

# HFGD11-4

# FORCIBLY GUIDED RELAY MODULE



## Features

- A variety of contact combinations ranging from two to six sets, with a width of only 18mm
- Forced-guided contact structure (compliant with IEC 61810-3 standard)
- Single set of contacts load capacity 6A 250VAC/30VDC
- Non-polarized wiring, which can prevent operational failures caused by incorrect wiring
- Push-in spring terminal blocks
- 0.2-1.5mm<sup>2</sup>/24-16AWG Wide range wiring capacity
- Installation method: DIN35

## CHARACTERISTICS

INPUT						
Nominal Voltage	12VDC, 24VDC, 48VDC, 110VAC/DC, 230VAC/DC (Allow 80% to 110% rated change range, at 23℃)					
Rated power(W)	Type	12VDC	24VDC	48VDC	110VAC/DC	230VAC/DC
	1H1D	Approx. 0.8	Approx. 0.8	Approx. 0.8	Approx. 0.7	Approx. 1.6
	2H1D	Approx. 0.4	Approx. 0.5	Approx. 0.5	Approx. 0.4	Approx. 0.8
	2H2D	Approx. 0.4	Approx. 0.5	Approx. 0.5	Approx. 0.4	Approx. 0.8
	3H1D	Approx. 0.4	Approx. 0.5	Approx. 0.5	Approx. 0.4	Approx. 0.8
	4H2D	Approx. 0.6	Approx. 0.6	Approx. 0.6	Approx. 0.5	Approx. 1.2
Wiring polarity	No					
Terminal type	Push-in spring terminal blocks (See Annex 4)					
Control Channel Qty	1					
OUTPUT						
Relay specification	HFA2, HFA4, HFA6 （See Annex 1, 2, 3）					
Contact arrangement	1H1D, 2H1D, 2H2D, 3H1D, 4H2D					
Rated voltage	250VAC/30VDC					
Rated current	6A					
Terminal type	Push-in spring terminal blocks (See Annex 4)					
ENVIRONMENTAL AND SAFETY REGULATIONS						
Ambient temperature	-40℃ to 70℃					
Storage temperature	-40℃ to 70℃					
Vibration resistance	10Hz to 60Hz,0.3mm DC, 60Hz to 150Hz,19.6m/s²					
Shock resistance	98m/s²					
Standard compliance	IEC 61810-3					
Creepage distance	Between output channels	≥3mm				
	Between input and output	≥5.5mm				



HONGFA APPLICATION ELECTRONIC MODULE

ISO9001, IATF16949, ISO14001, ISO45001, IECQ QC 080000, ISO/IEC 27001 CERTIFIED

2025 Rev. 2.00

## CHARACTERISTICS

### ENVIRONMENTAL AND SAFETY REGULATIONS

Dielectric strength	Between output channels	2500VAC 1min
	Between input and output	4000VAC 1min
	Between open contacts	1500VAC 1min
Surge voltage(1.2/50μs)	Between output channels	4kV
	Between input and output	6kV
	Between open contacts	2.5kV

### Product Installation and Maintenance

Installation method	DIN35 (Compatible with thicknesses of 1.0mm and 1.2mm)
---------------------	--

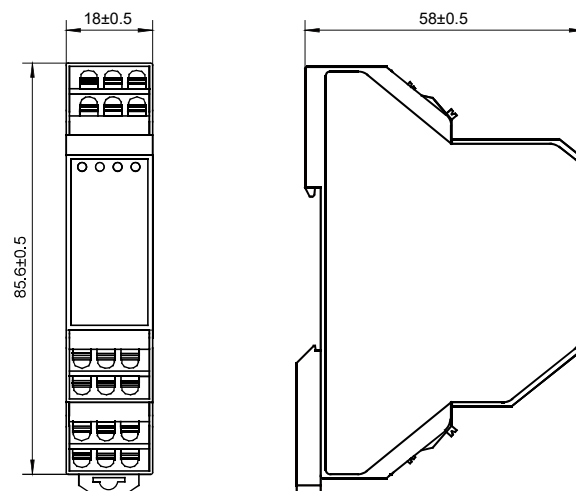
## ORDERING INFORMATION

Type	HFGD11-4 /	CN1H1D	-R	D24	(XXX)
Output Channel Type	<b>CN1H1D:</b> 1 Form A+1 Form B <b>CN2H1D:</b> 2 Form A+1 Form B <b>CN2H2D:</b> 2 Form A+2 Form B <b>CN3H1D:</b> 3 Form A+1 Form B <b>CN4H2D:</b> 4 Form A+2 Form B				
Installation method	R: Rail				
Input rated voltage	<b>D12:</b> 12VDC <b>D24:</b> 24VDC <b>D48:</b> 48VDC <b>U110:</b> 110VAC/DC <b>U230:</b> 230VAC/DC				
Special code	XXX: Customer special requirement Nil: Standard				

