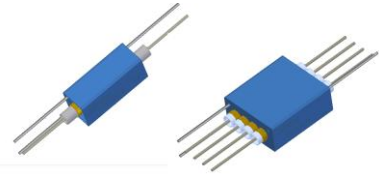


## HGFR Serie

## High voltage Mercury Reed Relay

### 1 Feature

- ◆ High power mercury reed relay with dielectric strength up to 3500VDC
- ◆ High carry current
- ◆ High Insulation resistance, up to  $10^{13}\Omega$
- ◆ Low contact resistance, excellent lifetime characteristics
- ◆ External magnetic and electrostatic shield
- ◆ Custom Design, conforming to Rohs directive



### 2 Performance Data

Parameter		Units	Value		
Relay Model		/	HGFR□-□□L	HGFR□-□□	HGFR□-□□H
Contact Rating		W	50		
Max.Switching Voltage (Max DC/Peak AC)		V	1000		1500
Max.Switching Current (Max DC/Peak AC)		A	2.0		
Max.Carry Current	at 60°C	A	3.0	3.0	3.0
	at 30°C	A		5.2	
Contact Resistance		mΩ	80		
Dielectric Strength (static)	Between contact	V	2000		3500
	Contact/shield to coil	V	2000		3500
	Contacts to shield	V	2000		3500
Insulation Resistance		Ω	$10^{12}$	$10^{13}$	
Operate Time		ms	3.0		
Release Time		ms	3.0		
Vibration(0~2000Hz)		G	20		
Shock(11ms, 1/2 sine)		G	50		
Operating Temp		°C	-20~+70		
Storage Temp		°C	-35~+105		
Life Expectancy		Ops	$5 \times 10^7$ (at 500VDC-100mA)		
Outline Dimensions		/	Reference outline drawing		

### 3 Coil Parameters

Model	Nominal Voltage (VDC)	Pickup Voltage Max.(VDC)	Dropout Voltage Min.(VDC)	Operate Voltage Max.(VDC)	Coil Resistance ( $\pm 10\% \Omega$ at 20°C)
HGFR□-1A□	5	4	0.5	6.5	100
HGFR□-2A□	12	9	1	16	400
	24	18	2	29	1600

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Model	Nominal Voltage (VDC)	Pickup Voltage Max.(VDC)	Dropout Voltage Min.(VDC)	Operate Voltage Max.(VDC)	Coil Resistance ( $\pm 10\% \Omega$ at 20°C)
HGFR□-3A□	12	9	1	16	300
	24	18	2	29	1200
HGFR□-4A□	12	9	1	16	300
	24	18	2	29	1200

#### 4 Example of order marking

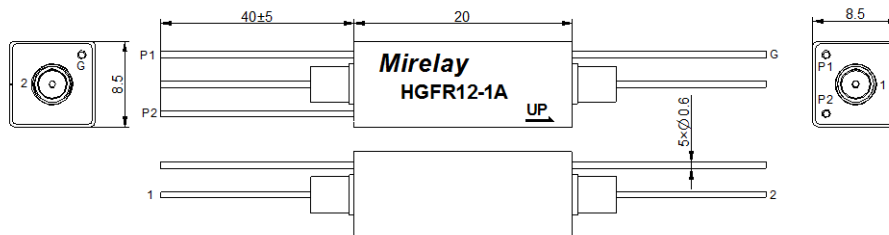
**HGFR** □ - □ □ □ - **(XXX)**  
 ① ② ③ ④ ⑤ ⑥

- ① Product model: HGFR
- ② Nominal coil voltage: 05: 5VDC、12: 12VDC、24: 24VDC
- ③ Contact form: 1A: 1 Form A、2A: 2 Form A、3A: 3 Form A、4A: 4 Form A
- ④ Layout: Blank: Vertical mount、01: Flat mount
- ⑤ Switch type: Blank: High current、L: Standard、H: High voltage<sup>(1)</sup>
- ⑥ Special code: Customer special requirement

