

MORNSUN®

SINGLE HIGH SPEED RS485 ISOLATION TRANSCEIVER MODULE

-----TD301D485H(3.3V Power supply)
 TD501D485H(5.0V Power supply)

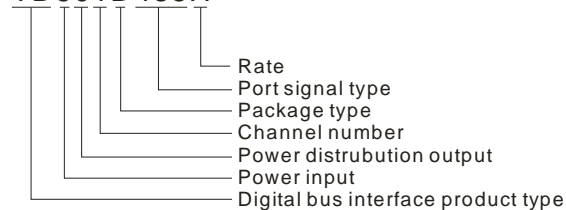


FEATURES

- | 2-port electrical isolation between input and output
- | Integrated isolated DC/DC converter
- | Bus protection
- | Isolation voltage 2.5KVDC
- | Operating temperature range:-40°C ~ +85°C
- | High speed data rate: 115200bps
- | Connect up to 32 nodes on one bus
- | Low electromagnetic radiation
- | High electromagnetic immunity

PART NUMBER SYSTEM

TD501D485H



GENERAL DESCRIPTION

TD301D485H/TD501D485H series are transceiver isolation module with integrated duplex power isolation, electrical isolation, and RS-485 interface bus protector; The isolation RS-485 circuits of using a piece of power isolation module, three light couplings and RS-485 transceivers and device are only need to adopt a RS485 isolation module now. Simplify the customers on the isolation requirements of the design; Products can be easily embedded in the user equipment, achieve function of RS-485 network connection.

SELECTION GUIDE

Model	Input
TD301D485H	3.17V~3.45V
TD501D485H	4.75V~5.25V

ELECTRICAL CHARACTERISTICS

Power Input	Input Current(no Load)	≤35mA
	Send current	≤70mA
Input	Serial interface	Compatible with + 5 V and + 3.3 V UART Interface
	Pin current	$I_{TXD}<2mA$; $I_{RXD}<2mA$; $I_{CON}<5mA$
Output	485 Bus interface	Standard interface RS485,A 4.7KΩ pullup to Vcc, B 4.7KΩ pulldown to GND

TRANSMISSION CHARACTERISTICS

Transmission Rate	Maximum 115200 bps					
Data Delay	The delay time from the receiving data switch to the send data : 30 μs(min), 100 μs(max).					
The Number of Nodes	Connect up to 32 nodes on one bus					
Transceiver control	Contrary to common 485 transceiver control level					
Truth Table	Sending Status	Control	Input	Output		
		CON	TXD	A	B	Line state
		0	1	1	0	Normal
	Receiving Status	0	0	0	1	Normal
		Control	Input	Output		
		CON	A-B	RXD		
		1	0.2V	1		
1	-0.2V	0				

ISOLATION CHARACTERISTICS

Galvanic Isolation	2-port isolation(Between input and output)
Isolation Voltage	2.5KVDC(Tested for 1minute and leakage current < 5mA, humidity <95%)

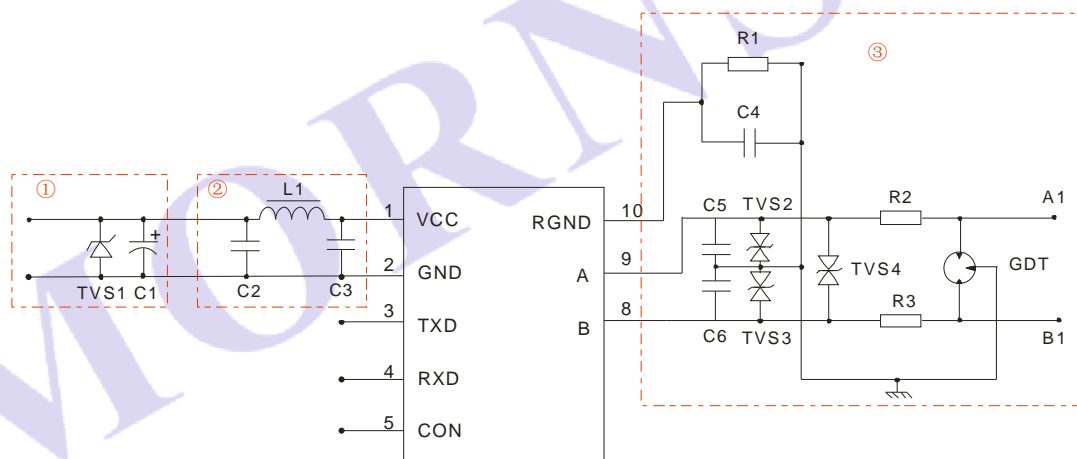
EMC SPECIFICATIONS

EMI	CE	CISPR22/EN55022	CLASS A	(External Circuit Refer to Figure 1-②)	
	RE	CISPR22/EN55022	CLASS A	(External Circuit Refer to Figure 1-②)	
EMS	ESD	IEC/EN61000-4-2	Contact ±4KV	perf. Criteria B	
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria A	
	EFT	IEC/EN61000-4-4	Power Port ±2KV	perf. Criteria B	(External Circuit Refer to Figure 1-①)
Signal Port ±1KV			perf. Criteria B	(External Circuit Refer to Figure 1-③)	
EMS	Surge	IEC/EN61000-4-5	Power Port ±1KV/2KV	perf.Criteria B	(External Circuit Refer to Figure 1-①)
		IEC/EN61000-4-5	Signal Port ±4KV/6KV	perf. Criteria B	(External Circuit Refer to Figure 1-③)
	CS	IEC/EN61000-4-6	3 Vr.m.s	perf. Criteria A	

