

# HF9116

## TO-5 2 FORM C HERMETICALLY SEALED ELECTRO MAGNETIC RELAY WITH COIL TRANSIENT SUPPRESSION



### Features

- Grid type output
- With coil transient suppression
- Failure rate level can be level M
- High ambient applicability
- All metal welded construction
- Fusing soldering and marked by laser

### AMBIENT ADAPTABILITY

| Ambient grade             | I                    | II                        | III                       |
|---------------------------|----------------------|---------------------------|---------------------------|
| Ambient temperature       | -55 °C to 85 °C      | -55 °C to 85 °C           | -65 °C to 125 °C          |
| Humidity                  |                      |                           | 98 %, 40 °C               |
| Low air pressure          | 58.53 kPa            | 4.39 kPa                  | 4.39 kPa                  |
| Sine vibration            | Frequency            | 10 Hz to 1000 Hz          | 10 Hz to 3000 Hz          |
|                           | Acceleration         | 147 m/s <sup>2</sup>      | 196 m/s <sup>2</sup>      |
| Shock resistance          | 490 m/s <sup>2</sup> | 735 m/s <sup>2</sup>      | 735 m/s <sup>2</sup>      |
| Random vibration          | —                    | 20 (m/s <sup>2</sup> )/Hz | 40 (m/s <sup>2</sup> )/Hz |
| Steady-state acceleration |                      |                           | 490 m/s <sup>2</sup>      |

### CONTACT DATA

| Ambient grade      | I               | II     | III    |
|--------------------|-----------------|--------|--------|
| Arrangement        |                 |        | 2 C    |
| Contact resistance | Initial max.    | 125 mΩ | 100 mΩ |
|                    | After life max. | 250 mΩ | 200 mΩ |

### Contact ratings

| Ambient grade | Contact load          | Type      | Electrical life min.    |
|---------------|-----------------------|-----------|-------------------------|
| I             | 1 A 28 Vd.c.          | Resistive | 1 x 10 <sup>5</sup> OPS |
|               | 1 A 28 Vd.c.          | Resistive | 1 x 10 <sup>5</sup> OPS |
| II            | 0.2 A 28 Vd.c. 320 mH | Inductive | 1 x 10 <sup>5</sup> OPS |
|               | 0.1 A 28 Vd.c.        | Lamp load | 1 x 10 <sup>5</sup> OPS |
| III           | 1 A 28 Vd.c.          | Resistive | 1 x 10 <sup>5</sup> OPS |
|               | 0.1 A 115 Va.c.       | Resistive | 1 x 10 <sup>5</sup> OPS |
|               | 0.2 A 28 Vd.c. 320 mH | Inductive | 1 x 10 <sup>5</sup> OPS |
|               | 0.1 A 28 Vd.c.        | Lamp load | 1 x 10 <sup>5</sup> OPS |
|               | 50 μA 50 mVd.c.       | Low level | 1 x 10 <sup>5</sup> OPS |



HONGFA HERMETICALLY SEALED RELAY

## SPECIFICATION

| Ambient grade   |                         | I                          | II   | III  |
|---|-------------------------|----------------------------|--|--|
| Insulation resistance min.                            |                         | 1000 MΩ (@ 500 Vd.c.)      | 10000 MΩ (@ 500 Vd.c.)                     | 10000 MΩ (@ 500 Vd.c.)                     |
| Dielectric strength min. (Normal condition)           | Between open contacts   | 500 Vr.m.s.                | 500 Vr.m.s.                                | 500 Vr.m.s.                                |
|   | Between contact & coil  | 500 Vr.m.s.                | 500 Vr.m.s.                                | 500 Vr.m.s.                                |
|   | Between contact & cover | 500 Vr.m.s.                | 500 Vr.m.s.                                | 500 Vr.m.s.                                |
|   | Between contact group   | 500 Vr.m.s.                | 500 Vr.m.s.                                | 500 Vr.m.s.                                |
|   | Between coil & cover    | 500 Vr.m.s.                | 500 Vr.m.s.                                | 500 Vr.m.s.                                |
| Dielectric strength min. (Low air pressure condition) |                         | 125 Vr.m.s.                | 125 Vr.m.s.                                | 125 Vr.m.s.                                |
| Leakage rate max.                                     |                         | 1 Pa·cm <sup>3</sup> /s    | 1 x 10 <sup>-1</sup> Pa·cm <sup>3</sup> /s | 1 x 10 <sup>-3</sup> Pa·cm <sup>3</sup> /s |
| Operate time max.                                     |                         | 2 ms                       |  |  |
| Release time max.                                     |                         | 4 ms                       |  |  |
| Mounting style  |                         | See the mounting dimension |  |  |
| Terminals   |                         | See the terminal styles    |  |  |
| Work position   |                         | Random                     |  |  |
| Weight max.   |                         | 2.55 g                     |  |  |

