

**HFS40A (JGX-40FA)****SOLID STATE RELAY****Features**

- 2500V dielectric strength
- LED status indicator
- Photo isolation
- Built-in snubber
- Zero cross or random turn-on
- Printed circuit board mount
- RoHS compliant

**INPUT (TA = 25°C)**

|                                 |     |                 |
|---------------------------------|-----|-----------------|
| Control voltage range           | 05D | 4 to 6VDC       |
|                                 | 12D | 9.6 to 14.4VDC  |
|                                 | 24D | 19.2 to 28.8VDC |
| Must operate voltage            | 05D | 4VDC            |
|                                 | 12D | 9.6VDC          |
|                                 | 24D | 19.2VDC         |
| Must release voltage            | 05D | 1.0VDC          |
|                                 | 12D |                 |
|                                 | 24D |                 |
| Max. reverse protection voltage | 05D | -6VDC           |
|                                 | 12D | -14.4VDC        |
|                                 | 24D | -28.8VDC        |
| Max. input current              |     | 20mA            |

**OUTPUT (TA = 25°C)**

|                            |  |                 |
|----------------------------|--|-----------------|
| Load voltage range         | 220A: 75 to 280VAC<br>380A: 48 to 440VAC |                 |
| Load current range         | 2A type: 0.1 to 2A<br>3A type: 0.1 to 3A |                 |
| Max. surge current (10ms)  | 10 times of rated current                |                 |
| Max. leakage current       | 1.5mA                                    |                 |
| Max. on-state voltage drop | 1.5Vrms                                  |                 |
| Max. turn-on time          | Zero cross turn-on                       | 1/2 cycle + 1ms |
|                            | Random turn-on                           | 1ms             |
| Max. turn-off time         | 1/2 cycle + 1ms                          |                 |
| Max. transient overvoltage | HFS40A/□□-220A□□□                        | 600Vpk          |
|                            | HFS40A/□□-380A□□□                        | 800Vpk          |
| Min. off-state dv/dt       | 100V/μs                                  |                 |
| Min. power factor          | 0.5                                      |                 |

**GENERAL (TA = 25°C)**

|                                       |                        |                |
|---------------------------------------|------------------------|----------------|
| Dielectric strength (input to output) | 2500VAC, 50/60Hz, 1min |                |
| Insulation resistance                 | 1000MΩ (at 500VDC)     |                |
| Max. capacitance (input to output)    | 8pF                    |                |
| Vibration resistance                  | 10 to 55Hz 1.5mm DA    |                |
| Shock resistance                      | 1000m/s <sup>2</sup>   |                |
| Ambient temperature                   | Operating              | -30°C to 80°C  |
|                                       | Storage                | -30°C to 100°C |
| Ambient humidity                      | 45% to 85% RH          |                |
| Unit weight                           | Approx. 18g            |                |

**DESCRIPTION**

This SPST-NO printed circuit board mount SSR provides AC output switching in a high density package. The HFS40A's DC input is compatible with 5, 12 and 24V logic systems. The relays include a LED indicator to provide input status information. All models include an internal snubber. The relays provide 2500VAC opto-isolation, between input and output. Encapsulation, thermally conductive epoxy.

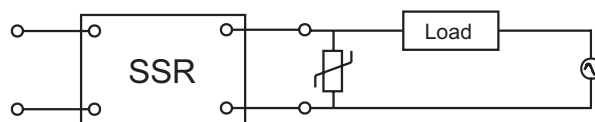
**APPLICATIONS**

- I/O interface
- Programmable controllers

**PRECAUTIONS**

1. Soldering must be completed within 10 seconds at 260°C or less or within 5 seconds at 350°C or less.
2. The SSR case serves to dissipate heat. Install the relays so that they are adequately ventilated. If poor ventilation is unavoidable, reduce the load current by half.
3. When using the HFS40A series for an AC load with a peak voltage of more than the rated, connect the load terminals of the relay to an inrush absorber (varistor). The recommended varistor voltage as follow:

| The rated voltage | The recommended varistor voltage |
|-------------------|----------------------------------|
| 200VAC            | 470VAC                           |
| 380VAC            | 750VAC                           |



