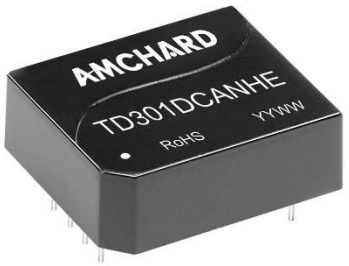
FEATURES



1. Two-terminal isolation(2.5kVDC)
2. High baud rate of up to 1 Mbps
3. Operating ambient temperature range: -40°C to +85°C
4. The bus supports maximum 110 nodes
5. ESD: Contact ±8kV/Air±15kV
6. Surge protection: ±4kV

RoHS CE 3 years Warranty

Selection Guide

Certification	Part No.	Power input (VDC)	Baud rate (bps)	Static Current (mA)	Maximum Operating Current (mA)	Number of Nodes
EN	TD301DCANHE	3.3	20k-1M	25	90	110
	TD501DCANHE	5	20k-1M	20	75	110

Absolute Limits

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Surge Voltage (1sec.max.)	3.3V series	-0.7	--	5	VDC
	5.0V series	-0.7	--	7	
Pin Soldering Temperature	Soldering spot 1.5mm away from case, 10s max.	--	--	300	℃

3.3V Input Specifications

Item		Symbol	Min.	Typ.	Max.	Unit
Power Supply Input Voltage		V_{CC}	3.15	3.3	3.45	VDC
TXD Logic Level	High-level	V_{IH}	0.7V_{CC}	--	V_{CC}+0.5	
	Low-level	V_{IL}	0	--	0.8	
RXD Logic Level	High-level	V_{OH}	V_{CC}-0.4	V_{CC}-0.2	--	
	Low-level	V_{OL}	--	0.2	0.4	
TXD Drive Current		I_T	2	--	--	mA
RXD Output Current		I_R	--	--	10	
Serial Interface		Standard CAN controller interface for +3.3V				

5.0V Input Specifications

Item		Symbol	Min.	Typ.	Max.	Unit
Power Supply Input Voltage		VCC	4.75	5	5.25	VDC
TXD Logic Level	High-level	VIH	0.7VCC	--	VCC+0.5	
	Low-level	VIL	0	--	0.8	
RXD Logic Level	High-level	VOH	VCC-0.4	VCC-0.2	--	
	Low-level	VOL	--	0.2	0.4	
TXD Drive Current		IT	2	--	--	mA
RXD Output Current		IR	--	--	10	
Serial Interface		Standard CAN controller interface for +5.0V				

Transmission Specifications

Item		Symbol	Min.	Typ.	Max.	Unit
Data Delay	TXD Transmitter Delay	t_T	--	100	115	ns
	RXD Receiver Delay	t_R	--	100	135	
	Cycle Delay	$t_{PRO(TXD-RXD)}$	--	200	250	
Dominant Timeout			--	1.5	5	ms

Output Specifications

Item		Symbol	Min.	Typ.	Max.	Unit
Dominant Level (Logic 0)	CANH	$V_{(OD)CANH}$	2.75	3.5	4.5	VDC
	CANL	$V_{(OD)CANL}$	0.5	1.5	2	
Recessive Level (Logic 1)	CANH	$V_{(OR)CANH}$	2	2.5	3	
	CANL	$V_{(OR)CANL}$	2	2.5	3	
Differential Level	Dominant Level (Logic 0)	$V_{diff(d)}$	1.5	2.5	3	
	Recessive Level (Logic 1)	$V_{diff(r)}$	-0.05	0	0.05	
Bus Pin Maximum Withstand Voltage		V_X	-7	--	+12	
Bus Transient Toltage		V_{trt} , Meet ISO7637-3 standard	-150	--	+100	
Bus Pin Leakage Current		(V_{CC}=0V, $V_{CANH/L}$=5V)	-5	--	5	uA
Load Resistance Differential		R_L	50	60	65	Ω
Input Impedance Differential		R_{diff}	30		80	kΩ
CAN Bus Interface		Meet ISO/DIS 11898-2 standard twisted-pair output				

