.
RO	Receiver Output.
DI	Driver Input.

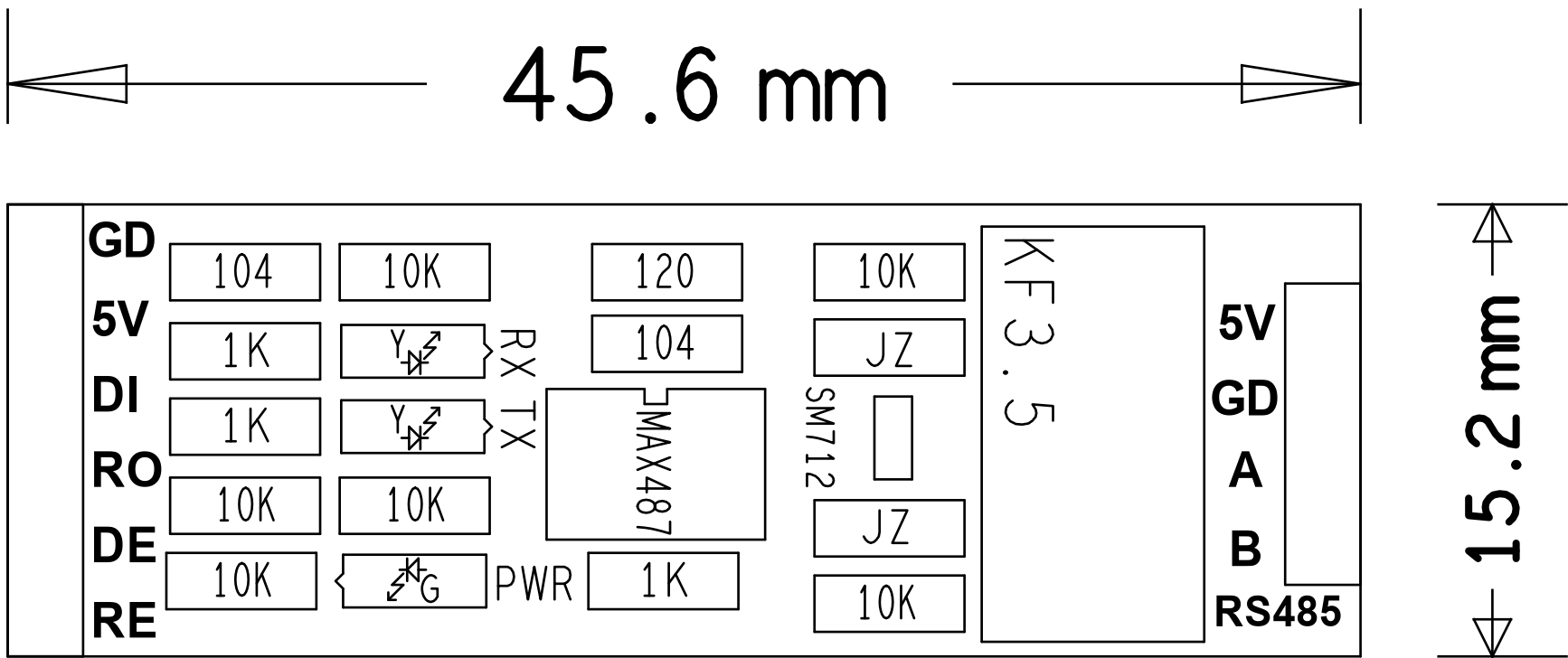
RS485 Terminal Description

Pin	Description
5V	5 V Supply Output.
GND	Ground.
A	RS485 Non-Inverting Line.
B	RS485 Inverting Line.

Electrical Characteristics

Parameter	Value
Supply Voltage	5 V DC
Logic Interface	5 V TTL UART
UART Baud Rate	Up to 2 Mbps (Limited to 250 Kbps by MAX487)
RS485 Data Rate	Up to 250 kbps
Communication Mode	Half-Duplex
Interface Standard	TIA/EIA-485
RS485 Termination	120 Ω
Maximum Nodes	Up to 128

Mechanical Dimensions Diagram



For the latest product updates and documentation, visit: www.fares-pcb.com
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