

Single high rate CAN isolation transceiver module



FEATURES

- Two-terminal isolation between input and output
- Integrated Isolated DC/DC converter
- Isolation voltage: 2500VDC
- 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
- Preventing overvoltage
- ESD protection, complete EMC recommended circuit

High speed 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

Part No.	Power Supply input (VDC)
TD301DCANH2	3.0~3.6
TD501DCANH2	4.5~5.5

Input Specifications

Item		Operating Conditions	Value
Input Power Supply	Static current	Products energized, no communication	TD301DCANH2 ≤ 35mA, TD501DCANH2 ≤ 30mA
Input	Serial interface		TD301DCANH2 : Compatible with the CAN control port of +3.3V
			TD501DCANH2: Compatible with the CAN control port of +5V
	Pin current		$I_{TXD} \leq 2mA; I_{RXD} \leq 2mA$

Bus Interface

Item		Operating Conditions	Value
Output	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

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

General Specifications

Item	Operating Conditions	Value
Electric Isolation		Two-terminal isolation (input and output are mutually isolated)
Degree of Isolation	testing for 1 minute, leakage current < 5mA, humidity < 95%	2.5KVDC

Operating Temperature		-40℃~+105℃
Transportation and Storage Temperature		-55℃~+125℃
Operating Humidity		10%~90%
Max. Operating Temperature for casing	Ta=25℃	25℃ (Typ.)
Application Environment		The presence of dust, fierce vibration, impulsion and corrosive gas may cause damage to the product

Physical Specifications

Casing Material	WH8100-F
Package	DIP8
Dimensions	19.90*16.90*7.05 mm
Weight	4.00g(Typ.)
Cooling Method	Natural cooling

EMC Specifications

EMI	Conducted Disturbance	CISPR22/EN55022	CLASS A (see 2-② for recommended circuit)		
	Radiated Emission	CISPR22/EN55022	CLASS A (see 2-② for recommended circuit)		
EMS	Electrostatic Discharge	IEC/EN61000-4-2	Contact ±4KV		perf. Criteria B
	EFT	IEC/EN61000-4-4	Power supply port ±2KV	(see 2-① for recommended circuit)	perf. Criteria B
		IEC/EN61000-4-4	Signal port ±1KV	(see 2-③ for recommended circuit)	perf. Criteria B
	Surge Immunity	IEC/EN61000-4-5	Power supply port ±1KV	(see 2-① for recommended circuit)	perf. Criteria B
			Signal port ±0.25KV/±0.5KV	(see 2-③ for recommended circuit)	perf. Criteria B
			Signal port ±0.5KV/±1KV	(see 2-③ for recommended circuit)	perf. Criteria B
			Signal port ±1KV/±2KV	(see 2-③ for recommended circuit)	perf. Criteria B
			Signal port ±2KV/±4KV	(see 2-③ for recommended circuit)	perf. Criteria B
			Signal port ±4KV/±6KV	(see 2-③ for recommended circuit)	perf. Criteria B

Application Precautions

1. Please read the technical manual carefully before use; contact our technical support if you have any problem.
2. Do not use the product in hazardous areas.
3. Use DC power supply for the product and 220V AC power supply is prohibited.
4. Do not dismount and assemble the product without permission to avoid failure or malfunction of equipment.

After-sales service

1. Ex-factory inspection and quality control have been strictly conducted for the product; if there occurs abnormal operation or possibility of failure of internal module, please contact the local representative or our technical support.
2. The warranty period for the product is 3 years as calculated from the date of delivery. If any quality problem occurs under normal use within the warranty period, the product can be repaired or changed for free.

Applied circuit

See *Application Notes for Isolated Transmitter* for details.