General Specifications

Item	Operating Conditions	Value
Isolation Test	Electric strength test for 1 minute, leakage current <1mA	2.5kVDC
Insulation Resistance	At 500VDC	1000MΩ (input-output)
Operating Temperature		-40℃ to +85℃
Transportation and Storage Temperature		-50℃ to +125℃
Operating Humidity	Non-condensing	10% - 90%
Safety Standard		EN62368-1(Report)
Safety Class		CLASS III

Mechanical Specifications

Package	DIP8; Dimension 20.00 x17.00 x 7.00 mm
Weight	3.8g(Typ.)
Cooling Method	Free air convection

EMC Specifications

Immunity	ESD	IEC/EN 61000-4-2	Contact ±8kV/Air±15kV (without external components, Signal port)	Perf. Criteria B
	EFT	IEC/EN 61000-4-4	±2kV (without external components, Signal port)	Perf. Criteria B
	Surge	IEC/EN 61000-4-5	±4kV (without external components, Signal port)	Perf. Criteria B
	CS	IEC/EN 61000-4-6	3Vr.m.s (without external components)	Perf. Criteria A
Note: Above only valid to communication port of CANH, CANL, CANG. The pin of CANG is open during testing.				

Application Precautions

1. Carefully read and follow the instructions before use; contact our technical support if you have any question;
2. Do not use the product in hazardous areas;
3. Use only DC power supply source for this product. 220V AC power supply is prohibited;
4. It is strictly forbidden to disassemble the product privately in order to avoid product failure or malfunction;
5. Hot-swap is not supported;
6. If the external input of TXD is insufficient, the pull-up resistor should be added according to the situation.

After-sales service

1. Factory inspection and quality control are strictly enforced before shipping any product; please contact your local representative or our technical support if you experience any abnormal operation or possible failure of the module;
2. The products have a 3-year warranty period, from the date of shipment. The product will be repaired or exchanged free of charge within the warranty period for any quality problem that occurs under normal use.

Applied circuit

Refer to the CAN Industrial Bus Interface Isolating Module Application Manual.

Design Reference

1. Schematic diagram of surge circuit

Surge protection circuit is designed into TDX01DCANHE, which improve the capability of surge protection and simplify the application circuits.

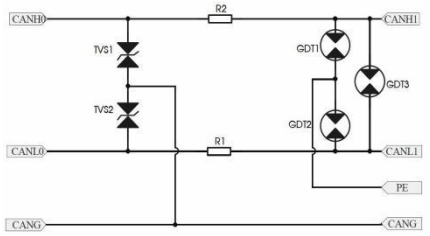


Fig.1

2. Typical application circuit

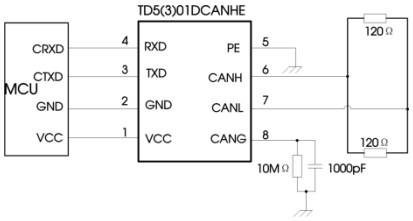


Fig.2

Figure 2 shows a typical application circuit for connecting a module. The module with its integrated power supply, CAN controller and CAN bus network interface can generally be used by customers as is, without the need of adding peripheral circuits.
Note: The logic level of the CAN controller should be compatible with the TD5(3)01DCANHE.