OTHER CHARACTERISTICS

Ambient Temperature	Operating temperature: -40℃~+85℃
	Transport and Storage temperature:-50℃~+105℃
Size	19.9*16.9*7.05 (Unit: mm)
Weight	4 g, typ
Application Environment	The presence of dust, fierce vibration, impulsion and corrosive gas may cause damage to the product

EMC RECOMMENDED CIRCUIT



(Figure1)

Model	TD301D485H	TD501D485H
C1	220uF/10V(Electrolytic capacitor)	
TVS1	SMCJ5.0A	SMCJ6.5A
C2,C3	1uF /25V	
L1	10μH	
C4	1nF /2KV	
R1	1MΩ	
C5,C6	100pF/100V	
TVS2,TVS3, TVS4	SMBJ15CA	
R2,R3	10Ω/2W(Wire wound resistance)	
GDT	B3D090L-C	

APPLICATION NOTICE

1. Please read the user manual carefully before using. If any question please contact our FAE.
2. Please do not use this product in hazardous area.
3. The power supply of this product should be 24VDC power source. It is forbidden to use 220VAC power supply.
4. To avoid invalid explosion protection function, or any failure, disassembling this product is forbidden.

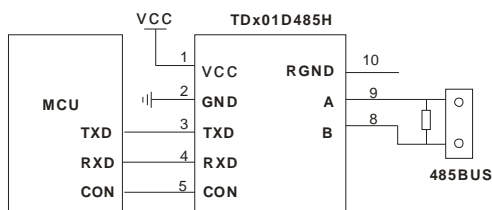
AFTER-SALES SERVICE

1. Products are carefully inspected and quality controlled during production and before shipment. If they operated abnormally or there was anything wrong, please contact our agent from which you purchased or MORNSUN FAE as soon as possible.
2. MORNSUN warranty our product for 3 years from manufacturing date. During this period, MORNSUN will repair or replace the product if product was found to have manufacturing defect.

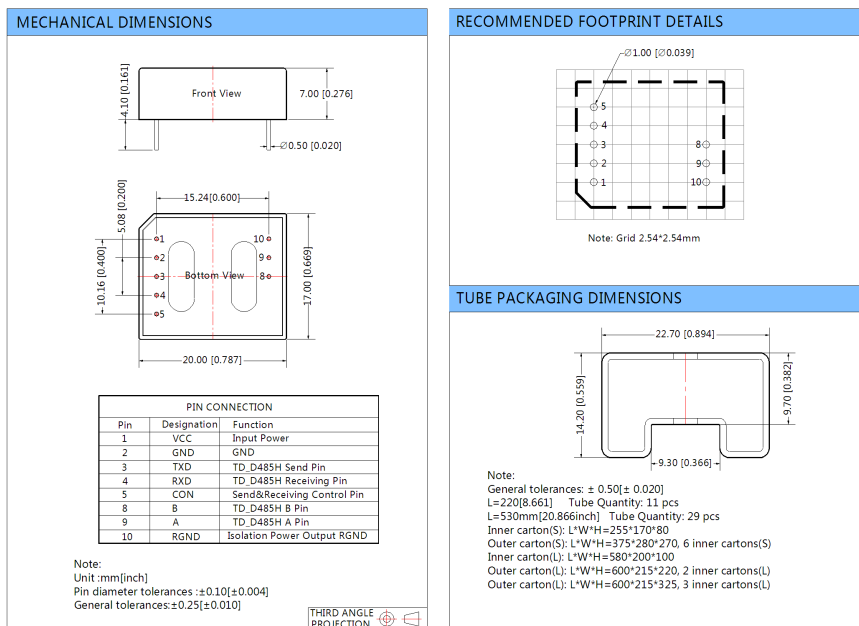
APPLICATION CIRCUIT

You can see " A APPLICATION GUIDE TO ISOLATION TRANSMITTER".

TYPICAL APPLICATIONS CIRCUIT DIAGRAM



OUTLINE DIMENSIONS, RECOMMENDED FOOTPRINT & PACKAGING



Note:

1. All specifications are measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. In this datasheet, all the test setup and methods are based on our corporate standards.
3. All characteristics are for listed models, and non-standard models may perform differently. Please contact our technical support for more detail.
4. Contact us for your specific requirement.
5. Specifications are subject to change without prior notice.

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