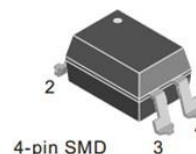
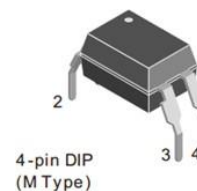
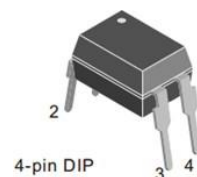


● 特点(Features):

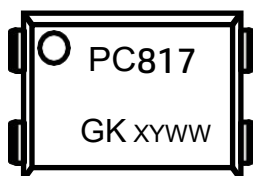
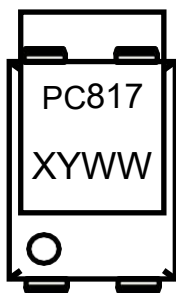
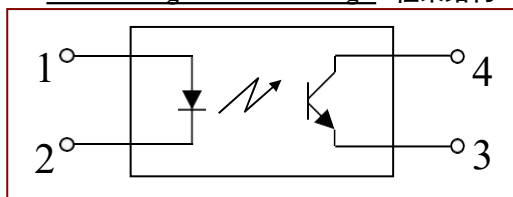
1. 电流转换比(CTR: 最小 50% 工作条件 $I_F=5\text{mA}$, $V_{CE}=5\text{V}$)
Current conversion ratio (Min 100% Working condition $I_F=5\text{mA}$, $V_{CE}=5\text{V}$)
2. 绝缘电压: ($V_{ISO}=5,000\text{Vrms}$) Insulation Voltage = 5,000Vrms
3. 响应时间 (tr: TYP. 6 μs ; tf: TYP. 5 μs)工作条件 $V_{CE}=2\text{V}$, $I_C=2\text{mA}$, $R_L=100\ \Omega$)
Response Time (tr: TYP. 6 μs ; tf: TYP. 5 μs)working condition $V_{CE}=2\text{V}$, $I_C=2\text{mA}$, $R_L=100\ \Omega$)
4. ESD: HBM8000V&MM2000V


● 说明 (Instructions)

1. PC817 系列光耦合器的组成是: 由一个 GaAs 的发射管和一个 NPN 的晶体管组成
PC817 photocoupler consist of one piece of GaAs emitter and one piece of NPN transistor
2. PC817 的引脚中心距是 2.54mm Pin pitch of PC817 is 2.54mm

● 应用范围 (Application Range)

1. 开关电源.Switching power supply
2. 电表.Ammeter
3. 电脑.Computer
4. 器具的应用, 测量机. Instrumental application, measurement machine
5. 贮存器, 复印机, 自动售货机. Imbursement equipments, duplicating machine, automat
6. 家用电器, 如风扇等. Family-use electric equipments, such as fans
7. 信号传输系统. Signal transforming systems

● Block Diagram and Package 框架结构


- The "x" in the printed word represents the product segment: A、B、C、D or others

印字中的 'x' 代表产品 CTR 分档: A、B、C、D 等

- "Y" represents the year; "WW" represents the week

印字中 'Y' 代表年份; "WW" 代表星期

- The "TN" in the printed word represents the product brand

印字中的 'TN' 代表产品品牌

PC817

● 最大绝对额定值 (常温=25℃) Max Absolute rated Value (Normal Temperature=25℃)

参数 Parameter		符号 Symbol	额定值 Rated Value	单位 Unit
输入 Inout	顺向电流 Forward Current	I _F	50	mA
	逆向电压 Reverse Voltage	V _R	6	V
	功耗率 Consume Power	P	70	mW
输出 Output	集极与射极电压 Collector and emitter Voltage	V _{CEO}	35	V
	射极与集极电压 Emitter and collector Voltage	V _{ECO}	6	
	集极电流 Collector Current	I _C	50	mA
	消耗功率 Consume Power	P _C	150	mW
	总功率消耗 Total Consume Power	P _{tot}	200	mW
*1 绝缘电压 Insulation Voltage		V _{iso}	5,000	Vrms
最大绝缘电压 Max Insulation Voltage		V _{IOTM}	6,000	V
额定脉冲绝缘电压 Rated Impulse Insulation Voltage		V _{IORM}	630	V
工作温度 Working Temperature		T _{opr}	-55 to + 110	℃
存贮温度 Deposit Temperature		T _{stg}	-55 to + 125	
*2 焊锡温度 Soldering Temperature		T _{sol}	260	

