

## DUPLEX HIGH RATE H-CAN ISOLATION TRANSCEIVER MODULE

—TD301DCANH2 (3.3V Power supply)  
TD501DCANH2 (5.0V Power supply)

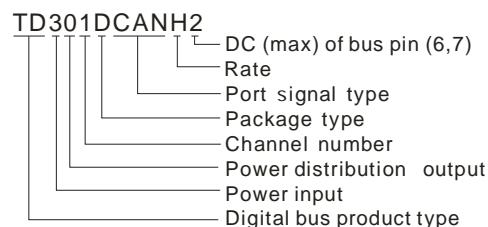


RoHS

### FEATURES

- | Two-port electrical isolation input and output
- | Integrated Isolated DC/DC converter
- | 2500VDC isolation
- | Operating temperature range: -40°C ~+105°C
- | High speed data rate : 1 Mbps
- | Complies with ISO 11898 standard
- | An unpowered node does not disturb the bus lines
- | Connect up to 110 nodes on one bus
- | Low electromagnetic radiation
- | High electromagnetic immunity
- | Preventing overvoltage
- | ESD protection, complete EMC recommended circuit

### PART NUMBER SYSTEM



### GENERAL DESCRIPTION

High speed H type CAN isolation transceiver series TD301DCANH2/TD501DCANH2 are integrated power isolation power, Signal isolation chip, CAN transceiver chip and bus protective devices in one isolation module.

The main function of Products is to switch from logic level to CAN bus difference level, achieve signal isolation. The product is with constant-voltage source isolation power. It can achieve 2500 VDC electrical isolation, and has the function of ESD protection. Products can be easily embedded in the user equipment, achieve function of CAN bus network connection easily.

### SELECTION GUIDE

Model	Power Input
TD301DCANH2	3.0V~3.6V
TD501DCANH2	4.5V~5.5V

### ELECTRICAL CHARACTERISTICS

Input Parameters Of Power Supply	Static current	TD301DCANH2≤35mA TD501DCANH2≤30mA
	Power dissipation	<0.5W
Input Parameters	Serial interface	Compatible with the CAN control port of +5V and +3.3V
	Pin current	I <sub>TXD</sub> ≤2mA; I <sub>RXD</sub> ≤2mA
Output Parameters	CAN bus interface	Up to standard of ISO-11898, twisted-pair output
	The max DC voltage of bus pin	-27V~+40V
	Bus protection	Over-voltage bus protected, thermally protected and high-voltage transient protected

### TRANSMISSION SPECIFICATIONS

Data Rate	40K~1Mbps
The Number of Nodes	110 nodes (min.)

### 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

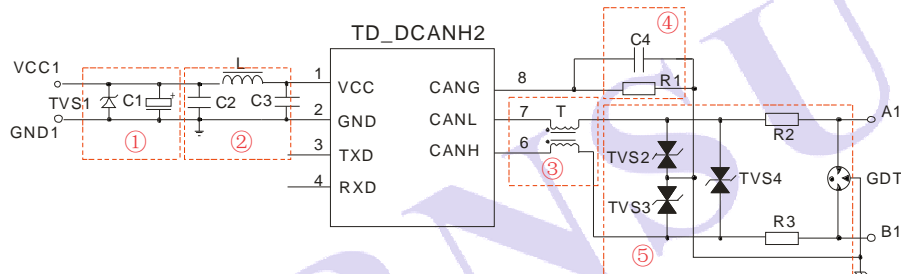
EMI	CE	CISPR22/EN55022	CLASS A	(External Circuit Refer to Figure 1-②)
	RE	CISPR22/EN55022	CLASS A	(External Circuit Refer to Figure 1-③)

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)
IEC/EN61000-4-4		Signal Port ±1KV	perf. Criteria B	(External Circuit Refer to Figure 1-⑤)	
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 1-⑤)
	CS	IEC/EN61000-4-6	3 Vr.m.s	perf. Criteria A	

