

MORNSUN®

SINGLE HIGH SPEED RS232 ISOLATION TRANSCEIVER

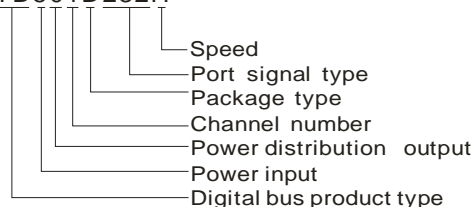
—TD301D232H(3.3V Power supply)
TD501D232H(5.0V Power supply)



RoHS

PART NUMBER SYSTEM

TD501D232H



FEATURES

- I Meet EIA/TIA-232-F standard
- I Baud rate high up to 115200bps
- 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

High speed 232 isolation transceiver TD301D232H/TD501D232H series are RS485 transceiver module with integrated isolation power, Signal isolation chip and RS232 transceiver chip.

Product's main function is to convert logic level to 232 protocols level, achieve signal isolation. The product is with constant-voltage source isolation power. It can achieve 2500 VDC electrical isolation. Products can be easily embedded in the user equipment, achieve function of 232 protocols network connection easily.

SELECTION GUIDE

Model	Power Input
TD301D232H	3.0V~3.6V
TD501D232H	4.5V~5.5V

ELECTRICAL CHARACTERISTICS

Input Parameters Of Power Supply	Static current	TD301D232H≤50mA TD501D232H≤35mA
	Power dissipation	≤0.25W
Input Parameters	Serial interface	Compatible with the UART control port of +5V and +3.3V
	Pin current	I _{TXD} ≤2mA; I _{RXD} ≤2mA
Output Parameters	Protocols interface	RS-232 interface

TRANSMISSION SPECIFICATIONS

Data Rate	115.2Kbps (max.)
Data delay	100μs(max.)

ISOLATION SPECIFICATIONS

Electrical Isolation	Two-port isolation (input and output)
Isolation Voltage	2500VDC(Tested for 1 minute and leakage current < 5mA, humidity < 95%)

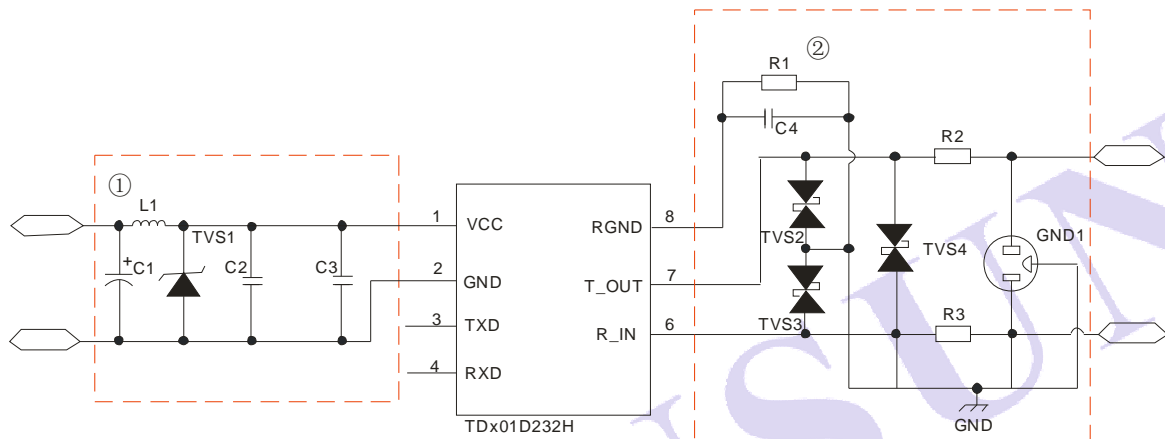
EMC SPECIFICATIONS

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

OTHER CHARACTERISTICS

Environmental temperature	Operating temperature:-40°C ~+85°C
	Transport and storage temperature: -50°C ~+105°C
Operating Humidity	10%~90%
The Max. Case Temperature	50°C(Ta=25°C)
Cooling	Free air convection
Size	19.9*16.9*7.05mm (L*W*H) (Unit:mm)
Weight	About 4 g
Application Environment	No dust, fierce vibration, impulsion and corrosive gas

EMC RECOMMENDED CIRCUIT



(Figure 1)

Recommended external circuit parameters:

Model	TD301D232H	TD501D232H
C1	220uF/10V(Electrolytic capacitor)	
TVS1	SMCJ5.0A	SMCJ6.5A
C2,C3	1 μ F/25V	
L1	130μH	
C4	1nF/2000V	
R1	1MΩ	
TVS2,TVS3	SMBJ18CA	
TVS4	SMBJ30CA	
R2,R3	10Ω/2W(Wire-wound resistor)	
GDT1	B3D090L-C	

