



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 |
|-------------------------------------|--|-----|------|---|----|---|
| 1. Basic Series: | SSR = “hockey puck” inverse parallel SCR output solid state relay | | | | | |
| 2. Line Voltage: | 240 = 24 - 280VAC 480 = 48 - 660VAC | | | | | |
| 3. Input Type & Voltage: | A = 90 - 280VAC D = 3 - 32VDC for 25A / 4 - 32VDC for 50A and 125A | | | | | |
| 4. Maximum Switching Rating: | 25 = .1 - 25A rms, mounted to heatsink 50 = .1 - 50A rms, mounted to heatsink 125 = .1 - 125A rms, mounted to heatsink | | | | | |
| 5. Options: | Blank = Zero voltage turn-on 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); 6 - 30mA(480 model) | 3 - 30mA(240 model); 6 - 30mA(480 model) |

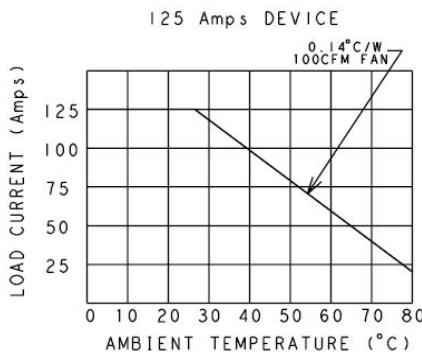
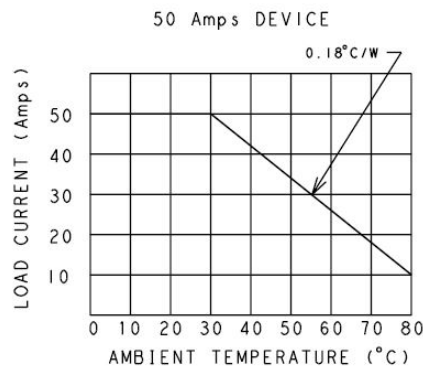
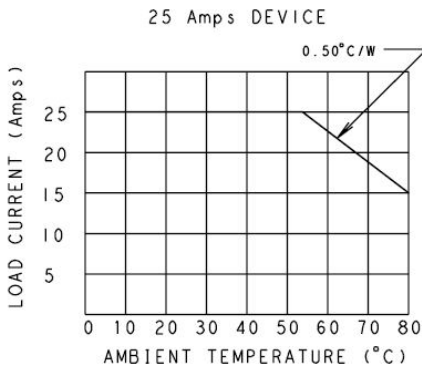
SSR Series (Continued)

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 ² T Rating | 240 / 480V Models | t = 8.3 ms | A ² 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