

# Solid State Relays

## RS5 Series



### Features

- Output – SCR AC Switch
- Input – DC or AC Control
- Ultra-High Surge Current Rating
- Available in:
  - Zero-Cross (RS5-1D5-21)
  - Random Turn-On (RS5-1D5-21R)

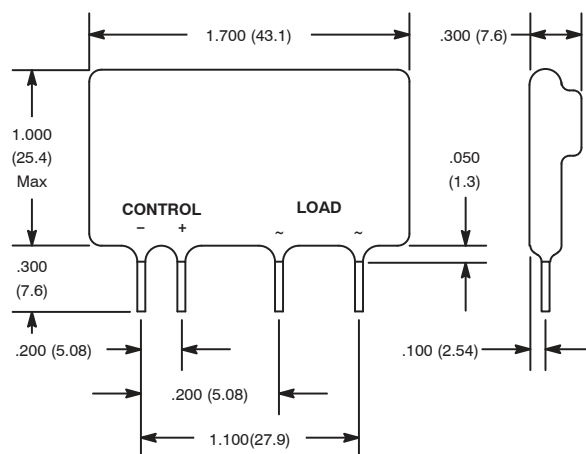


## Descriptions

**ZERO CROSS** – This type of relay has a zero cross detector on the output stage of the relay. This means that the relay will “monitor” the load signal and when this signal gets to the zero volt (amplitude), the relay will trigger after the control voltage has been applied. This will usually take about 8.3msec in a 60Hz signal. These type of relays are mainly used to switch resistive or capacitive loads.

**RANDOM TURN-ON** – This type of relay does not contain a zero cross detector. Therefore, as soon as you connect a control signal, the relay will immediately turn-on at any phase of the load sine wave. The relay will trigger in a maximum time of 20 $\mu$ sec after the control voltage has been applied. These relays are mainly used to switch inductive loads.

## Printed Circuit Board Mountable Solid State Relay, 5 Amp, SPST-NO. D81



## Input Specifications

**Control Voltage Range:** 3–15VDC  
**Must Operate Voltage:** 3.0VDC  
**Must Release Voltage:** 1.0VDC  
**Nominal Input Impedance:** 300 $\Omega$   
**Typ. Input Current (@ 5VDC):** 15mA

## Output Specifications

**Load Voltage Range (@ 47–63Hz):** 12–280V (RMS)  
**Transient Overvoltage:** 600V (Peak)  
**Load Current Range:** 0.06–5A (RMS)  
**Max. Surge Current (16.6ms):** 250A (Peak)  
**Max. Off-State Leakage Current:** 0.1mA (RMS) at rated voltage  
**Min. Off-State dv/dt:** 500V/ $\mu$ s at max. rated voltage  
**Max. On-State Voltage Drop:** 1.4V (Peak) at rated current  
**Max. Turn-On Time:** 1/2 cycle  
**Max. Turn-Off Time:** 1/2 cycle  
**Max. I<sup>2</sup>t for Fusing (8.3ms):** 260A<sup>2</sup>s  
**Power Factor (Min.) with Max. Load:** 0.5

## Electrical Specifications

**Dielectric Strength (50/60Hz Input/Output/Base):** 4000V (RMS)  
**Min. Insulation Resistance (@ 500VDC):** 10<sup>9</sup>  $\Omega$   
**Max. Capacitance (Input/Output):** 10pF

## Environmental Characteristics

**Operating:** –30°C to +80°C  
**Storage:** –30°C to +125°C