**Notes:** Special requirements of customers will be expressed as special codes after being evaluated by Hongfa.

## OUTLINE DIMENSIONS

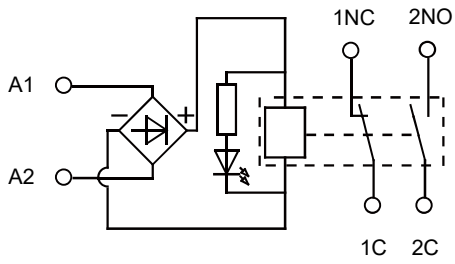
Unit: mm



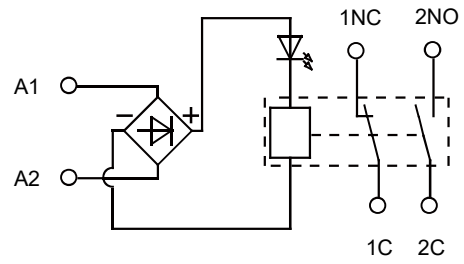
**Notes:** The silk screen diagram, using the 4H2D specification as an example.

## SCHEMATIC DIAGRAM

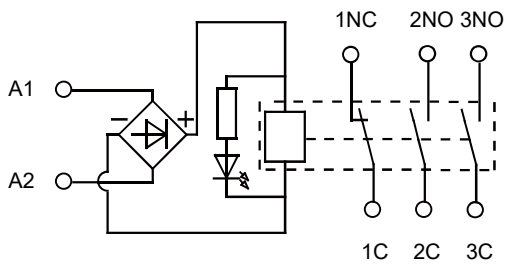
HFGD11-4/CN1H1D-RDxx



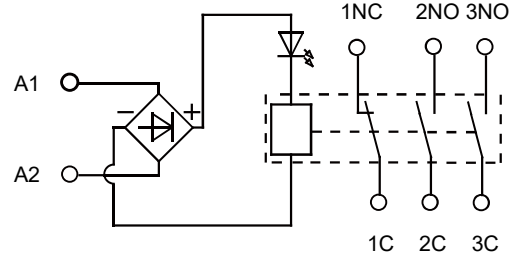
HFGD11-4/CN1H1D-RUxx



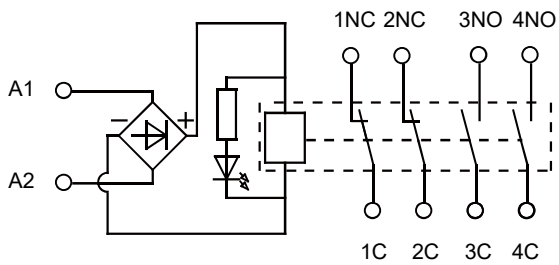
HFGD11-4/CN2H1D-RDxx



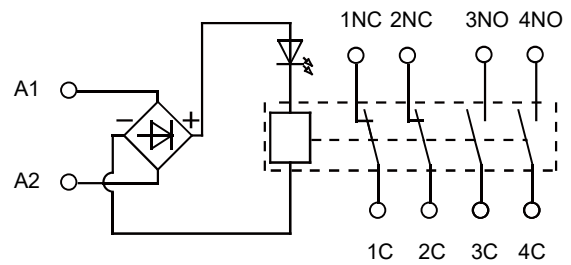
HFGD11-4/CN2H1D-RUxx



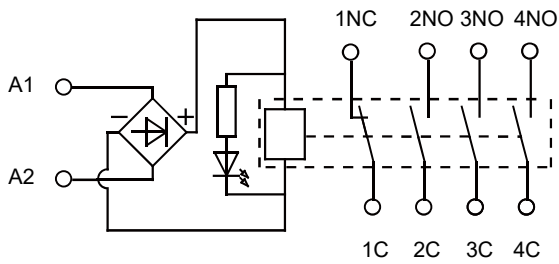
HFGD11-4/CN2H2D-RDxx



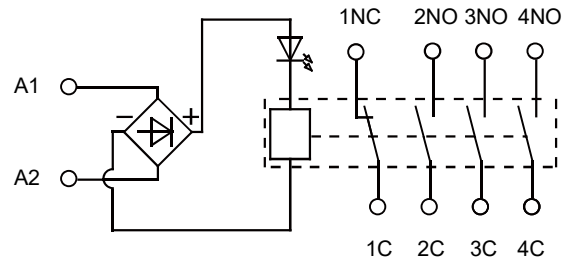
HFGD11-4/CN2H2D-RUxx