## COIL DATA

|                   |             |
|-------------------|-------------|
| Normal coil power | Approx.0.5W |
|-------------------|-------------|

### Coil Version

| Order Number | Coil voltage    |            | at 25 °C                  |                      |                   |                       | -65°C to 125°C       |                   |                       |
|--------------|-----------------|------------|---------------------------|----------------------|-------------------|-----------------------|----------------------|-------------------|-----------------------|
|              | Nominal voltage | Value max. | Coil resistance (1±10%) Ω | Pick-up voltage max. | Hold voltage max. | Drop-out voltage min. | Pick-up voltage max. | Hold voltage max. | Drop-out voltage min. |
|              |                 |            |                           |                      |                   |                       |                      |                   |                       |
| 005          | 5               | 5.8        | 50                        | 2.7                  | 1.4               | 0.22                  | 3.5                  | 2.3               | 0.15                  |
| 006          | 6               | 8          | 98                        | 3.5                  | 2.0               | 0.28                  | 4.5                  | 3.2               | 0.18                  |
| 009          | 9               | 12         | 220                       | 5.3                  | 3.0               | 0.54                  | 6.8                  | 4.9               | 0.35                  |
| 012          | 12              | 16         | 390                       | 7.0                  | 4.0               | 0.63                  | 9.0                  | 6.5               | 0.40                  |
| 018          | 18              | 24         | 880                       | 10.5                 | 6.0               | 0.91                  | 13.5                 | 10.0              | 0.58                  |
| 027          | 27              | 32         | 1560                      | 14.2                 | 8.0               | 1.0                   | 18.0                 | 13.0              | 0.89                  |

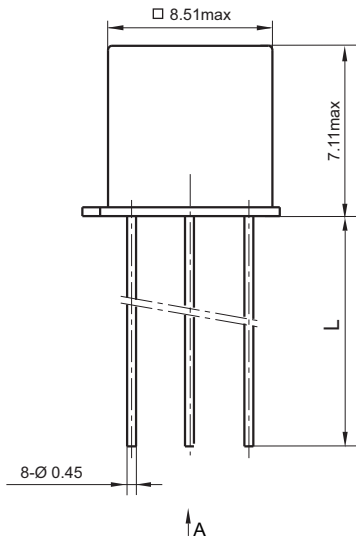
Notes: We can offer many kinds of of coil voltage under the requirement of users.

## ORDERING INFORMATION

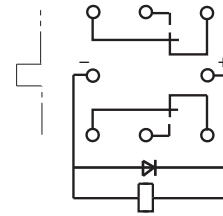
|                 |   |      |   |     |     |
|-----------------|---|------|---|-----|-----|
| Type            | HF9116  | -012 | M | -01 | - I |
| Order Number    | 005、006、009、012、018、027   |      |   |     |     |
| Failure Rate    | L: Failure rate level L (level III products available) <sup>1)</sup><br>M: Failure rate level M (level III products available) <sup>1)</sup><br>Nil: Without failure rate requirement(level I ,II ,IIIproducts available) |      |   |     |     |
| Terminals Style | 01、02、03 (See " Terminal styles " below)  |      |   |     |     |
| Ambient Grade   | I : level I    II : level II    III: level III  |      |   |     |     |

Notes: 1) For the failure rate of L or M ,the letter "III" of ambient grade level will not appear on relay cover.

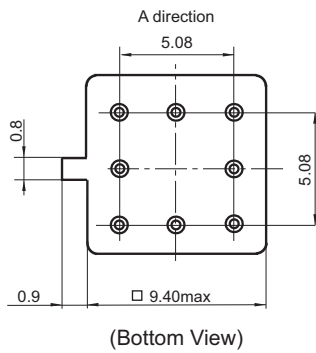
Outline Dimension



| L        | Terminal Styles Code |
|----------|----------------------|
| 5.0 ±0.5 | 01                   |
| 12.5min  | 02                   |
| 38min    | 03                   |



Wiring Diagram  
(Bottom View)



(Bottom View)

Disclaimer

This datasheet is for the customers' reference. All the specifications are subject to change without notice.

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