





### **SSR Series**

"Hockey Puck" Solid State Relay With Paired SCR Output

callus 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 -  $32\mbox{VDC}$  for 25A / 4 -  $32\mbox{VDC}$  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

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



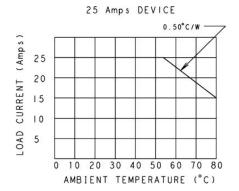
# SSR Series (Continued)

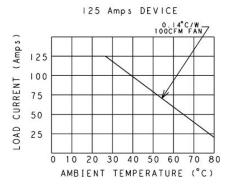
### Output Specifications (@ 25° C, unless otherwise specified)

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 (RoJ-c) (Max.)	240 / 480V Models		°C/W	2.35 / 1.1	0.55	0.35
Turn-On Time (Max.)		f = 60 / 50 Hz.	ms	8.3 for Zero Voltage Turn-On DC input types,		
	240 & 480V Models			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	

<sup>\*</sup> See Derating curve

### **Electrical Characteristics (Thermal Derating Curves)**





# 50 Amps DEVICE 0.18°C/W 40 40 40 10 0 10 20 30 40 50 60 70 80

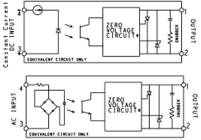
### **Heatsink Recommendations**

 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.

AMBIENT TEMPERATURE (°C)

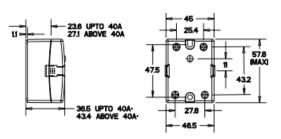
- The heatsink mounting surface should be a smooth (30-40 micro-inch finish), flat (30-40 micro-inch flatness across mating area), un-painted surface which is clean and free of oxidation.
- An even coating of thermal compound (Dow Corning DC340 or equivalent) should be applied to both the heatsink and 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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