

# HFGD2-11

# AC SOLID STATE RELAY



File No.:E133481



### Features

- No noise
- High endurance
- Zero-crossing / random triggering optional
- Opto-isolation between input and output, withstand voltage 4 kV
- Load capacity:  
300 VAC: 10A / 25A / 40A  
600 VAC: 25A / 50A / 75A / 90A / 125A
- Suitable for PCB mounting

## CHARACTERISTICS

### INPUT

Rated control voltage	24VDC	240VAC
Control voltage range	4~32VDC	90~280VAC(Only applicable to Unidirectional SCR type)
Turn-on voltage	4VDC	90VAC
Turn-off voltage	1VDC	6VAC
Max reverse voltage	32VDC	-
Input current (typical)	13mA	18mA
Max input current	20mA	25mA
Operating status indicator	Green	Green
Wiring method	Screw Mounting	Screw Mounting
Wiring polarity	Polarity Required	No polarity requirement

### OUTPUT

Switching type	Random switching, zero-crossing switching							
Output configuration	1NO							
Connection method	Screw mounting							
Output device type	TRIAC				SCR			
Rated load voltage	240A:240VAC			240A:240VAC		480A:480VAC		
Load voltage range	24~300VAC			24~300VAC		48~600VAC		
Max transient voltage	600Vpk			600Vpk		1200Vpk		
Rated load current (@ 40°C)	10A	25A	40A	25A	50A	75A	90A	125A
Min off-state dv/dt	500V/μs	500V/μs	500V/μs	500V/μs	500V/μs	500V/μs	500V/μs	500V/μs
Min load current	100mA	100mA	100mA	100mA	200mA	200mA	300mA	300mA
Max surge current (10 ms)	120A	250A	400A	250A	800A	1000A	1200A	2000A
Max operating current	10A	25A	40A	25A	50A	75A	90A	125A
Max I <sup>2</sup> t (10 ms)	78A <sup>2</sup> s	340A <sup>2</sup> s	800A <sup>2</sup> s	340A <sup>2</sup> s	3200A <sup>2</sup> s	5000A <sup>2</sup> s	7200A <sup>2</sup> s	20000A <sup>2</sup> s
Off-state leakage current	≤5mA			≤1mA				
Protection circuit	RC component			TVS				
Turn-on time	Random type: ≤1ms							
	Zero-crossing type: ≤1/2cycle+1ms							
Turn-off time	≤1/2cycle+1ms							
On-state voltage drop	≤1.5Vrms							
Operating frequency range	45~65Hz							
Load category	AC-1							
Min power factor	0.5							



HONGFA INDUSTRIAL ELECTRONIC MODULE

ISO9001, IATF16949, ISO14001, OHSAS18001, IECQ QC 080000 CERTIFIED

2026 Rev. 1.00

OTHER PARAMETER	
Ambient temperature	-30°C~80°C
Storage temperature	-30°C~100°C
Humidity	45%~85%RH
Weight(Typ.)	92g
Protection grade	IP20
Vibration resistance	10Hz~58.1Hz, 1.5mmDA
	58.1Hz~150Hz, 10g
Shock resistance	100g
Dielectric Strength	(Between input channel, output channel and base plate) ≥4000VAC
	(Between input channel and output channel) ≥4000VAC
Insulation resistance	≥1000MΩ(@500VDC)
Rated impulse withstand voltage (1.2/50μs)	≥6kV
Pollution degree	2
Overvoltage category	III
Standard compliance	EN IEC60947-4-3, UL508 Edition 19

### Product Installation and Maintenance

Installation method	Screw mounting
Wiring capacity	Input terminal wire size (M4 thread connection): Solid conductor cross-sectional area: 0.75.....2.5mm <sup>2</sup> (AWG18.....AWG14) Stranded conductor cross-sectional area: 0.75.....2.5mm <sup>2</sup> (AWG18.....AWG14) Strip length: 10mm
	Output terminal wire size (M5 thread connection): Solid conductor cross-sectional area: 1.5.....10 mm <sup>2</sup> (AWG16.....AWG8) Stranded conductor cross-sectional area: 1.5.....6 mm <sup>2</sup> (AWG16.....AWG10) Strip length: 14.5mm

### ORDERING INFORMATION

	<b>HFGD2-11 /</b>	<b>D</b>	<b>-480A</b>	<b>50</b>	<b>Z</b>	<b>S</b>	<b>-T</b>	<b>L</b>	<b>(XXX)</b>
<b>Type</b>									
<b>Input rated voltage</b>	<b>D:</b> 4~32VDC <b>A:</b> 90~280VAC (Only applicable for "SCR")								
<b>Output rated voltage</b>	<b>240A:</b> 24~300VAC(10A/25A/40A) (Applicable for "TRIAC") <b>240A:</b> 24~300VAC(25A/50A/75A/90A/125A) <b>480A:</b> 48~600VAC(25A/50A/75A/90A/125A) (Applicable for "SCR")								
<b>Output current</b>	<b>10:</b> 10A <b>50:</b> 50A	<b>25:</b> 25A <b>75:</b> 75A	<b>40:</b> 40A <b>90:</b> 90A	<b>125:</b> 125A					
<b>Trigger mode</b>	<b>Z:</b> Zero-crossing trigger <b>P:</b> Random trigger								
<b>Output device</b>	<b>Nil:</b> TRIAC <b>S:</b> SCR								
<b>Overvoltage protection</b>	<b>Nil:</b> Without TVS protection <b>T:</b> With TVS protection								
<b>LED indicator</b>	<b>L:</b> With LED indicator								
<b>Special code<sup>1)</sup></b>	<b>XXX:</b> Customer special requirement								