HFGD11-4/CN3H1D-RDxx

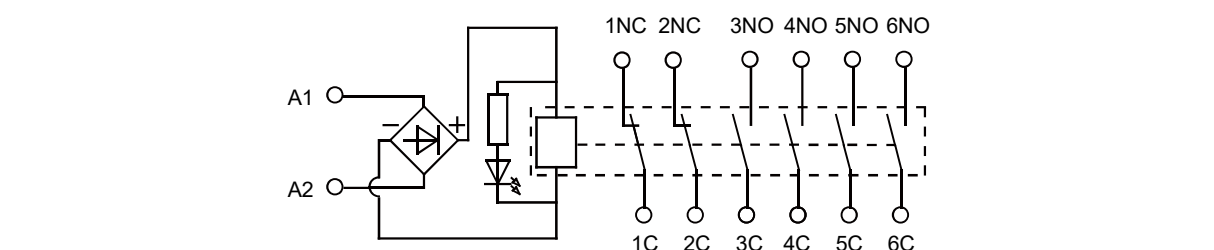


HFGD11-4/CN3H1D-RUxx

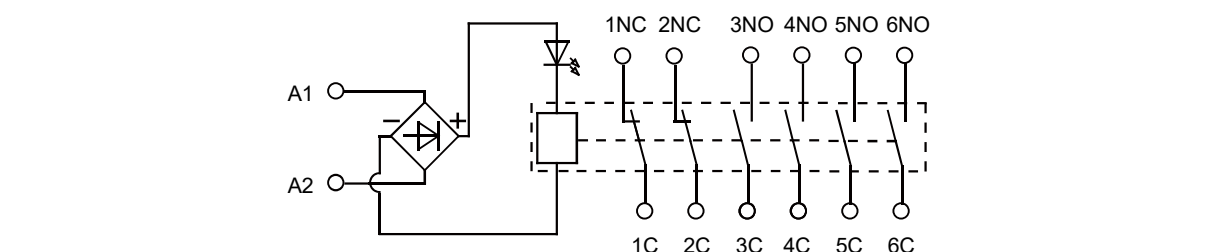


### SCHEMATIC DIAGRAM

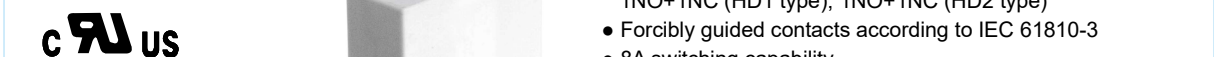
HFGD11-4/CN4H2D-RDxx



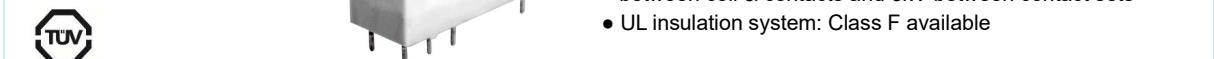
HFGD11-4/CN4H2D-RUxx



## Annex 1: Relay parameter table(HFA2)



File No.: E134517

File No.: 40034342 BoHS compliant

## Features

- Multi contact arrangements: 2 Form C (2Z type), 1NO+1NC (HD1 type), 1NO+1NC (HD2 type)
- Forcibly guided contacts according to IEC 61810-3
- 8A switching capability
- High insulation capability (1.2 / 50 Hz): 10kV surge voltage between coil & contacts and 6kV between contact sets
- UL insulation system: Class F available

