

Duplex universal CAN isolation transceiver module



FEATURES

- | Two-terminal isolation between input and output
- | Integrated Isolated DC/DC converter
- | Isolation voltage: 2500VDC
- | Operating temperature range:-40℃~+105℃
- | 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
- | Product has complete EMC recommended circuit

Duplex universal CAN isolation transceiver TD302DCAN/TD502DCAN series are CAN bus transceiver module with integrated power isolation power, signal isolation chip ,and CAN transceiver chip .

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. 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)
TD302DCAN	3.0~3.6
TD502DCAN	4.5~5.5

Input Specifications

Item	Operating Conditions	Value
Input Power Supply	Static current	TD302DCAN ≤80mA
		TD502DCAN ≤50mA
Input	Serial interface	TD302DCAN : Compatible with the CAN control port of +3.3V
		TD502DCAN: 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	-36V~+36V
	Bus protection	Over-voltage bus protected, thermally protected and high-voltage transient protected

Transmission Specifications

Item	Operating Conditions	Value
Data Rate		1Mbps (max.)
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	DIP12
Dimensions	19.90*16.90*7.05 mm
Weight	4.50g(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

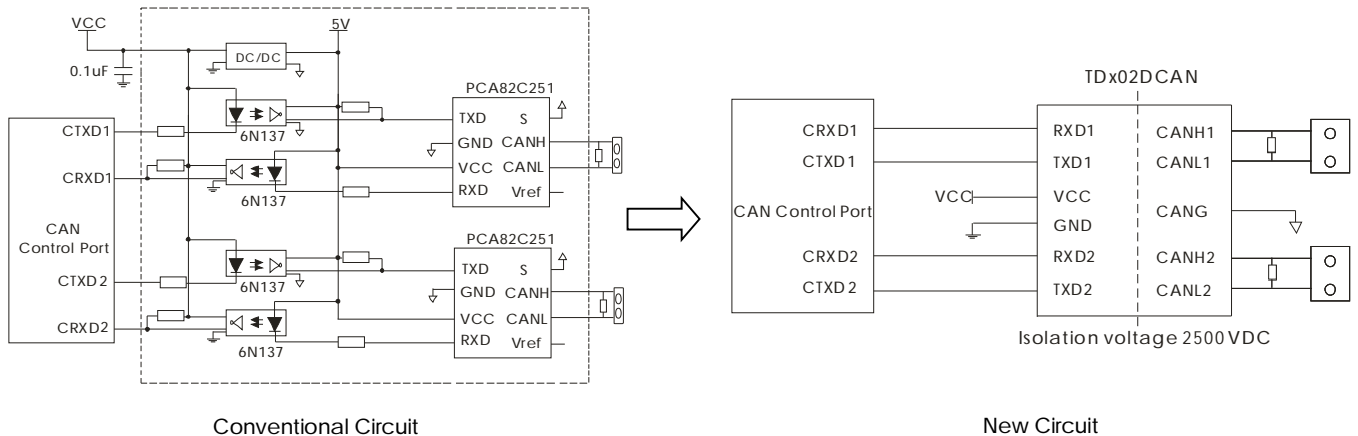
1. Ex-factory inspection and quality control have been strictly conducted for the product; if there occurs abnormal operation or possibility of failure of internal module, please contact the local representative or our technical support.
2. The warranty period for the product is 3 years as calculated 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



