

# S101DH1/S101DH2 S201DH1/S201DH2

## 16-Pin DIP Type SSR for Low Power Control

### ■ Features

1. Compact  
(16-pin dual-in-line package type)
2. High output current  
(RMS ON-state current  $I_T$  : 1.5A<sub>rms</sub>)
3. Built-in zero-cross circuit  
(S101DH2 / S201DH2)
4. Recognised by UL, file No. E94758
5. Approved by CSA, No. LR63705

### ■ Applications

1. Air conditioners
2. Microwave ovens
3. Home appliances

### ■ Model Line-ups

|                                | For 100V lines | For 200V lines |
|--------------------------------|----------------|----------------|
| No built-in zero-cross circuit | <b>S101DH1</b> | <b>S201DH1</b> |
| Built-in zero-cross circuit    | <b>S101DH2</b> | <b>S201DH2</b> |

### ■ Absolute Maximum Ratings

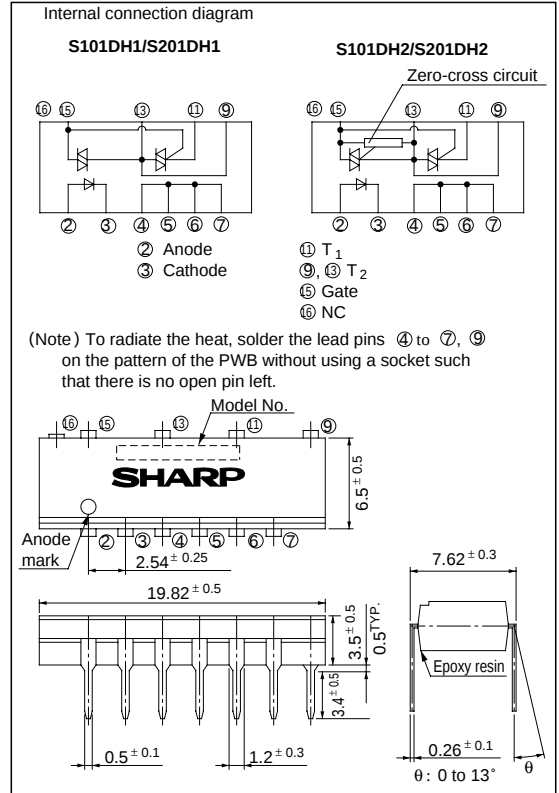
(Ta = 25°C)

| Parameter             | Symbol                            | Rating                 |                     | Unit             |
|-----------------------|-----------------------------------|------------------------|---------------------|------------------|
|                       |                                   | S101DH1/<br>S101DH2    | S201DH1/<br>S201DH2 |                  |
| Input                 | Forward current                   | 50                     |                     | mA               |
|                       | Reverse current                   | 6                      |                     | V                |
| Output                | RMS ON-state current              | 1.5                    |                     | A <sub>rms</sub> |
|                       | Peak one cycle surge current      | 15 (50Hz, sine wave)   |                     | A                |
|                       | Repetitive peak OFF-state voltage | 400                    | 600                 | V                |
| *1 Isolation voltage  |                                   | 4,000                  |                     | V <sub>rms</sub> |
| Operating temperature |                                   | - 25 to + 85           |                     | °C               |
| Storage temperature   |                                   | - 40 to + 125          |                     | °C               |
| Soldering temperature |                                   | 260 ( For 10 seconds ) |                     | °C               |

\*1 AC for 1 minute, 40 to 60% RH, f = 60Hz

### ■ Outline Dimensions

(Unit : mm)



■ Electrical Characteristics

(Ta = 25°C)

| Parameter                    |                                            |                 | Symbol           | Conditions                                                          | MIN.                                   | TYP.             | MAX. | Unit  |
|------------------------------|--------------------------------------------|-----------------|------------------|---------------------------------------------------------------------|----------------------------------------|------------------|------|-------|
| Input                        | Forward voltage                            |                 | V <sub>F</sub>   | I <sub>F</sub> = 20mA                                               | -                                      | 1.2              | 1.4  | V     |
|                              | Reverse current                            |                 | I <sub>R</sub>   | V <sub>R</sub> = 3V                                                 | -                                      | -                | 10   | μ A   |
| Output                       | Repetitive peak OFF-state current          |                 | I <sub>DRM</sub> | V <sub>DRM</sub> = Rated                                            | -                                      | -                | 100  | μ A   |
|                              | ON-state voltage                           |                 | V <sub>T</sub>   | I <sub>T</sub> = 1.5A                                               | -                                      | -                | 1.7  | V     |
|                              | Holding current                            |                 | I <sub>H</sub>   | V <sub>D</sub> = 6V                                                 | -                                      | -                | 25   | mA    |
|                              | Critical rate of rise of OFF-state voltage | S101DH1/S101DH2 | dV/dt            | V <sub>DRM</sub> = 1/ √2 • Rated                                    | 200                                    | -                | -    | V/μ s |
|                              |                                            | S201DH1/S201DH2 |                  |                                                                     | 100                                    | -                | -    |       |
|                              | Zero-cross voltage                         |                 | S101DH2/S201DH2  | V <sub>OX</sub>                                                     | Resistance load, I <sub>F</sub> = 15mA | -                | -    | 35    |
| Transfer characte<br>ristics | Minimum trigger current                    |                 | I <sub>FT</sub>  | V <sub>D</sub> = 6V, R <sub>L</sub> = 100Ω                          | -                                      | -                | 10   | mA    |
|                              | Isolation resistance                       |                 | R <sub>ISO</sub> | DC500V, 40 to 60% RH                                                | 5 x 10 <sup>10</sup>                   | 10 <sup>11</sup> | -    | Ω     |
|                              | Turn-on time                               |                 | t <sub>on</sub>  | V <sub>D</sub> = 6V, R <sub>L</sub> = 100Ω<br>I <sub>F</sub> = 20mA | -                                      | -                | 100  | μ s   |

