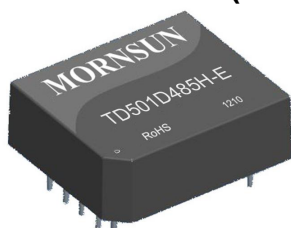


MORNSUN®

SINGLE HIGH SPEED RS485 ISOLATION TRANSCEIVER MODULE(ENHANCED VERSION)

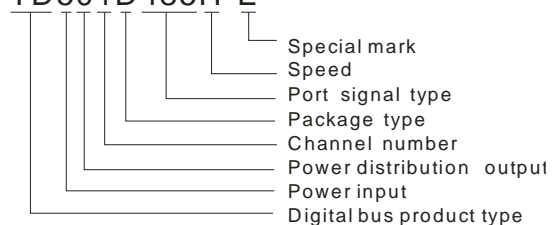
—TD301D485H-E(3.3V Power supply)
TD501D485H-E(5.0V Power supply)



RoHS

PART NUMBER SYSTEM

TD501D485H-E



FEATURES

- I Baud rate high up to 500Kbps
- I Connect up to 256 nodes on one bus
- I 2500VDC isolation input and output
- I Integrated high efficiency isolated DC/DC converter
- I Operating temperature range: -40°C~ +85°C
- I ESD protection, perfect EMC recommend circuit

GENERAL DESCRIPTION

Single high rate RS485 isolation transceiver module TD301D485H-E/TD501D485H-E series are RS485 transceiver module with integrated isolated power, Signal isolated chip and the bus protection device.

Product's main function is to convert logic level to difference level of the 485 agreement, and it implements the function of signal isolation. Products is with isolation power. It can achieve 2500 VDC electrical isolation and have the function of ESD protection. Product can be easily embedded user equipment, makes the equipment easily implement connection of 485 protocol network .

SELECTION GUIDE

Model	Power Input
TD301D485H-E	3.17V~3.45V
TD501D485H-E	4.75V~5.25V

ELECTRICAL CHARACTERISTICS

Input Parameters Of Power Supply	Static current	≤40mA
	Power dissipation	≤0.2W
Input Parameters	Serial interface	Compatible with the UART control port of +5V and +3.3V
	Pin current	$I_{TXD} \leq 2mA$; $I_{RXD} \leq 2mA$; $I_{CON} \leq 5mA$
Output Parameters	485 Bus interface	Standard interface RS485, pull-up and pull-down resistor, whose value is 4.7K Ω , have been set to A/B line.

TRANSMISSION CHARACTERISTICS

Transmission Rate	Maximum 500Kbps					
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 256 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	Control	Input	Output		
		CON	A-B	RXD		
		1	0.2V	1		
	1	-0.2V	0			

ISOLATION CHARACTERISTICS

Electrical Isolation	Two-Port isolation(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	

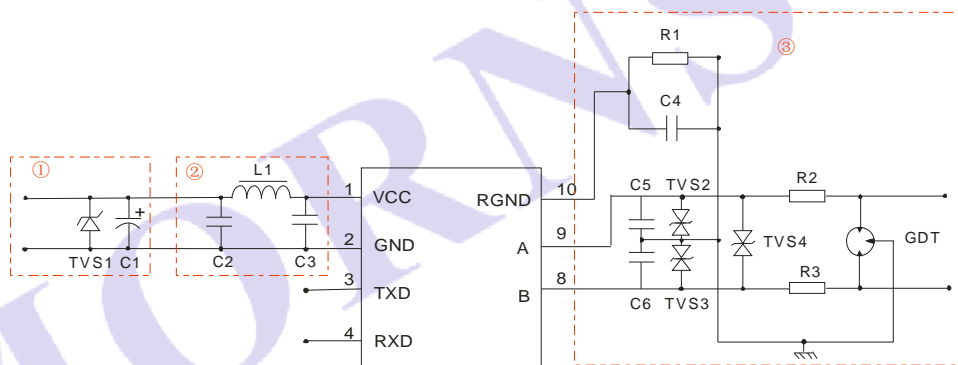
OTHER CHARACTERISTICS

Environmental Temperature	Operating temperature:-40℃~+85℃
	Transport and storage temperature: -50℃~+105℃
Operating Humidity	10%~90%
Size	19.9*16.9*7.05 (L*W*H) (Unit:mm)
Weight	Approx. 4g
Application Environment	The presence of dust, fierce vibration, impulsion and corrosive gas may cause damage to the product

Note:

- All specifications measured at TA=25℃, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
- All specifications stated in this datasheet are subject to the above listed models only. For specifications of non-standard models, please contact our technical support team.

EMC RECOMMENDED CIRCUIT



(Figure 1)

(Figure 1)overall plan(detail parameter refer to item)

Recommended external circuit parameters:

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

APPLICATION NOTE

- Please read the user manual carefully before using. If any question please contact our technical support department.
- Please do not use this product in hazardous area.
- To avoid invalid explosion protection function, or any failure, users disassemble this product is forbidden.