**RoHS compliant**

## TECHNICAL SPECIFICATION

CONTACT DATA	
NAME	
ADDRESS	
CITY	
STATE	
ZIP	
PHONE	
FAX	
EMAIL	
WEBSITE	
INDUSTRY	
COMPANY TYPE	
EMPLOYMENT	
REVENUE	
MARKETING BUDGET	
MARKETING CHANNELS	
MARKETING STRATEGY	
MARKETING RESULTS	
MARKETING CHALLENGES	
MARKETING OPPORTUNITIES	
MARKETING TRENDS	
MARKETING INSIGHTS	
MARKETING RECOMMENDATIONS	
MARKETING ACTION PLAN	
MARKETING MONITORING	
MARKETING EVALUATION	
MARKETING IMPROVEMENT	
MARKETING SUCCESS	
MARKETING FAILURE	
MARKETING LESSONS	
MARKETING BEST PRACTICES	
MARKETING CASE STUDIES	
MARKETING TOOLS	
MARKETING SERVICES	
MARKETING PARTNERS	
MARKETING ALLIANCE	
MARKETING COOPERATION	
MARKETING COLLABORATION	
MARKETING NETWORK	
MARKETING COMMUNITY	
MARKETING INFLUENCE	
MARKETING REPUTATION	
MARKETING CREDIBILITY	
MARKETING AUTHORITY	
MARKETING LEADERSHIP	
MARKETING INNOVATION	
MARKETING CREATIVITY	
MARKETING IMAGINATION	
MARKETING VISION	
MARKETING MISSION	
MARKETING VALUES	
MARKETING CULTURE	
MARKETING ETHICS	
MARKETING INTEGRITY	
MARKETING HONESTY	
MARKETING TRANSPARENCY	
MARKETING ACCOUNTABILITY	
MARKETING RESPONSIBILITY	
MARKETING COMMITMENT	
MARKETING DEDICATION	
MARKETING PASSION	
MARKETING ENTHUSIASM	
MARKETING ENERGY	
MARKETING DYNAMISM	
MARKETING VIGOR	
MARKETING VITALITY	
MARKETING FLEXIBILITY	
MARKETING ADAPTABILITY	
MARKETING RESILIENCE	
MARKETING ENDURANCE	
MARKETING PERSISTENCE	
MARKETING PERSEVERANCE	
MARKETING DETERMINATION	
MARKETING RESOLUTION	
MARKETING COURAGE	
MARKETING BRAVERY	
MARKETING VALIANTNESS	
MARKETING HEROISM	
MARKETING GLORY	
MARKETING HONOR	
MARKETING REPUTATION	
MARKETING CREDIBILITY	
MARKETING AUTHORITY	
MARKETING LEADERSHIP	
MARKETING INNOVATION	
MARKETING CREATIVITY	
MARKETING IMAGINATION	
MARKETING VISION	
MARKETING MISSION	
MARKETING VALUES	
MARKETING CULTURE	
MARKETING ETHICS	
MARKETING INTEGRITY	
MARKETING HONESTY	
MARKETING TRANSPARENCY	
MARKETING ACCOUNTABILITY	
MARKETING RESPONSIBILITY	
MARKETING COMMITMENT	
MARKETING DEDICATION	
MARKETING PASSION	
MARKETING ENTHUSIASM	
MARKETING ENERGY	
MARKETING DYNAMISM	
MARKETING VIGOR	
MARKETING VITALITY	
MARKETING FLEXIBILITY	
MARKETING ADAPTABILITY	
MARKETING RESILIENCE	
MARKETING ENDURANCE	
MARKETING PERSISTENCE	
MARKETING PERSEVERANCE	
MARKETING DETERMINATION	
MARKETING RESOLUTION	
MARKETING COURAGE	
MARKETING BRAVERY	
MARKETING VALIANTNESS	
MARKETING HEROISM	
MARKETING GLORY	
MARKETING HONOR	
MARKETING REPUTATION	
MARKETING CREDIBILITY	
MARKETING AUTHORITY	
MARKETING LEADERSHIP	
MARKETING INNOVATION	
MARKETING CREATIVITY	
MARKETING IMAGINATION	
MARKETING VISION	
MARKETING MISSION	
MARKETING VALUES	
MARKETING CULTURE	
MARKETING ETHICS	
MARKETING INTEGRITY	
MARKETING HONESTY	
MARKETING TRANSPARENCY	
MARKETING ACCOUNTABILITY	
MARKETING RESPONSIBILITY	
MARKETING COMMITMENT	
MARKETING DEDICATION	
MARKETING PASSION	
MARKETING ENTHUSIASM	
MARKETING ENERGY	
MARKETING DYNAMISM	
MARKETING VIGOR	
MARKETING VITALITY	
MARKETING FLEXIBILITY	
MARKETING ADAPTABILITY	
MARKETING RESILIENCE	
MARKETING ENDURANCE	
MARKETING PERSISTENCE	
MARKETING PERSEVERANCE	
MARKETING DETERMINATION	
MARKETING RESOLUTION	
MARKETING COURAGE	
MARKETING BRAVERY	
MARKETING VALIANTNESS	
MARKETING HEROISM	
MARKETING GLORY	
MARKETING HONOR	
MARKETING REPUTATION	
MARKETING CREDIBILITY	
MARKETING AUTHORITY	
MARKETING LEADERSHIP	
MARKETING INNOVATION	
MARKETING CREATIVITY	
MARKETING IMAGINATION	
MARKETING VISION	
MARKETING MISSION	
MARKETING VALUES	
MARKETING CULTURE	
MARKETING ETHICS	
MARKETING INTEGRITY	
MARKETING HONESTY	
MARKETING TRANSPARENCY	
MARKETING ACCOUNTABILITY	
MARKETING RESPONSIBILITY	
MARKETING COMMITMENT	
MARKETING DEDICATION	
MARKETING PASSION	
MARKETING ENTHUSIASM	
MARKETING ENERGY	
MARKETING DYNAMISM	
MARKETING VIGOR	</

