

# SSR series

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

File E81606



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.
- Enhanced noise immunity (designed to meet level 3 requirements of European EMC Directive).
- LED indicator.
- Inverse parallel SCR output.
- 25, 50, & 125A rms versions.
- 120/240VAC & 480VAC output types.
- Zero voltage and random voltage turn-on versions.
- AC & DC input versions.
- 4,000V rms optical isolation.
- Floating terminal design.

### Engineering Data

**Form:** 1 Form A (SPST-NO).

**Duty:** Continuous.

**Isolation:** 4,000V rms minimum.

**Capacitance:** 8 pf typical (input to output).

**Temperature Range:**

**Storage:** -40°C to +100°C

**Operating:** -20°C to +80°C.

NOTE: Operation to -40°C is permitted for DC input types at an increased minimum input voltage of 4VDC (240V line voltage models) or 5VDC (480V line voltage models).

**Case Material:** Plastic, UL rated 94V-0.

**Case and Mounting:** Refer to outline dimension.

**Termination:** Refer to outline dimension.

**Approximate Weight:** 3.5 oz. (98g).

### Ordering Information

Sample Part Number ▶ **SSR -240 D 25**

**1. Basic Series:** SSR = “hockey puck” inverse parallel SCR output solid state relay

**2. Line Voltage:** 240 = 24 - 240VAC      480 = 48 - 660VAC

**3. Input Type & Voltage:** A = 90 - 280VAC  
D = 3 - 32VDC (240V line voltage model) / 4 - 32VDC (480V line voltage model)

**4. Maximum Switching Rating/Output:** 25 = .1 - 25A rms, mounted to heatsink  
50 = .1 - 50A rms, mounted to heatsink  
125 = .1 - 125A rms, mounted to heatsink

**5. Options:** Leave 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

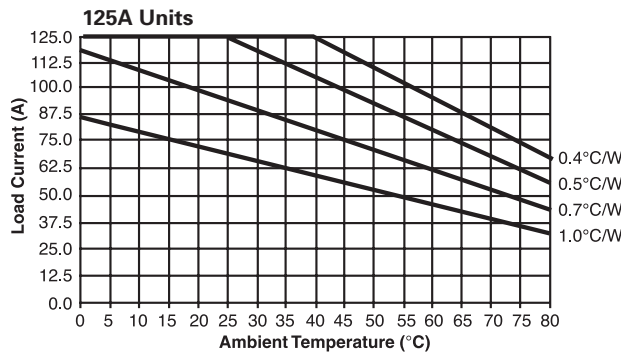
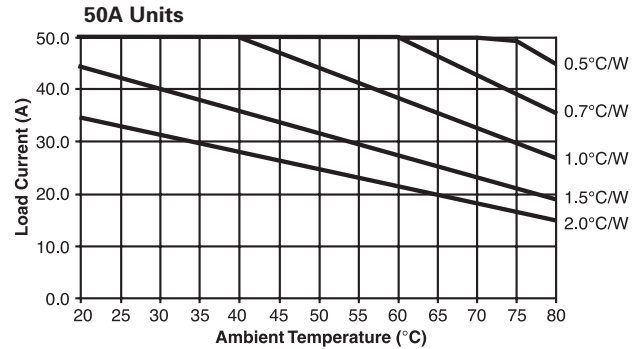
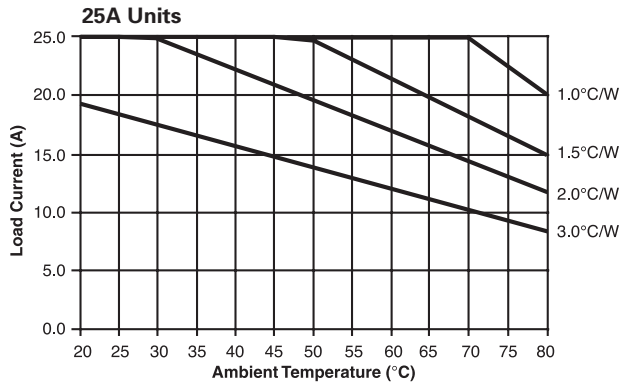
Parameter	AC Input		DC Input	
	Zero V Turn-on Units		Zero and Random V Turn-on Units	
			240VAC Rated Models	480VAC Rated Models
Control Voltage Range $V_{IN}$	90 - 280VAC		3 - 32VDC	4 - 32VDC
Must Operate Voltage $V_{IN(OP)}$ (Min.)	90VAC		3VDC	4VDC
Must Release Voltage $V_{IN(REL)}$ (Min.)	10VAC		1VDC	1VDC
Input Current (Max.)	15mA		15mA	15mA

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

Parameter	Nom. Line Voltage	Conditions	Units	25A Models	50A Models	125A Models
Load Voltage Range $V_L$	120/240V Model		V rms	24 - 280		
	480V Model		V rms	48 - 660		
Repetitive Blocking Voltage (Min.)	120/240 Model		V peak	600		
	480V Model		V peak	1200		
Load Current Range $I_L^*$	120/240 & 480V Models	Resistive	A rms	.05 - 25	.1 - 50	.1 - 125
Single Cycle Surge Current (Min.)	120/240 & 480V Models		A peak	250	750	1,700
Leakage Current (Off-State) (Max.)	120/240V Model	f = 60 Hz. $V_L = 240V$ rms	mA rms	.1		
	480V Model	f = 60 Hz. $V_L = 480V$ rms		.25		
On-State Voltage Drop (Max.)	120/240 & 480V Models	$I_L = \text{Max.}$		1.35		
Static dv/dt (Off-State) (Min.)	120/240 & 480V Models		V/s	500		
Thermal Resistance, Junction to Case ( $R_{\theta J-C}$ ) (Max.)	120/240 & 480V Models		C/W	0.4	0.25	.15
Turn-On Time (Max.)	120/240 & 480V Models	f = 60 Hz.	ms	8.3 for Zero Voltage Turn-On DC input types, 20 for Zero Voltage Turn-On AC input types, 0.02 for Random Voltage Turn-On Models		
Turn-Off Time (Max.)	120/240 & 480V Models	f = 60 Hz.	ms	8.3 for DC input types, 30 for AC input types		
$I^2T$ Rating	120/240 & 480V Models	t = 8.3 ms	A <sup>2</sup> Sec.	937	2,458	12,000
Load Power Factor Rating	120/240 & 480V Models	$I_L = \text{Max.}$		0.5 - 1.0		

\*See Derating Curves

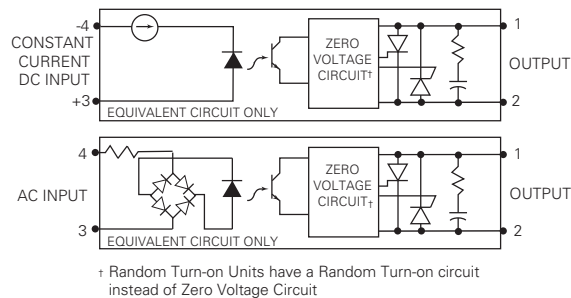
**Electrical Characteristics (Thermal Derating Curves)**



**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 #10 screws.

**Operating Diagrams**



**Outline Dimensions**