- *1. 交流测试, 时间 1 分钟, 湿度. =40~60% AC Test, 1 minute, humidity = 40~60%
如下是绝缘测试的方法. Insulation test method as below:
(1) 将产品的两端短路。 Short circuit both terminals of photocoupler
(2) 测试绝缘电压时无电流通过。 No Current when testing insulation voltage
(3) 测试时加正弦波形电压。 Adding sine wave voltage when testing
- *2. 锡焊时间为 10 秒 soldering time is 10 seconds

● 光电特性(常温=25℃) Opto-electronic Characteristics

参数 Parameter		符号 Symbol	条件 Condition	最小 Min	中.Mid ium	最 大 Max	单位 Unit
输入 Input	顺向电压 Forward Current	V _F	I _F =20mA	---	1.20	1.40	V
	逆向电压 Reverse Voltage	I _R	V _R =5V	---	---	5	uA
	集极电容 Collector capacitance	C _t	V=0, f=1MHz	---	30	250	pF
输出 Output	集极至射极电流 Collector to emitter Current	I _{CEO}	V _{CE} =70V, I _F =0mA	---	---	150	nA
	集极与射极衰减电压 Collector and Emitter attenuation Voltage	BV _{CEO}	I _C =0.1mA I _F =0mA	70	---	---	V
	射极与集极衰减电压 Emitter and Collector attenuation Voltage	BV _{ECO}	I _E =10μA I _F =0mA	6	---	---	V

PC817

传输特性 Transforming Characteristics	*1 电流转换比 Current conversion ratio	CTR	IF=5mA VCE=5V	50	---	600	%
	集极与射极饱和电压 Collector and Emitter Saturation Voltage	VCE(sat)	IF=20mA IC= 1mA	---	0.1	0.2	V
	绝缘阻抗 Insulation Impedance	Riso	DC500V 40~60%R.H.	5×10 ¹⁰	1×10 ¹¹	---	Ω
	电容量 capacotance	Cf	V=0, f=1MHz	---	0.6	1	pF
	转换频率 Transforming Frequency	f _c	VCE=5V, IC=2mA RL=100Ω, -3dB	---	80	---	kHz
	上升时间 Rise time	t _r	VCE=2V, IC=2mA RL=100Ω	---	6	18	μs
	下降时间 Descend Time	t _f		---	5	18	μs

● 电流转换比 Current Conversion Ratio = IC / IF × 100%

● 电流转换比的等级分类 Grades of Current conversion ratio

等 级 标 示 Grade Sign	最小 .Min (%)	最大 .Max (%)
A	100	160
B	130	260
C	200	400
D	300	600
A or B or C or D	50	600

说明： 工作条件: IF=5mA, VCE=5V, Ta=25℃. Note:

Working condition: IF=5mA, VCE=5V, Ta=25℃.

RATING AND CHARACTERISTIC CURVES (PC817)

