

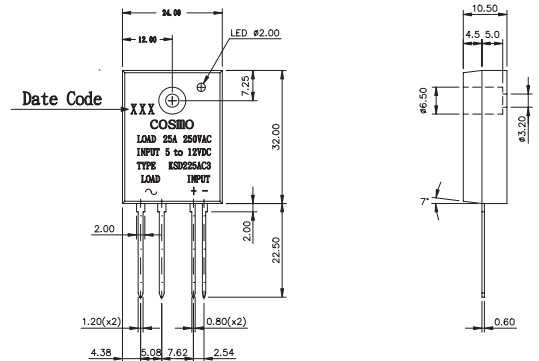
## Features

1. Molded epoxy body.
2. Zero crossing circuit.
3. High input/output insulation.
4. Small size and light weight.
5. Can be installed directly on the PC board.
6. Fast reactive speed.
7. Normally open.

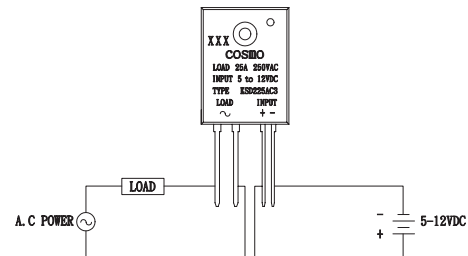
## Applications

1. Household Appliances.
2. Temperature Control System.
3. Industrial Automatic Control.
4. Lighting System.
5. Office Appliances.
6. Factory Appliances.

## Outside Dimension : Unit (mm)



## Schematic : Top View



## Absolute Maximum Ratings

(Ta=25°C)

| Parameter                    | Symbol                                    | Rating             | Unit    |
|------------------------------|-------------------------------------------|--------------------|---------|
| Input                        | Input Signal Voltage                      | V <sub>IN</sub>    | 5-12    |
|                              | Drop-out Voltage                          | V <sub>do</sub>    | 1       |
| Output                       | RMS on-state current                      | I <sub>T</sub>     | 25      |
|                              | Peak one cycle surge current (8.3 ms)     | I <sub>surge</sub> | 250     |
|                              | Repetitive peak-off state Voltage         | V <sub>DRM</sub>   | 600     |
|                              | Operating frequency                       | f                  | 47-70   |
|                              | Critical rate of rise of on-state current | di/dt              | 50      |
|                              | Load supply voltage                       | V <sub>out</sub>   | 250     |
|                              | Isolation Voltage input to output         | V <sub>iso</sub>   | 4000    |
| Operating Temperature        |                                           | T <sub>opr</sub>   | -30-100 |
| Storage Temperature          |                                           | T <sub>stg</sub>   | -30-125 |
| Soldering Temperature 10 Sec |                                           | T <sub>sol</sub>   | 260     |

## Electrical Characteristics

(Ta=25°C)

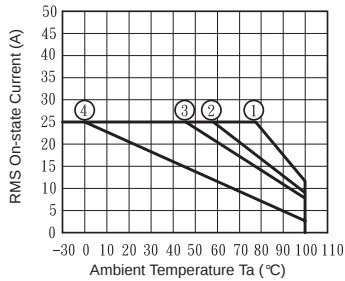
| Parameter                                      | Symbol                                     | Conditions            | MIN              | TYP | MAX | Unit  |
|------------------------------------------------|--------------------------------------------|-----------------------|------------------|-----|-----|-------|
| Input                                          | Pick-up Voltage                            | V <sub>pu</sub>       |                  |     | 4   | VDC   |
|                                                | Input current                              | I <sub>in</sub>       | 5                |     | 25  | mA    |
| Output                                         | On-state Voltage                           | V <sub>T</sub>        |                  |     | 1.5 | Vrms  |
|                                                | Operating Current                          | I <sub>op</sub>       | 50               |     |     | mArms |
|                                                | Leakage Current                            | I <sub>leak</sub>     |                  |     | 7   | mArms |
|                                                | Critical rate of rise of off-state Voltage | dv/dt                 | 50               | 200 |     | V/μS  |
|                                                | Zero-cross Voltage                         |                       |                  | Yes |     |       |
|                                                | Load Voltage Rating                        | V <sub>out</sub>      | 50               |     | 280 | VAC   |
| Minimum trigger current                        |                                            | I <sub>FT</sub>       |                  |     | 25  | mA    |
| Isolation resistance input to output           |                                            | R <sub>iso</sub>      | 10 <sup>10</sup> |     |     | Ω     |
| Turn-on time                                   |                                            | T <sub>on</sub>       |                  |     | 8.3 | mS    |
| Turn-off time                                  |                                            | T <sub>off</sub>      |                  |     | 8.3 | mS    |
| Thermal resistance (between junction and case) |                                            | R <sub>th (j-c)</sub> |                  | 1.3 |     | °C/W  |