Fig. 1 RMS ON-state Current vs. Ambient Temperature

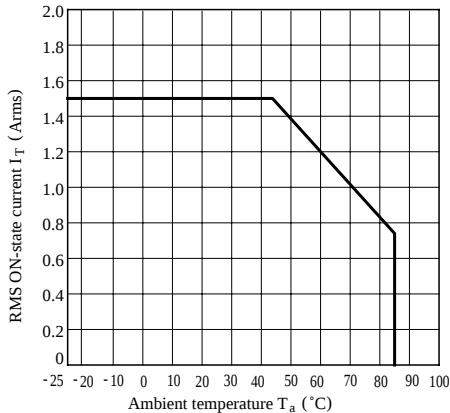


Fig. 2 Forward Current vs. Ambient Temperature

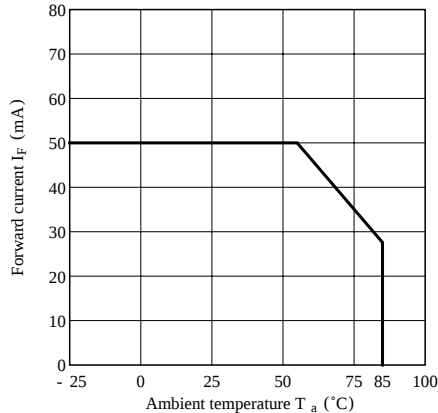


Fig. 3 Forward Current vs. Forward Voltage

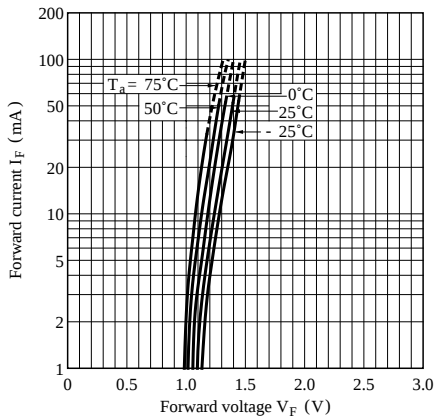
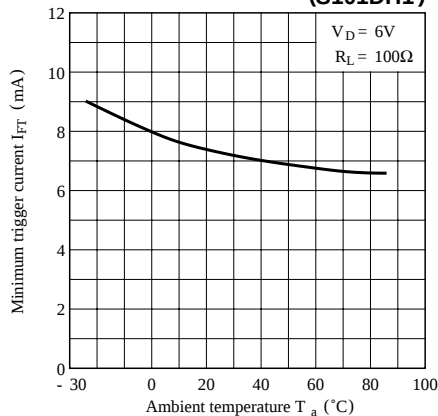
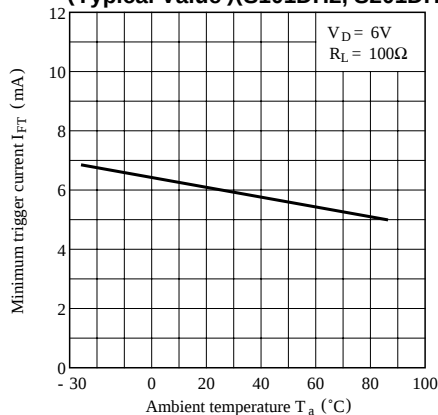


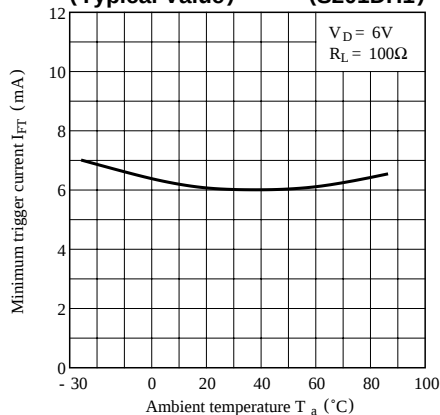
Fig. 4 Minimum Trigger Current vs. Ambient Temperature (Typical Value ) (S101DH1)