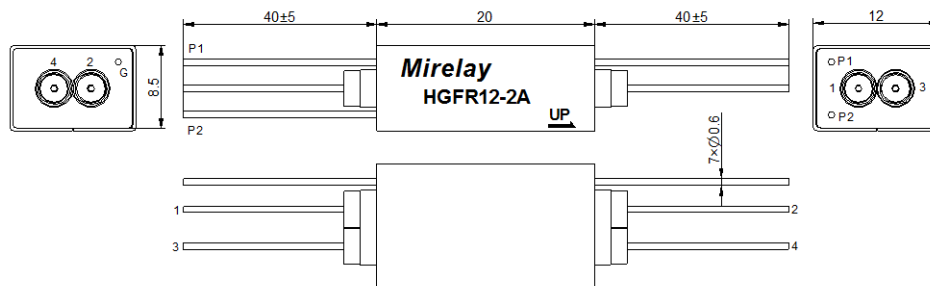
Remarks: (1) No high voltage type with contact form 4A.

#### 5 Outline drawing

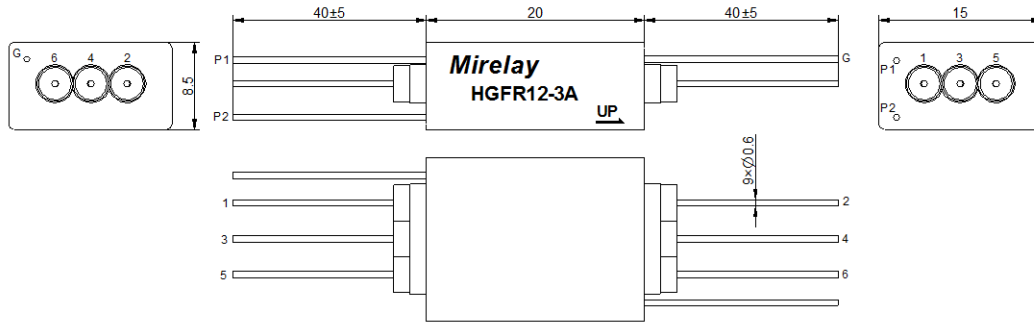
##### 1) HGFR□-1A



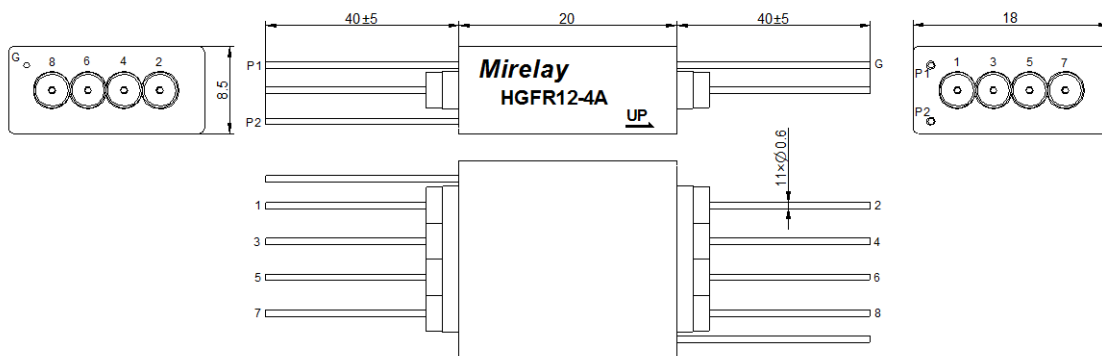
##### 2) HGFR□-2A



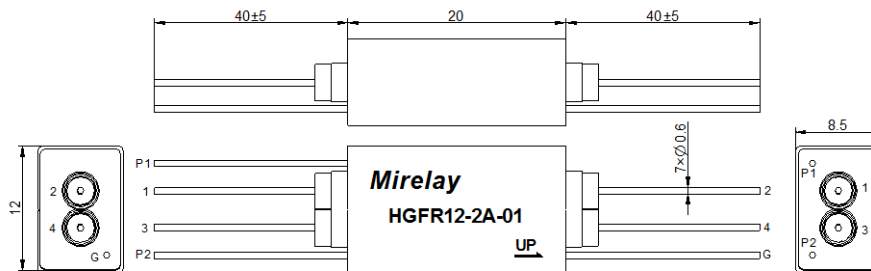
## 3) HGFR□-3A



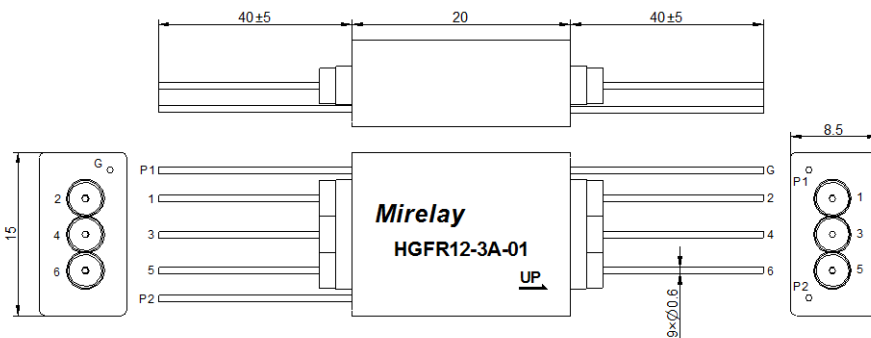
## 4) HGFR□-4A



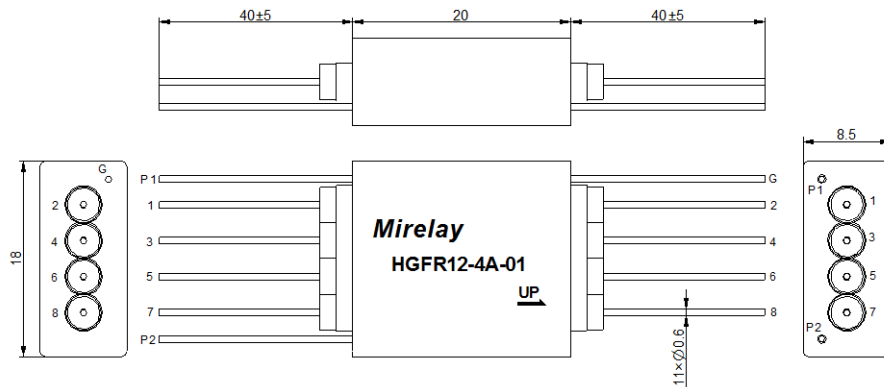
## 5) HGFR□-2A-01



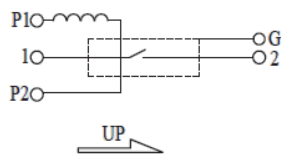
## 6) HGFR□-3A-01



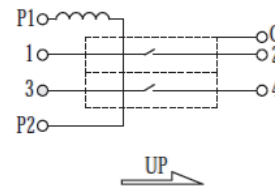
## 7) HGFR□-4A-01


**6 Wiring diagram**

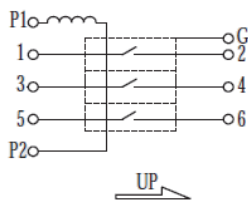
## 1) HGFR□-1A



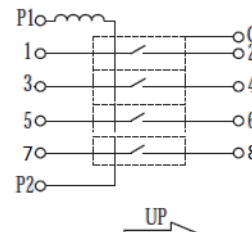
## 2) HGFR□-2A



## 3) HGFR□-3A



## 4) HGFR□-4A


**7 Precautions for use**

- ※ Avoid installing relays where rain falls, or where there is a strong magnetic field, or near an object with thermal radiation.
- ※ Switching inductive or capacitive load systems will produce peak voltage or current, it is recommended to use protective circuit, otherwise, may cause relay damage.
- ※ Avoid excessive packing density in use which may affect the electrical characteristics of the relay.
- ※ Mechanical impact strength is too large, will cause the relay to use the fault.
- ※ When the relay is used for wave soldering, the maximum temperature is 260°C and the time does not exceed 5s.
- ※ Hg wet contacts must be mounted within 30° of vertical plane.

**⚠ Statement:**

The document is for customer reference only. Specifications and parameters may be changed due to product improvement. For the specific parameters and performance of each product, please refer to the specifications and samples provided by Mirelay without further notice.

Relay performance parameters in different application areas are different, so customers should choose the appropriate products according to the specific conditions of use, if in doubt, please contact Shanghai MiRelay Electronics Co.,Ltd. for more technical support.

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