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

# OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

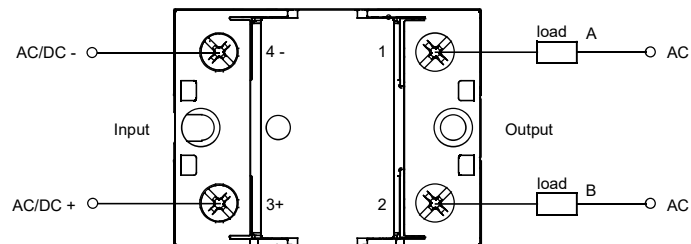
Unit: mm

## OUTLINE DIMENSIONS



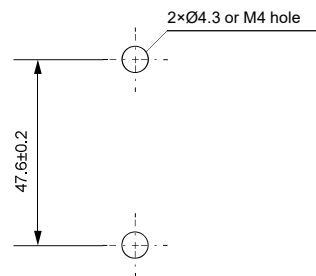
**Notes:** M4 screw tightening torque: 1.2–1.7 N·m;  
M5 screw tightening torque: 2.0–3.0 N·m;  
Tolerances for unspecified dimensions:  $\pm 0.5$ .

## WIRING DIAGRAM



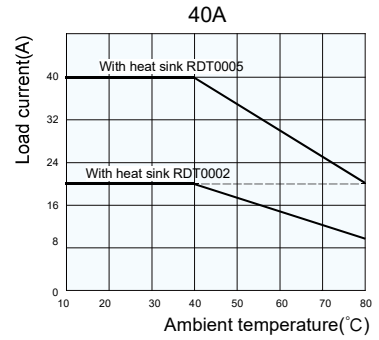
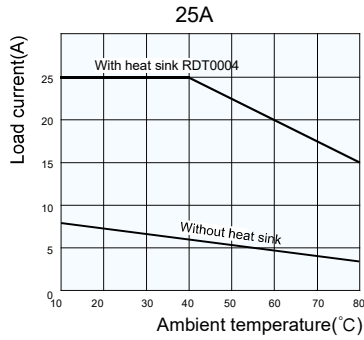
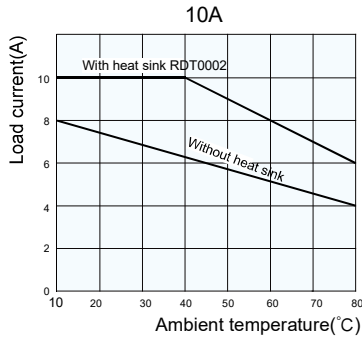
**Notes:** The load can be connected to position A or B;  
Tolerance of unspecified dimensions:  $\pm 0.5$ .

## PC BOARD LAYOUT

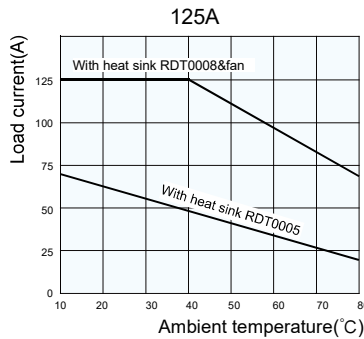
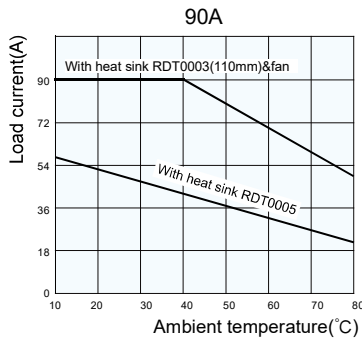
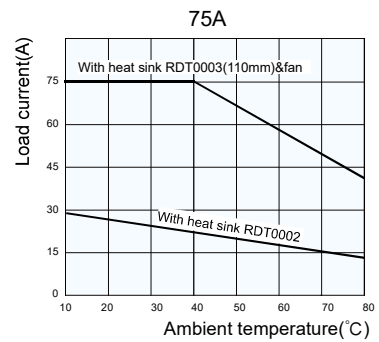
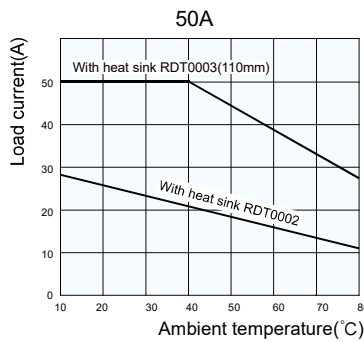
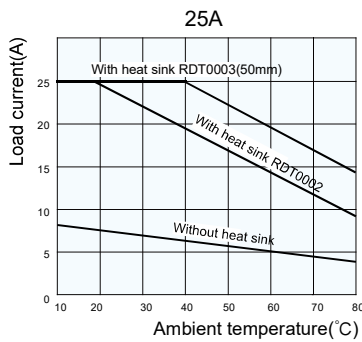


# CHARACTERISTIC CURVES

## TRIAC



## SCR



### 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.