Fig.1 Forword Current
vs. Ambient Temperatute

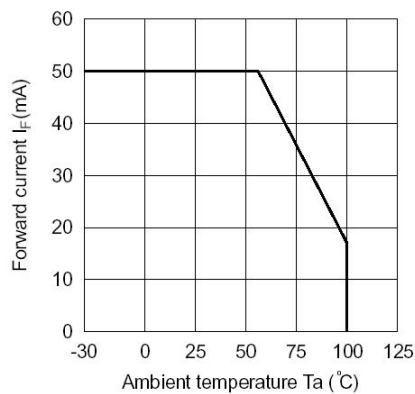


Fig.2 Collector Power Dissipation
vs. Ambient Temperature

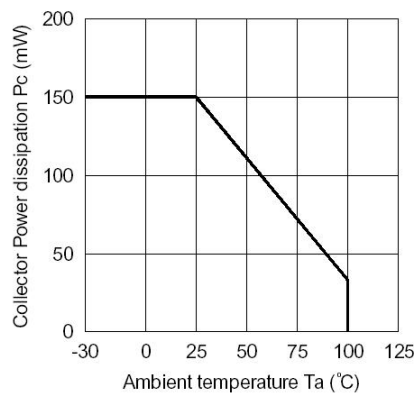


Fig.3 Collector-emitter Saturation
Voltage vs. Forward Current

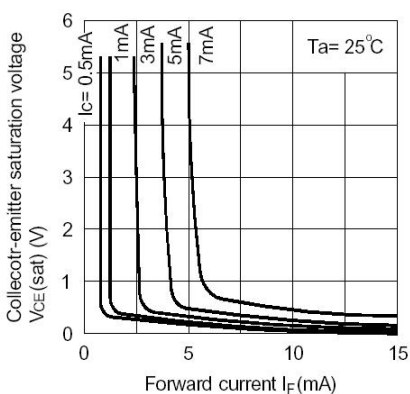


Fig.4 Forward Current vs. Forward
Voltage

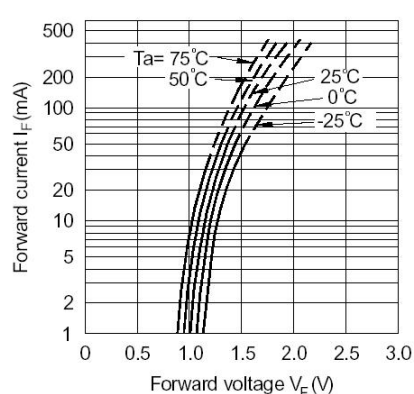


Fig.5 Current Transfer Ratio vs.
Forward Current

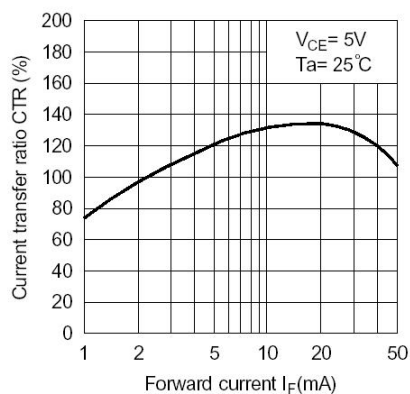
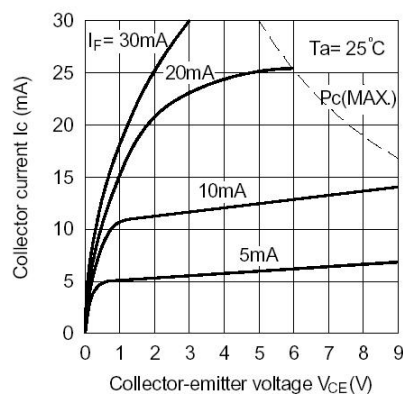


Fig.6 Collector Current vs.
Collector-emitter Voltage



RATING AND CHARACTERISTIC CURVES (PC817)

