



## 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 D = 3 - 32VDC for 25A / 4 - 32VDC for 50A and 125A					
<b>4. Maximum Switching Rating:</b>	25 = .1 - 25A rms, mounted to heatsink 50 = .1 - 50A rms, mounted to heatsink 125 = .1 - 125A rms, mounted to heatsink					
<b>5. Options:</b>	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)

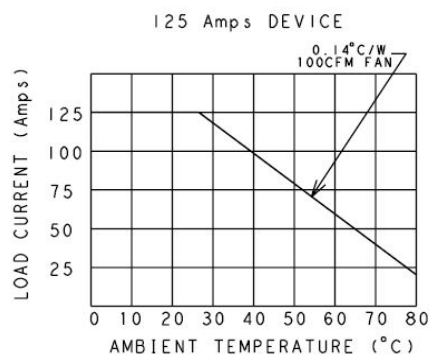
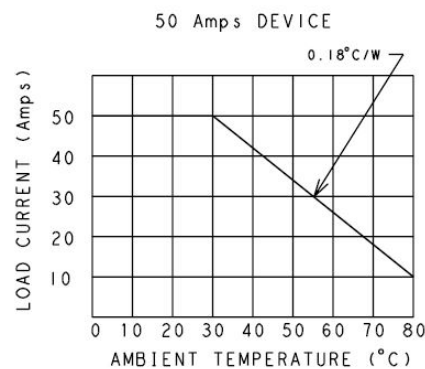
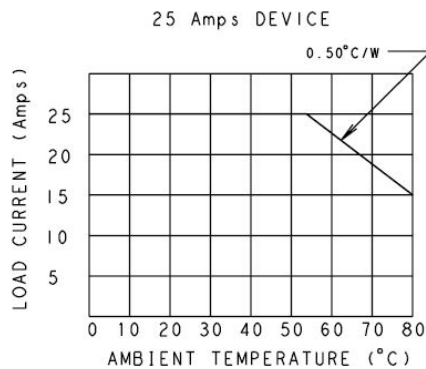
**SSR Series** (Continued)

**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 (RθJC) (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

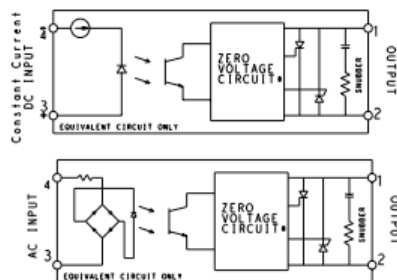
**Electrical Characteristics (Thermal Derating Curves)**



**Heatsink Recommendations**

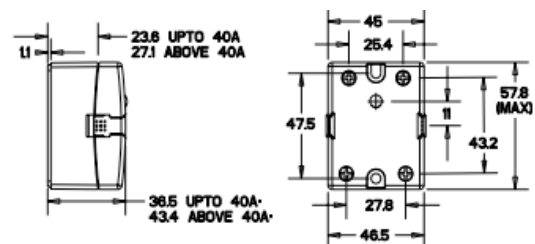
- We recommend that solid state relay modules be mounted to a heatsink sufficient to maintain the module's base temperature at less than 85°C under worst case ambient temperature and load conditions.
- The heatsink mounting surface should be a smooth (30-40 micro-inch finish), flat (30-40 micro-inch 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