

HGFR Series High Voltage Mercury Reed Relays

High voltage Mercury Reed Relay

1 Features

- ◆ High-power mercury reed relay, dielectric strength up to 3500VDC
- ◆ High carry current capability
- ◆ High insulation resistance, up to $10^{13}\Omega$
- ◆ Low contact resistance, long-life hermetically sealed contacts
- ◆ External magnetic and electrostatic shielding
- ◆ Custom designs available, RoHS compliant

2 Performance Data

Parameter	Unit	HGFR□-□□L	HGFR□-□□	HGFR□-□□H
Contact rating	W	50		
Max. switching voltage (Max DC/Peak AC)	V	500	1000	1500
Max. switching current (Max DC/Peak AC)	A	2.0	2.0	2.0
Max. carry current	A	3.0		3.0
at 60°C	A		2.6	
at 30°C	A		5.2	
Contact resistance	mΩ	80		
Dielectric strength				
Between open contacts	V	2000	2000	3500
Between contacts and coil	V	2000	2000	3500
Between contacts and shield	V	2000	2000	3500
Insulation resistance	Ω	10^{10}	10^{12}	10^{13}
Operate time	ms	2.0		
Release time	ms	2.0		
Vibration (0~2000Hz)	G	20		
Shock (11 ms, 1/2 sine wave)	G	50		
Operating temperature	°C	-20~+70		
Storage temperature	°C	-35~+105		
Expected life	Ops	5×10^7 (at 500VDC, 100mA)		
Dimensions	/	See dimension drawings		

Note (1): No H (high voltage) type for 4A contact form models.

3 Coil Data

Model	Rated voltage (VDC)	Pick-up voltage (VDC)	Drop-out voltage (VDC)	Max. voltage (VDC)	Coil resistance
HGFR□-1A□	5	4	0.5	6.5	100
	12	9	1	16	400
	24	18	2	29	1600
HGFR□-2A□	5	4	0.5	6.5	100
	12	9	1	16	400
	24	18	2	29	1600
HGFR□-3A□	12	9	1	16	300
	24	18	2	29	800
HGFR□-4A□	12	9	1	16	300
	24	18	2	29	800

Coil resistance unit: $\pm 10\% \Omega$ at 20°C

4 Part Number Code

Code format: HGFR □ - □ □ □ -(XXX)

Positions: ① ② ③ ④ ⑤ ⑥

Code	Item	Description
①	Series	HGFR
②	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	Mounting	None: vertical mount, 01: flat mount
⑤	Switch type	None: high current, L: standard, H: high voltage (1)
⑥	Special characteristic number	Per customer requirements

5 Cautions for Use

- Do not install the relay where it is directly exposed to rain, in strong magnetic fields, or near objects with heat radiation.
- Switching inductive or capacitive loads may generate peak voltage or current; a protection circuit is recommended, otherwise the relay may be damaged.
- Avoid excessive packing density during use, as this may affect the electrical characteristics of the relay.
- Excessive mechanical shock may cause relay malfunction.
- For wave soldering: max. temperature 260°C, max. 5 s.

6 Disclaimer

This document is for customer reference only. Specifications are subject to change due to product improvements without prior notice. The final specifications of each product are subject to the Product Commitment and approved samples.

Performance requirements vary by application. Customers should select the appropriate product based on actual operating conditions. If in doubt, please contact us.

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