Fig.1 Forword Current vs. Ambient Temperatute

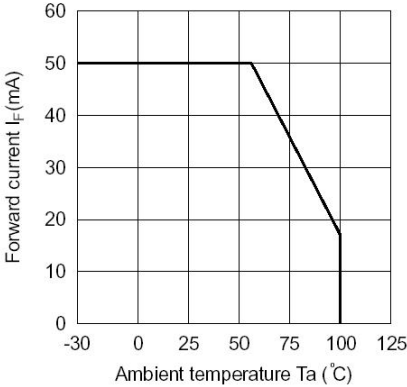


Fig.2 Collector Power Dissipation vs. Ambient Temperature

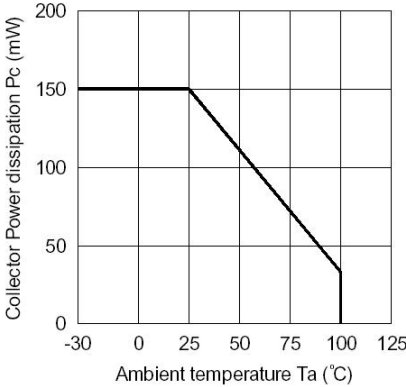


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

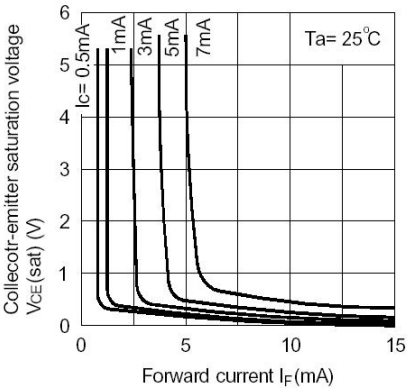


Fig.4 Forward Current vs. Forward Voltage

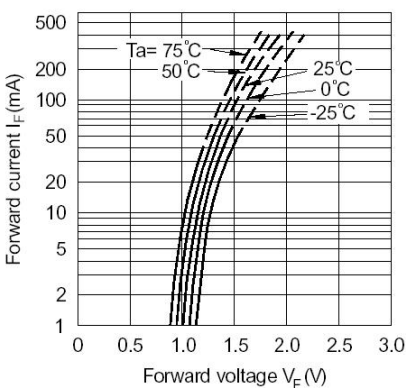


Fig.5 Current Transfer Ratio vs. Forward Current

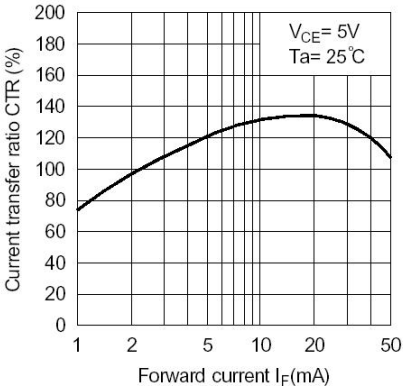
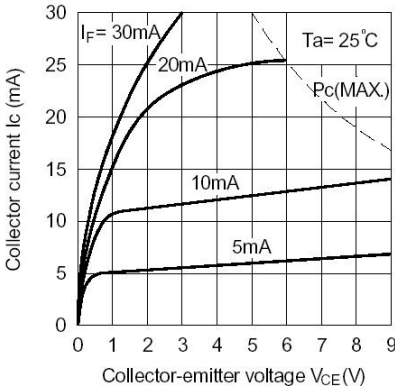


Fig.6 Collector Current vs. Collector-emitter Voltage



RATING AND CHARACTERISTIC CURVES (PC817)