Note1 : Output (dv/dt) protection is provided in all models, and they are designed to switch resistive or inductive loads to 0.2 power factor. The dv/dt rating is based on source impedance of 50 ohms.

## Data Curve

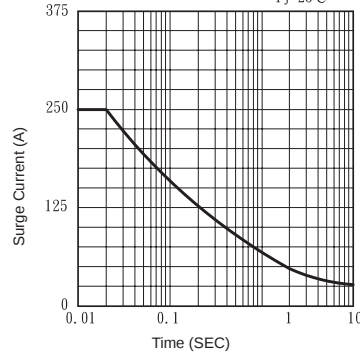
**Fig.1** RMS On-state Current vs. Ambient Temperature

- (1) With infinite heat sink
- (2) With heat sink (150x150x2mm Al plate)
- (3) With heat sink (100x100x2mm Al plate)
- (4) Without heat sink



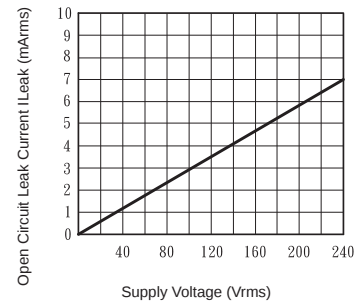
**Fig.2** Surge Current vs. Time

$f=60\text{Hz}$   
 $T_j=25^\circ\text{C}$

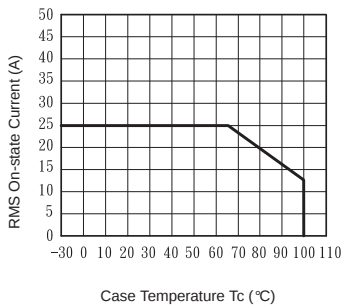


**Fig.3** Open Circuit Leak Current vs. Supply Voltage

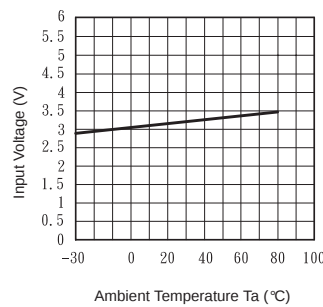
$T_a=25^\circ\text{C}$



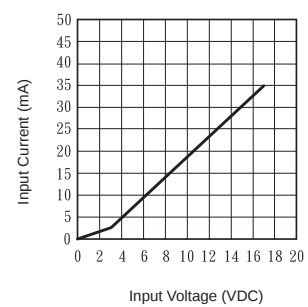
**Fig.4** RMS On-state Current vs. Case Temperature



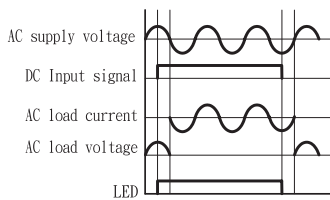
**Fig.5** Input Voltage vs. Ambient Temperature



**Fig.6** Input Current vs. Input voltage



**Fig.7** Action waveform



**Fig.8** WIRING DIAGRAM