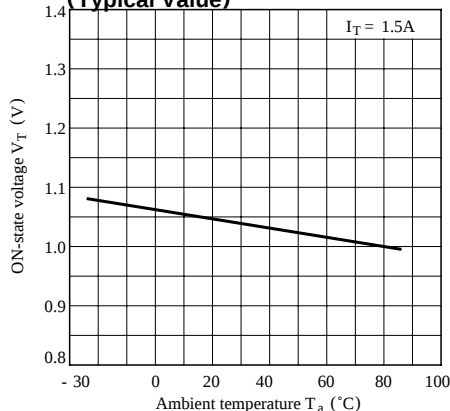
**Fig. 5-a Minimum Trigger Current vs. Ambient Temperature (Typical Value) (S101DH2, S201DH2)**



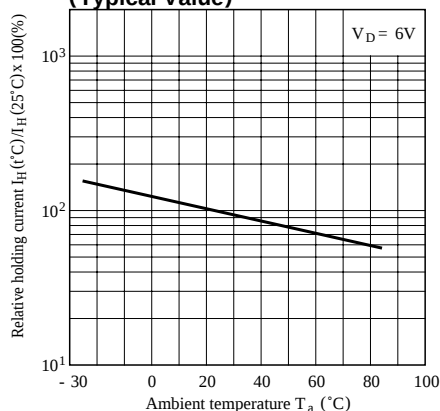
**Fig. 5-b Minimum Trigger Current vs. Ambient Temperature (Typical Value) (S201DH1)**



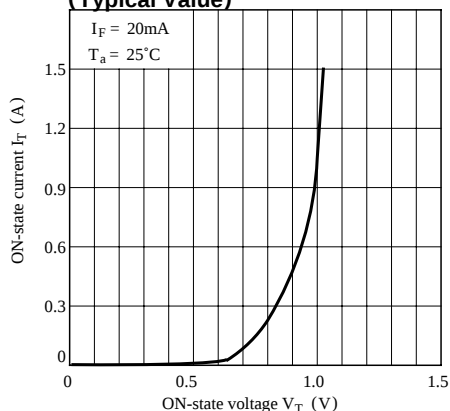
**Fig. 6 ON-state Voltage vs. Ambient Temperature (Typical Value)**



**Fig. 7 Relative Holding Current vs. Ambient Temperature (Typical Value)**



**Fig. 8 ON-state Current vs. ON-State Voltage (Typical Value)**



**Fig. 9 Turn-on Time vs. Forward Current (Typical Value) (S101DH1)**

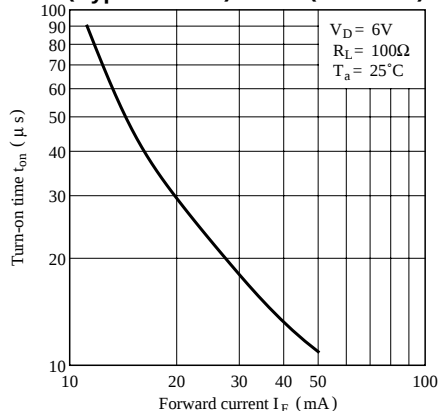


Fig.10 Turn-on Time vs. Forward Current  
(Typical Value)  
(S101DH2, S201DH2)

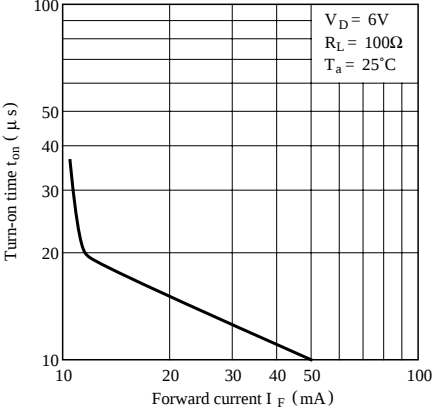
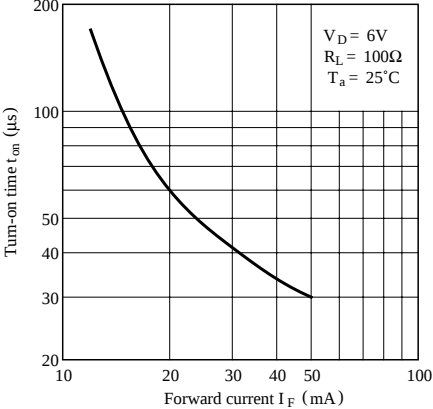


Fig.11 Turn-on Time vs. Forward Current  
(Typical Value)  
(S201DH1)



● Please refer to the chapter “Precautions for Use.”