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

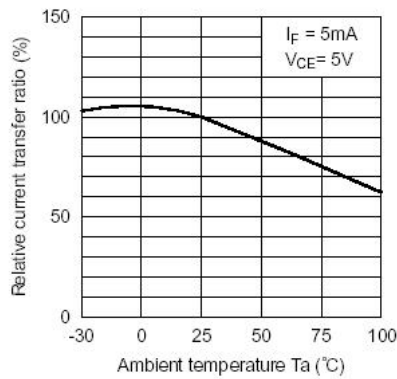


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

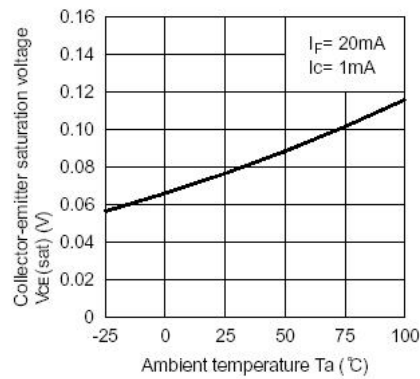


Fig.9 Collector Dark Current vs. Ambient Temperature

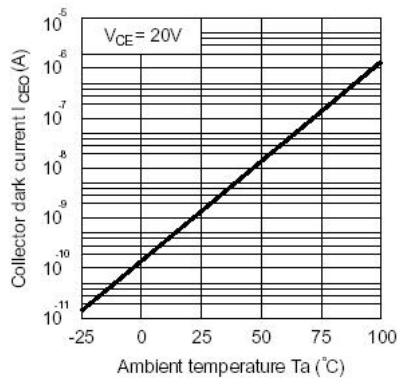


Fig.10 Response Time vs. Load Resistance

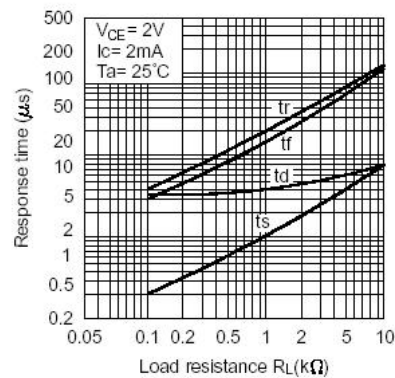
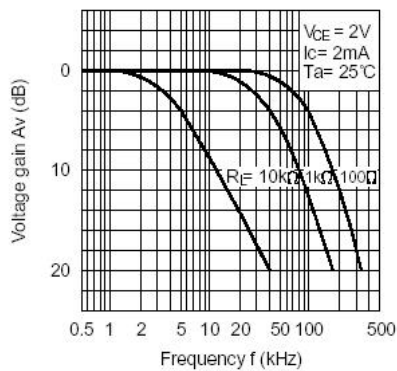
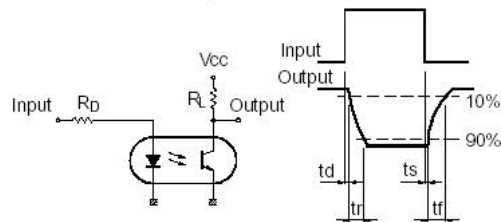


