



**SSR Series**

**“Hockey Puck”  
Solid State Relay With  
Paired SCR Output**

File E29244

Users should thoroughly review the technical data before selecting a product part number. It is recommended that users also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

**Features**

- Standard “hockey puck” package.
- LED indicator.
- Inverse parallel SCR output.
- 25, 50 & 125A rms versions.
- 240VAC & 480VAC output types.
- Zero voltage and random voltage turn-on versions.
- AC & DC input versions.
- 4000V rms optical isolation.
- Floating terminal design.
- Cover design with anti-rotation barriers

**Engineering Data**

- Form:** 1 Form A (SPST-NO).
- Duty:** Continuous.
- Isolation:** 4000V rms minimum.
- Temperature Range:**
  - Storage:** -30°C to +100°C
  - Operating:** -30°C to +80°C.
- Case Material:** Plastic, UL rated 94V-0.
- Case and Mounting:** Refer to outline dimension.
- Termination:** Refer to outline dimension.
- Approximate Weight:** 3.45 oz. (98g).

**Ordering Information**

|                                     | Typical Part Number  | SSR | -240 | D | 25 | R |
|-------------------------------------|--|-----|------|---|----|---|
| <b>1. Basic Series:</b>             | SSR = “hockey puck” inverse parallel SCR output solid state relay  |     |      |   |    |   |
| <b>2. Line Voltage:</b>             | 240 = 24 - 280VAC      480 = 48 - 660VAC   |     |      |   |    |   |
| <b>3. Input Type &amp; Voltage:</b> | A = 90 - 280VAC<br>D = 3 - 32VDC for 25A / 4 - 32VDC for 50A and 125A  |     |      |   |    |   |
| <b>4. Maximum Switching Rating:</b> | 25 = .1 - 25A rms, mounted to heatsink<br>50 = .1 - 50A rms, mounted to heatsink<br>125 = .1 - 125A rms, mounted to heatsink |     |      |   |    |   |
| <b>5. Options:</b>                  | Blank = Zero voltage turn-on<br>R = Random voltage turn-on (phase controllable)  |     |      |   |    |   |

**Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.**

- |            |             |             |
|------------|-------------|-------------|
| SSR-240A25 | SSR-240D25  | SSR-240D50  |
| SSR-240A50 | SSR-240D25R | SSR-480D125 |

**Input Specifications**

| Parameter                                 | AC Input                        |                | DC Input                                    |   |
|---|---------------------------------|----------------|---|---|
|   | Zero and Random V Turn-on Units |                | Zero and Random V Turn-on Units             |   |
|   | 25A                             | 50A /125A      | 25A   | 50A /125A                                   |
| Control Voltage Range $V_{IN}$            | 90 - 280VAC                     | 90 - 280VAC    | 3 - 32VDC                                   | 4 - 32VDC                                   |
| Must Operate Voltage $V_{IN(OP)}$ (Min.)  | 90VAC                           | 90VAC          | 3VDC  | 4VDC  |
| Must release Voltage $V_{IN(REL)}$ (Min.) | 10VAC                           | 10VAC          | 1VDC  | 1VDC  |
| Input Current                             | 4 - 26mA                        | 6 - 30/2 -14mA | 3 - 25mA(240 model);<br>6 - 30mA(480 model) | 3 - 30mA(240 model);<br>6 - 30mA(480 model) |

**SSR Series** (Continued)

**Output Specifications (@ 25° C, unless otherwise specified)**

| Parameter   | Nom. Line Voltage | Conditions               | Units               | 25A Models                                    | 50A Models | 125A Models |
|---|-------------------|--------------------------|---------------------|---|------------|-------------|
| Load Voltage Range VL                               | 240V Model        |                          | V rms               |   | 24 - 280   |             |
|   | 480V Model        |                          | V rms               |   | 48 - 660   |             |
| Repetitive Blocking Voltage (Min.)                  | 240V Model        |                          | V peak              |   | 600        |             |
|   | 480V Model        |                          | V peak              |   | 1200       |             |
| Load Current Range IL*                              | 240 & 480V Models | Resistive                | A rms               | .1 - 25                                       | .1 - 50    | .1 - 125    |
| Single Cycle Surge Current (Min.)                   | 240 / 480V Models |                          | A peak              | 300 / 400                                     | 520        | 1150        |
| Leakage Current (Off-State) (Max.)                  | 240V Model        | f = 60 Hz. VL = 240V rms | mA rms              |   | 5          |             |
|   | 480V Model        | f = 60 Hz. VL = 480V rms | mA rms              |   | 5          |             |
| On-State Voltage Drop (Max.)                        | 240 & 480V Models | IL = Max.                | Vrms                | 1.6   | 1.8        | 1.8         |
| Static dv/dt (Off-State) (Min.)                     | 240 / 480V Models |                          | V/μs                | 300 / 500                                     |            | 1000        |
| Thermal Resistance, Junction to Case (Rθ-jc) (Max.) | 240 / 480V Models |                          | °C/W                | 2.35 / 1.1                                    | 0.55       | 0.35        |
| Turn-On Time (Max.)                                 | 240 & 480V Models | f = 60 / 50 Hz.          | ms                  | 8.3 for Zero Voltage Turn-On DC input types,  |            |             |
|   |                   |                          |                     | 40 for Zero Voltage Turn-On AC input types,   |            |             |
|   |                   |                          |                     | 0.1 for Random Voltage Turn-On DC input types |            |             |
| Turn-Off Time (Max.)                                | 240 & 480V Models | f = 60 / 50 Hz.          | ms                  | 10 for zero voltage DC input types,           |            |             |
|   |                   |                          |                     | 80 for AC input types, 8.3-Random(DC)         |            |             |
| I <sup>2</sup> T Rating                             | 240 / 480V Models | t = 8.3 ms               | A <sup>2</sup> Sec. | 510 / 800                                     | 1350       | 6600        |
| Load Power Factor Rating                            | 240 & 480V Models | IL = Max.                |                     |   | 0.5 - 1.0  |             |

\* See Derating curve

**Electrical Characteristics (Thermal Derating Curves)**



**Heatsink Recommendations**

- We recommend that solid state relay modules be mounted to a heatsink sufficient to maintain the module's base temperature at less than 85°C under worst case ambient temperature and load conditions.
- The heatsink mounting surface should be a smooth (30-40 micro-inch finish), flat (30-40 micro-inch flatness across mating area), un-painted surface which is clean and free of oxidation.
- An even coating of thermal compound (Dow Corning DC340 or equivalent) should be applied to both the heatsink and module mounting surfaces and spread to a uniform depth of .002" to eliminate all air pockets.
- The module should be mounted to the heatsink using two #8 screws.

**Operating Diagrams**



\* Random Turn-on Units have a Random Turn-on circuit instead of Zero Voltage Circuit

**Outline Dimensions**



\* Overall height dimensions includes with clear cover  
Dimensions in mm

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