HONGFA RELAY

ISO9001、ISO/TS16949、ISO14001、OHSAS18001 CERTIFIED

2007 Rev. 1.00

## ORDERING INFORMATION

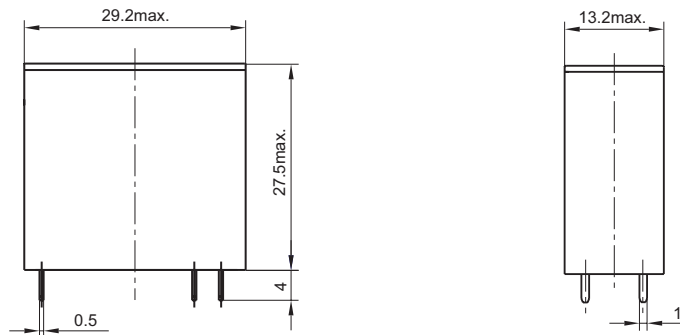
|                       |   |                   |  |  |  |  |  |
|-----------------------|---|-------------------|--|--|--|--|--|
| Type                  | HFS40A / 05 D- 220 A 2 Z- L (XXX)                                   |                   |  |  |  |  |  |
| Input voltage         | 05: 4 to 6V   | 12: 9.6 to 14.4V  |  |  |  |  |  |
|                       | 24: 19.2 to 28.8V   |                   |  |  |  |  |  |
| Input voltage form    | D: DC   |                   |  |  |  |  |  |
| Load voltage          | 220: 220V   | 380: 380V         |  |  |  |  |  |
| Load voltage form     | A: AC   |                   |  |  |  |  |  |
| Load current          | 02: 2A  | 03: 3A            |  |  |  |  |  |
| Zero cross function   | Z: Zero cross turn-on   | P: Random turn-on |  |  |  |  |  |
| LED indicator         | L: With LED   |                   |  |  |  |  |  |
| Customer special code | Only for special requirements, e.g. (555) stands for RoHS compliant |                   |  |  |  |  |  |

Notes: HFS40A is an environmental friendly product, please mark special code (555) when order.

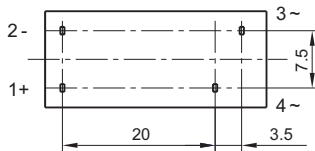
## OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

Unit: mm

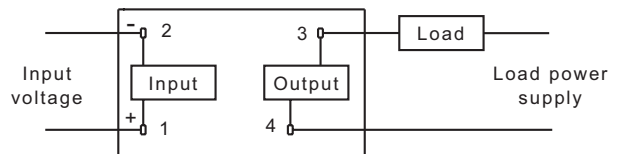
### Outline Dimensions



### PCB Layout (Bottom view)

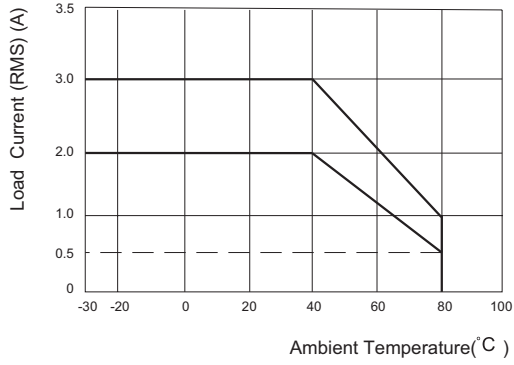


### Wiring Diagram

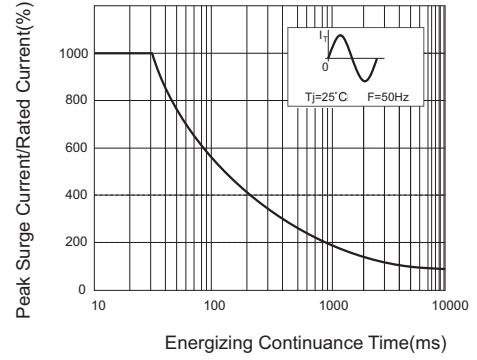


## CHARACTERISTIC CURVES

Max. Load Current  
vs. Ambient Temperature



Max. Permissible Non-repetitive  
Peak Surge Current vs. Continuance Time



### Disclaimer

This datasheet is for the customers' reference. All the specifications are 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.

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