Contact arrangement	2 Form C (2Z type), 1NO+1NC (HD1 type), 1NO+1NC (HD2 type)	
Forcibly guided contacts Type (according to IEC61810-3)	HD1,HD2	Type A
	2Z	Type B
Contact Resistance	≤100mΩ (at 1A 6VDC)	
Contact material	AgSnO <sub>2</sub>	
Contact rating	6A 250VAC/30VDC	
Max.switching voltage	400VAC/30VDC	
Max.switching current	8A	
Max.switching power	1500VA/180W	
Mechanical endurance	1×10 <sup>7</sup> ops	
Electrical endurance	1×10 <sup>5</sup> OPS (1NO:6A 250VAC/30VDC, Resistive load, at 70℃, 1s on 9s off)	
	5×10 <sup>4</sup> OPS (1NC:6A 250VAC/30VDC, Resistive load, at 70℃, 1s on 9s off)	

CHARACTETISTIC		
Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
	Between contact sets	3000VAC 1min
Surge voltage(1.2/50μs)	Between coil & contacts	10kV
	Between open contacts	2.5kV
	Between contact sets	6kV

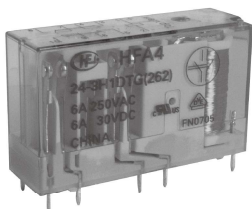
## Annex 1: Relay parameter table(HFA4)



File No.: E134517



File No.: 40034342



### Features

- Multi contact arrangements: 2NO+2NC, 3NO+1NC
- Forcibly guided contacts according to IEC 61810-3
- 6A switching capability
- Low input power: 360mW
- High insulation capability: 10kV surge voltage between input and output
- UL insulation system: Class F available

**RoHS compliant**

## TECHNICAL SPECIFICATION

CONTACT DATA		
Contact arrangement		2H2D,3H1D
Forcibly guided contacts Type(according to IEC61810-3)		Type A
Contact Resistance		≤100mΩ (at 1A 6VDC)
Contact material		AgSnO <sub>2</sub>
Contact rating		6A 250VAC/30VDC
Max.switching voltage		400VAC/30VDC
Max.switching current		6A
Max.switching power		1500VA/180W
Mechanical endurance		1×10 <sup>7</sup> OPS
Electrical endurance		1×10 <sup>5</sup> OPS(1NO:6A 30VDC, Resistive load, Room temp, 1s on 9s off)
		1×10 <sup>5</sup> OPS(1NO:6A 250VAC, Resistive load, Room temp, 1s on 9s off)
CHARACTETISTIC		
Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
	Between contact sets	2500VAC 1min(7-8/9-10), 4000VAC 1min (Other)
Surge voltage(1.2/50μs)	Between coil & contacts	10kV
	Between open contacts	2.5kV
	Between contact sets	6kV