2. Recommended EMC circuit

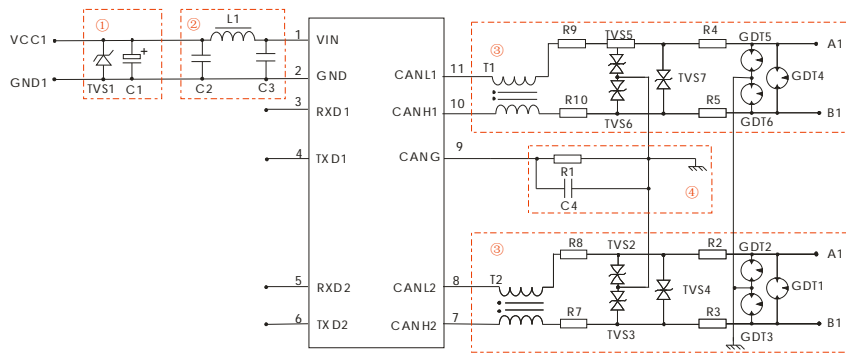


Fig. 1

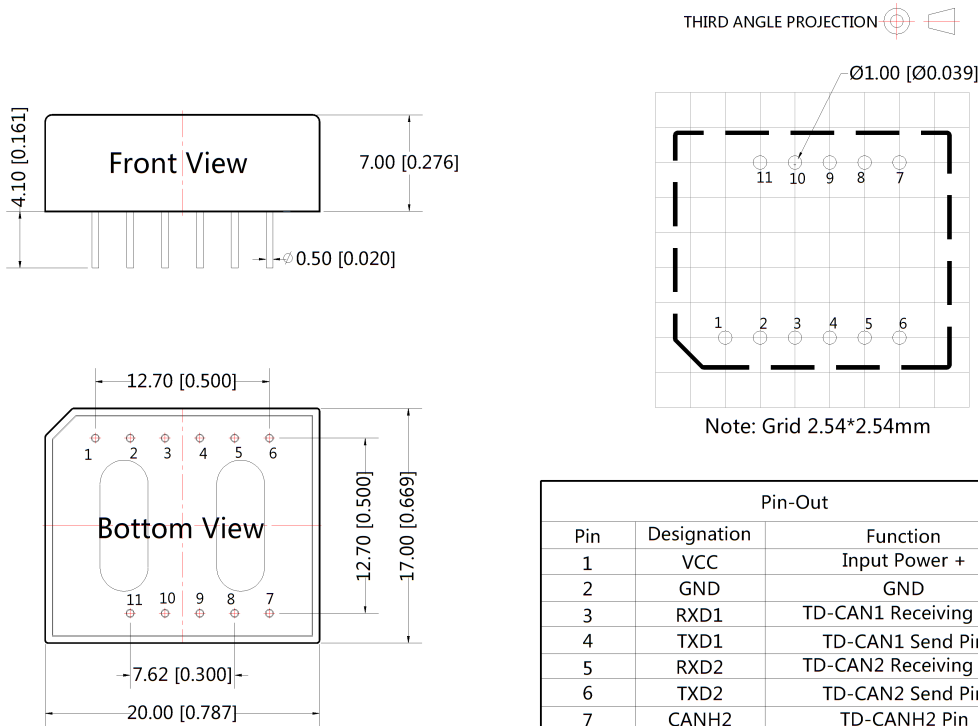
Components	TD302DCAN / TD502DCAN				
	±0.25KV/±0.5KV	±0.5KV/±1KV	±1KV/±2KV	±2KV/±4KV	±4KV/±6KV
C1	220uF/10V(Electrolytic capacitor)		220uF/10V(Electrolytic capacitor)		
TVS1	SMCJ5.0A (TD302DCAN) / SMCJ6.5A(TD502DCAN)				
C2/C3	1uF/50V		1uF/50V		
L1	10µH		10µH		
T1/T2	B82793S0513N201		B82793S0513N201		
C4	1nF/2KV		1nF/2KV		
R1	1MΩ		1MΩ		
TVS2/TVS3/TVS4	SMBJ15CA		SMBJ15CA		
TVS5/TVS6/TVS7	SMBJ15CA		SMBJ15CA		
R2/R3/R4/R5	--	--	(Wire wound resistance) 10Ω/2W	(Wire wound resistance) 10Ω/2W	(Wire wound resistance) 10Ω/2W
R7/R8/R9/R10	(Wire wound resistance) 10Ω/1W	(Wire wound resistance) 10Ω/2W	--	--	--
GDT1/GDT2/GDT3	--	--	G30-A90X	S30-A90X	S50-A90X
GDT4/GDT5/GDT6	--	--	G30-A90X	S30-A90X	S50-A90X

Notes:

- GDT1, GDT2 and GDT3 be used instead of a three terminal gas discharge tube, GDT4, GDT5 and GDT6 empathy. Such as GDT1, GDT2 and GDT3 three two-terminal device available gas discharge tube instead of a three-terminal at "± 4KV / ± 6KV" hierarchy, GDT4, GDT5 and GDT6 empathy, as B3D090L-C.
- 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



Note:
Unit :mm[inch]
Pin diameter tolerances :±0.10[±0.004]
General tolerances:±0.25[±0.010]

Pin-Out		
Pin	Designation	Function
1	VCC	Input Power +
2	GND	GND
3	RXD1	TD-CAN1 Receiving Pin
4	TXD1	TD-CAN1 Send Pin
5	RXD2	TD-CAN2 Receiving Pin
6	TXD2	TD-CAN2 Send Pin
7	CANH2	TD-CANH2 Pin
8	CANL2	TD-CANL2 Pin
9	CANG	Isolation Power Output CANG
10	CANH1	TD-CANH1 Pin
11	CANL1	TD-CANL1 Pin

Notes:

1. Packing Information please refer to 'Product Packing Information'. Packing bag number: 58040014;
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of Ta=25°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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