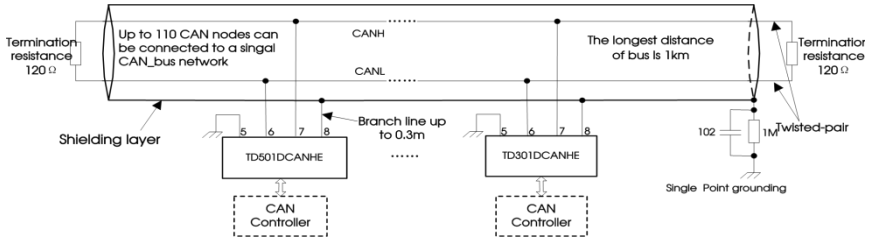
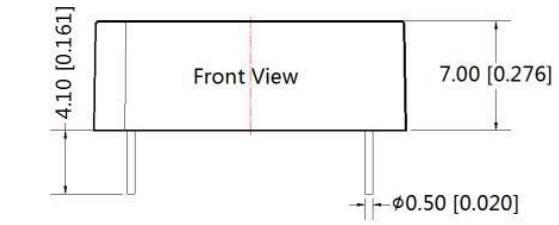
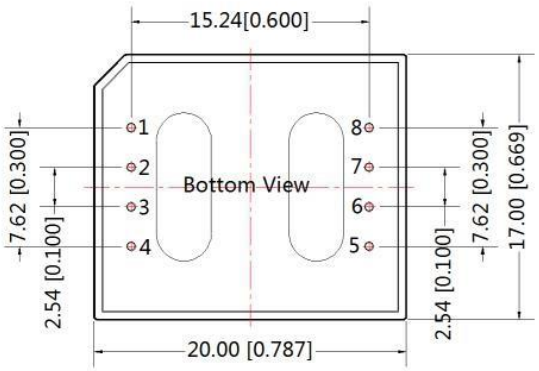


Fig.3

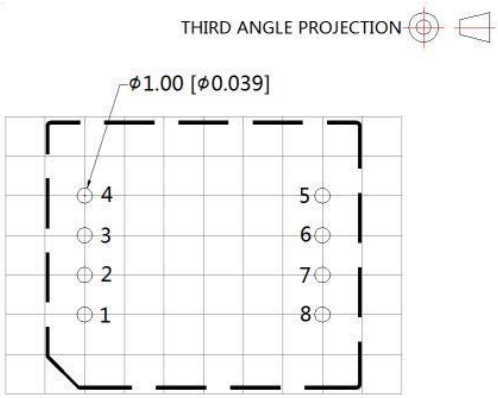
As shown in Figure 3, a single CAN-bus network allows connecting as many as 110 isolated single-channel TD_CAN transceiver modules. This universal type module supports a maximum communication distance of 10km while the high-speed type module can support a maximum communication distance of 1km with a baud rate beyond 20kbps. For accessing more nodes or achieving longer communication distances, CAN repeaters or other expansion equipment can easily be used.
Note: The communication distance of the bus is related to the communication speed and its field application. It can be designed according to the actual application and reference standard. We recommended the use of a twisted pair or shielded twisted pair as the communication cable and it should be kept away from any sources of interference. For long-distance communication, the terminal resistance value needs to be selected in accordance with the communication distance, the cable impedance and the number of nodes.

Dimensions and Recommended Layout





Note:
Unit: mm[inch]
Pin diameter tolerances: ±0.10[±0.004]
General tolerances: ±0.50[±0.020]



Note: Grid 2.54*2.54mm

Pin-Out		
Pin	Mark	Function
1	VCC	Input Power+
2	GND	GND
3	TXD	TD-DCAN Send Pin
4	RXD	TD-DCAN Receiving Pin
5	PE	Ground
6	CANH	TD-DCAN H Pin
7	CANL	TD-DCAN L Pin
8	CANG	Isolation Power Output CANG

Note:

1. The input voltage should not exceed the specified range value, otherwise it may cause permanent and irreparable damage;
2. It is recommended to use at a load of over 5%. If the load is below 5%, the ripple index of the product may exceed the specifications, but it does not affect the reliability of the product;
3. Suggested dual output module load imbalance: ≤ ± 5%. If it exceeds ± 5%, it cannot be guaranteed that the product performance meets all performance indicators in this manual;
4. The maximum capacitive load is tested within the input voltage range and under full load conditions;
5. Unless otherwise specified, all indicators in this manual are measured at Ta=25 ℃, humidity<75% RH, nominal input voltage, and output rated load;
6. All indicator testing methods in this manual are based on our company's corporate standards;
7. Our company can provide product customization, and specific requirements can be directly contacted by our technical personnel;
8. Product specifications are subject to change without prior notice.