## OTHER CHARACTERISTICS

Environmental Temperature	Operating temperature:-40℃~+105℃ Transport and storage temperature: -55℃~+125℃
Operating Humidity	10%~90%
The Max. Case Temperature	50℃(Ta=25℃)
Cooling	Free air convection
Size	19.9*16.9*7.05 (Unit:mm)
Weight	About 4 g
Application Environment	No dust, fierce vibration, impulsion and corrosive gas

## EMC RECOMMENDED CIRCUIT



Recommended external circuit parameters:

Model	TD301DCANH2	TD501DCANH2
C1	220uF/10V(Electrolytic capacitor)	
TVS1	SMCJ5.0A	SMCJ6.5A
C2,C3	1uF/50V	
L	10μH	
T	B82793S0513N201	
C4	1nF/2KV	
R1	1MΩ	
TVS2,TVS3	SMBJ24CA	
TVS4	SMBJ6.5CA	
R2,R3	10Ω/2W(Wire wound resistance)	
GDT	B3D150L-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.

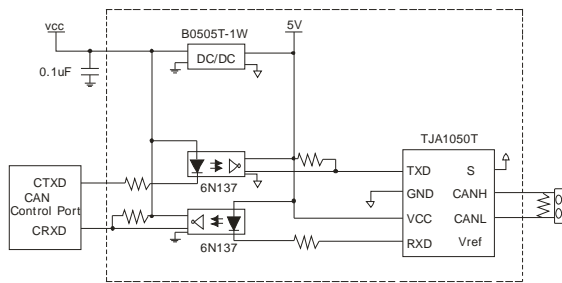
## AFTER SERVICE

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.

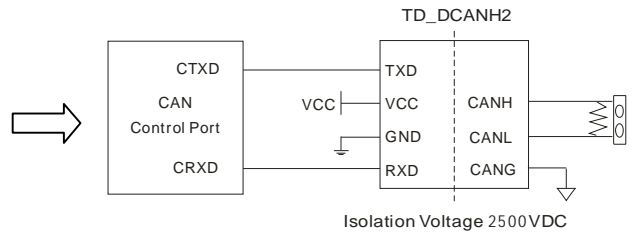
## APPLICATION GUIDE

See the communication interface product application guide.

## TYPICAL APPLICATIONS CIRCUIT DIAGRAM



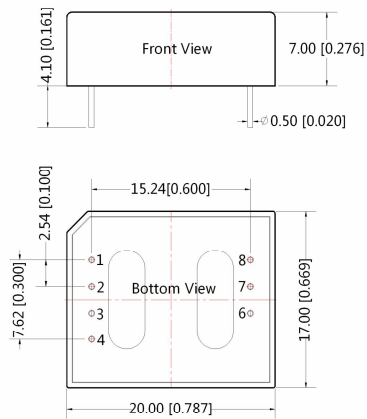
Conventional Circuit



New Circuit

## OUTLINE DIMENSIONS, RECOMMENDED FOOTPRINT & PACKAGING

### MECHANICAL DIMENSIONS

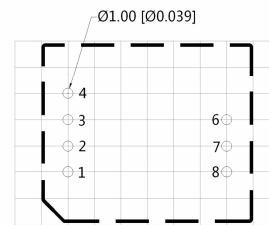


PIN CONNECTION		
Pin	Designation	Function
1	VCC	Input Power+
2	GND	GND
3	TXD	TD-DCAN Send Pin
4	RXD	TD-DCAN Receiving Pin
6	CANH	TD-DCAN HPin
7	CANL	TD-DCAN L Pin
8	CANG	Isolation Power Output CANG

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

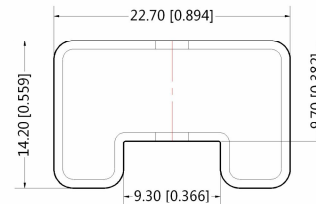


### RECOMMENDED FOOTPRINT DETAILS



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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