APPLICATION NOTE

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

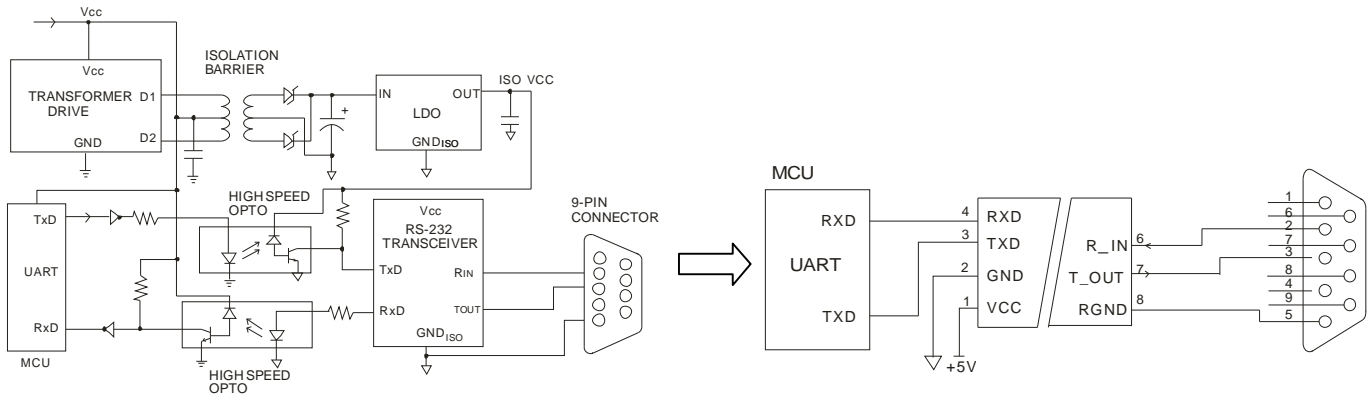
AFTER SERVICE

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 near you 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

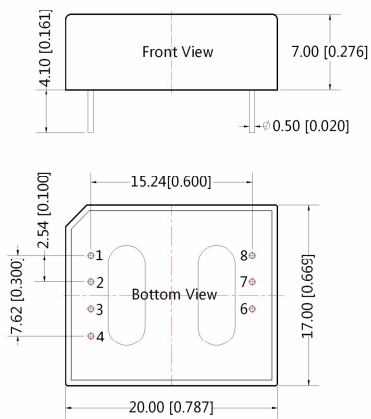


Conventional circuit

New circuit

OUTLINE DIMENSIONS, RECOMMENDED FOOTPRINT & PACKAGING

MECHANICAL DIMENSIONS

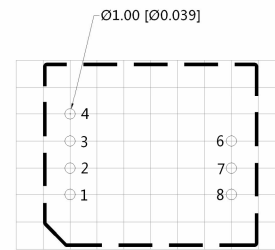


PIN CONNECTION		
Pin	Designation	Function
1	VCC	Input Power+
2	GND	GND
3	TXD	TTL/CMOS Input
4	RXD	TTL/CMOS Output
6	R_IN	RS-232 Input
7	T_OUT	RS-232 Output
8	RGND	Isolation Power Output RGND

Note:
Unit :mm[inch]
Pin diameter tolerances :±0.1mm[±0.004inch]
General tolerances:±0.25mm[±0.01inch]

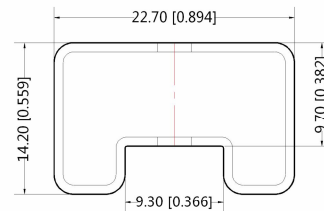
THIRD ANGLE PROJECTION

RECOMMENDED FOOTPRINT DETAILS



Note : Grid 2.54*2.54mm

TUBE PACKAGING DIMENSIONS



Note:
Unit :mm[inch]
General tolerances: ± 0.50mm[± 0.020inch]
L=220mm[8.661inch] Tube Quantity: 10 pcs
L=530mm[20.866inch] Tube Quantity: 25 pcs
Inner carton(S): L*W*H=255*170*80 mm;
Outer carton(S): L*W*H=375*280*270mm, 6 inner cartons(S);
Inner carton(L): L*W*H=580*200*100mm;
Outer carton(L): L*W*H=600*215*220mm, 2 inner cartons(L);
Outer carton(L): L*W*H=600*215*325mm, 3 inner cartons(L);

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 test methods and setup 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.

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