Design Reference

1. Typical application

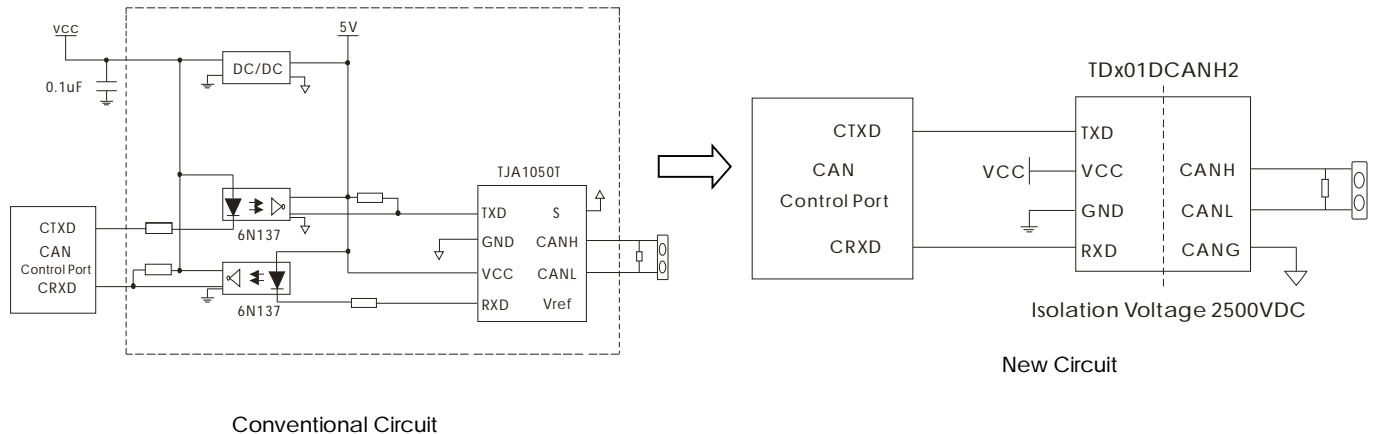


Fig. 1

2. Recommended EMC circuit

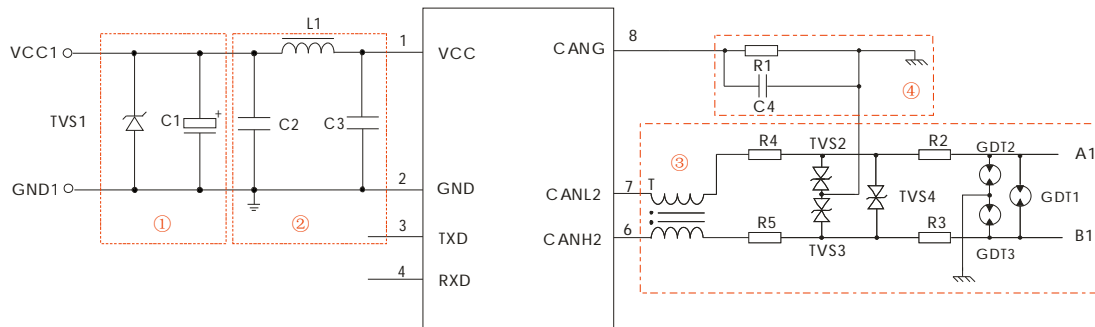
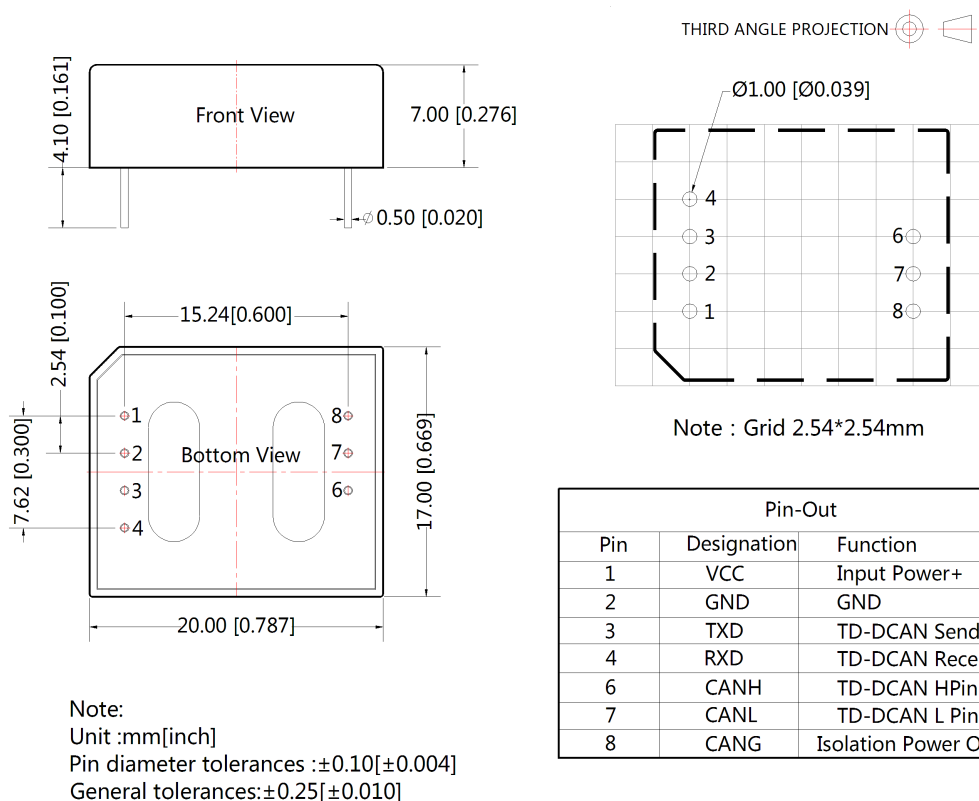


Fig. 2

Components	TD301DCANH2 / TD501DCANH2				
	±0.25KV/±0.5KV	±0.5KV/±1KV	±1KV/±2KV	±2KV/±4KV	±4KV/±6KV
C1	220uF/10V (Electrolytic capacitor)		220uF/10V (Electrolytic capacitor)		
TVS1	SMCJ5.0A (TD301DCANH2) / SMCJ6.5A(TD501DCANH2)				
C2/C3	1uF/50V		1uF/50V		
L1	10μH		10μH		
T	B82793S0513N201		B82793S0513N201		
C4	1nF/2KV		1nF/2KV		
R1	1MΩ		1MΩ		
TVS2/TVS3/TVS4	SMBJ15CA		SMBJ15CA		
R2/R3	--	--	(Wire wound resistance) 10Ω/2W	(Wire wound resistance) 10Ω/2W	(Wire wound resistance) 10Ω/2W
R4/R5	(Wire wound resistance) 10Ω/1W	(Wire wound resistance) 10Ω/2W	--	--	--
GDT1/GDT2/GDT3	--	--	G30-A90X	S30-A90X	S50-A90X
Notes:					
① GDT1, GDT2 and GDT3 be used instead of a three terminal gas discharge tube. Such as GDT1, GDT2 and GDT3 three two-terminal device available gas discharge tube instead of a three-terminal at "± 4KV / ± 6KV" hierarchy, as B3D090L-C.					
② It is not needed the component when parameter with the symbol of "--".					

3. For more information please find the application notes on www.mornsun-power.com

Dimensions and Recommended Layout



Notes:

1. Packing Information please refer to 'Product Packing Information'. Packing bag number: 58040012;
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of $T_a=25^\circ\text{C}$, humidity<75% when inputting nominal voltage and outputting rated load;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. The performance indexes of the product models listed in this datasheet are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technician for specific information;
5. We can provide product customization service;
6. Specifications of this product are subject to changes without prior notice.

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