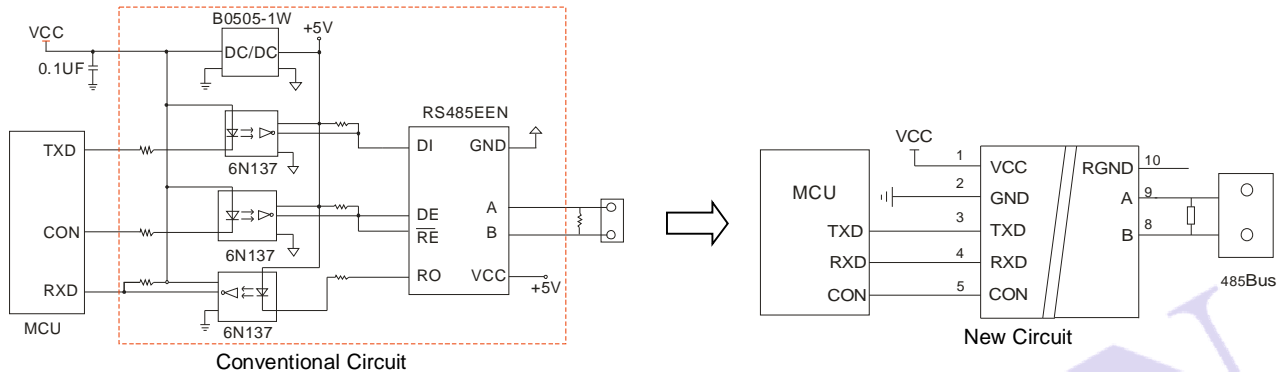
AFTER SERVICE

1. Products are carefully inspected and quality control during production and before shipment. If they operated abnormally or there were anything wrong, please contact our agent where 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.

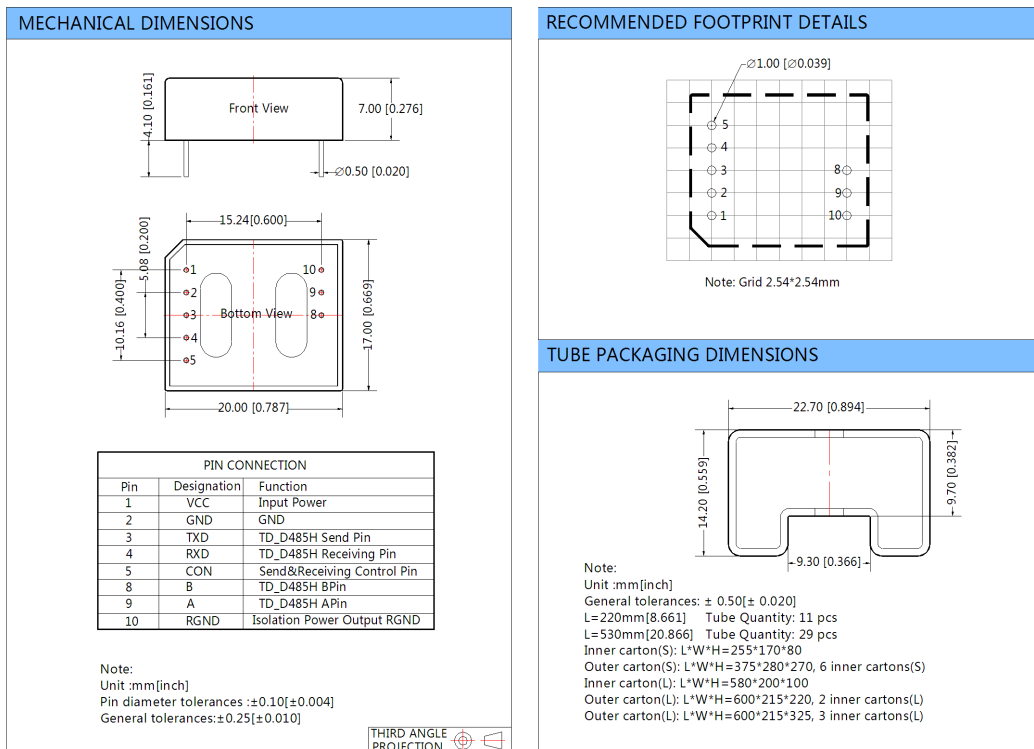
APPLICATION GUIDE

See the communication interface product application guide.

TYPICAL APPLICATIONS CIRCUIT DIAGRAM



OUTLINE DIMENSIONS, RECOMMENDED FOOTPRINT & PACKAGING



Note:

1. All specifications 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 meant for listed model, non-standard models may perform differently, you can contact MORNSUN FAE for more details.
4. Contact us for your specific requirement.
5. Specifications are subject to change without prior notice.

MORNSUN Science & Technology Co.,Ltd.

Address: No. 5, Kehui St. 1, Kehui development center, Science Ave., Guangzhou Science City, Luogang district, Guangzhou,P.R.China.

Tel: 86-20-38601850

Fax:86-20-38601272

E-mail: info@mornsun.cn

[Http://www.mornsun-power.com](http://www.mornsun-power.com)