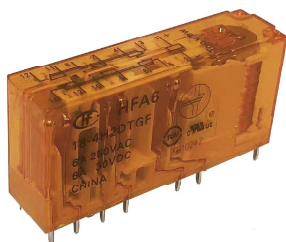
## Annex 3: Relay parameter table(HFA6)



File No.: E134517



File No.: B 053286 0043



### Features

- Multi contact arrangements: 5NO+1NC, 4NO+2NC, 3NO+3NC
- Forcibly guided contacts according to IEC 61810-3
- 6A switching capability
- Low input power: 500mW
- High insulation capability: 10kV surge voltage between input and output
- UL insulation system: Class F available

**RoHS compliant**

## TECHNICAL SPECIFICATION

### CONTACT DATA

Contact arrangement	5H1D,4H2D,3H3D
Forcibly guided contacts Type(according to IEC61810-3)	Type A
Contact Resistance	≤100mΩ (at 1A 6VDC)
Contact material	AgSnO <sub>2</sub>
Contact rating	6A 250VAC/30VDC
Max.switching voltage	400VAC/30VDC
Max.switching current	6A
Max.switching power	1500VA/180W
Mechanical endurance	1×10 <sup>7</sup> OPS
Electrical endurance	1×10 <sup>5</sup> OPS (1NO:6A 30VDC, Resistive load, Room temp, 1s on 9s off)
	1×10 <sup>5</sup> OPS (1NO:6A 250VAC, Resistive load, Room temp, 1s on 9s off)

### 性能参数

Insulation resistance		1000MΩ(500VDC)
Dielectric strength	Between coil & contacts	4000VAC 1min
	Between open contacts	1500VAC 1min
	Between contact sets	2500VAC 1min(11-12/13-14), 4000VAC 1min (Other)
Surge voltage(1.2/50μs)	Between coil & contacts	10kV
	Between contact sets	5kV

## Annex 4: Wiring terminal parameter table



### Features

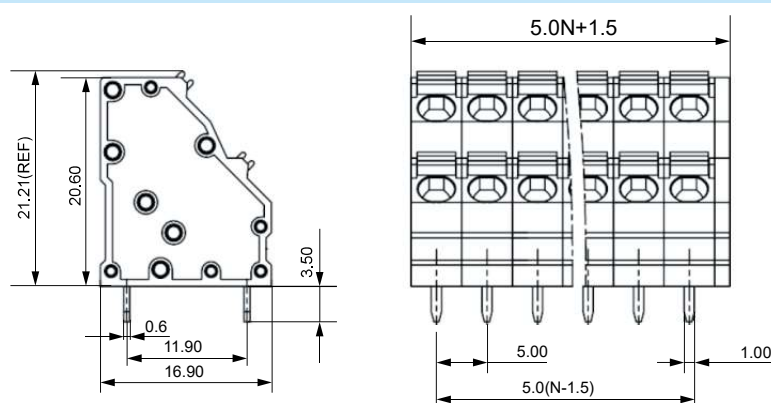
- PCB pair screw terminal
- Can be quickly inserted and removed

### TECHNICAL SPECIFICATION

Rated load	10A 300V(UL Standard)/17.5A 250V(IEC Standard)
Pitch	5.0mm
Conductor Cross Section	0.2~1.5mm <sup>2</sup>
Rated Dielectric Strength	1600VAC
Rated Withstand Pulse Voltage	4kV
Ambient Temperature	-40℃~105℃
Striping Length	(8-9)mm
Tightening Torque	/
Insulation Material Type/Insulation Material Group	UL94V-0

### OUTLINE DIMENSIONS

Unit: mm



#### Remark:

- 1) Some outline dimensions of the product have no dimensional tolerance noted: outline dimension  $\leq 1\text{mm}$ , tolerance should be  $\pm 0.2\text{mm}$ ; outline dimension  $> 1\text{mm}$  and  $\leq 5\text{mm}$ , tolerance should be  $\pm 0.3\text{mm}$ ; outline dimension  $> 5\text{mm}$ , tolerance should be  $\pm 0.4\text{mm}$ .
- 2) In the layout of PCB mounting holes, if no dimensional tolerance is noted, it shall be calculated as  $\pm 0.1\text{mm}$ .

#### Disclaimer:

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. We could not evaluate all the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact Hongfa for the technical service. However, it is the user's responsibility to determine which product should be used only.