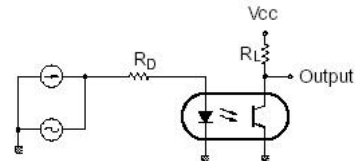
Fig.11 Frequency Response



Test Circuit for Response Time

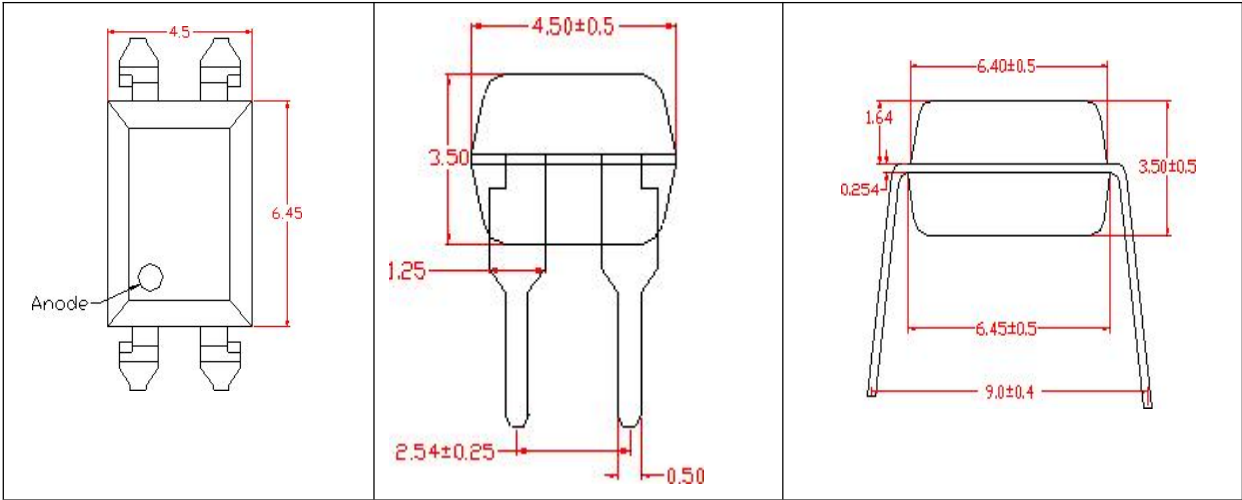


Test Circuit for Frequency Response

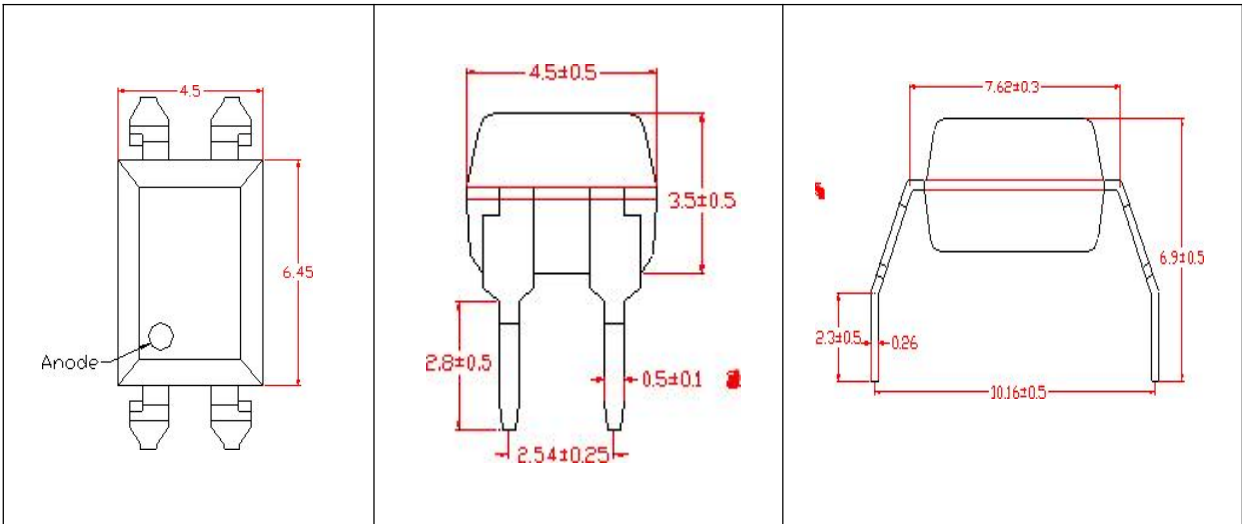


Outline Dimensions 外形尺寸

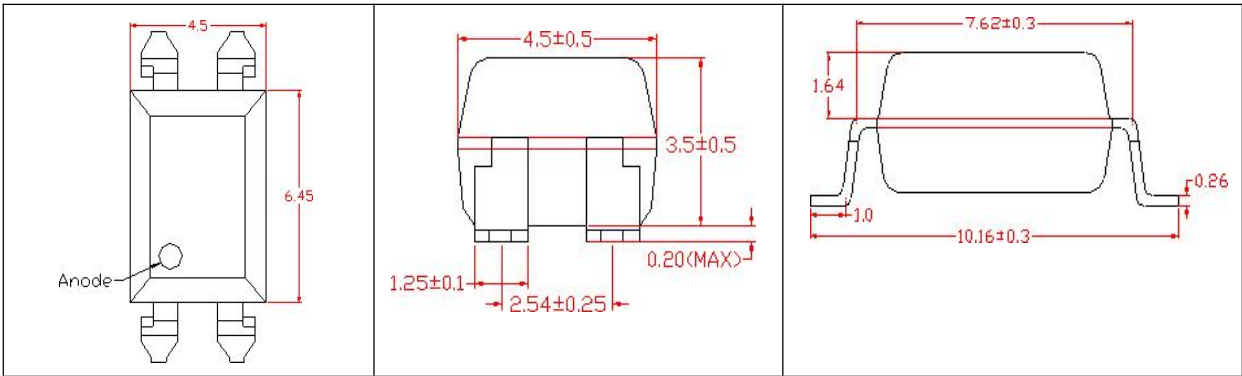
Unit: mm (inch)



4-pin DIP



4-pin DIP (M Type)



4-pin SMD

Contact Information

TANI website: <http://www.tanisemi.com> Email: tani@tanisemi.com For additional information, please contact your local Sales Representative.

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Product Specification Statement

The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. TANI shall assume no responsibility for any consequences resulting from such usage.

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