

# SSR series

# "Hockey Puck" Solid State Relay With **Paired SCR Output**

### **Wus** 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.

# **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 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).

# 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

#### **Ordering Information**

	Sample Part Number 🕨	SSR	-240	D	25	
1. Basic Series: SSR = "hockey puck" inverse parallel SCR output solid state re	ау					
<b>2. Line Voltage:</b> 240 = 24 - 240VAC 480 = 48 - 660VAC						
<b>3. Input Type &amp; Voltage</b> : A = 90 - 280VAC D = 3 - 32VDC						
<ul> <li>Maximum Switching Rating/Output: 25 = .1 - 25A rms, mounted to heats 50 = .1 - 50A rms, mounted to heats 125 = .1 - 125A rms, mounted to heat</li> </ul>	nk					
5. Options: Leave Blank = Zero voltage turn-on R = Random voltage turn-on (phase controllable)						1

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

SSR-240A25 SSR-240A50 SSR-240D25R

SSR-240D25

SSR-240D50 SSR-480D125

# **Input Specifications**

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

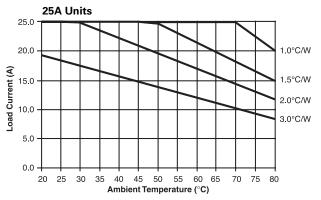
Specifications and availability subject to change.

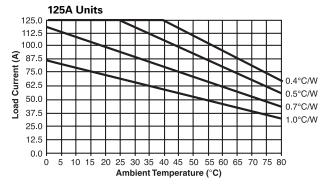
# Catalog 1308242 Issued 3-03 (PDF Rev. 1-05)

Parameter	Nom. Line Voltage	Conditions	Units	25A Models	50A Models	125A Models	
Land Valtage Denge V	120/240V Model		V rms	24 - 280			
Load Voltage Range $V_L$	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	
Laskage Current (Off State) (May)	120/240V Model	$f = 60 \text{ Hz. V}_{\text{L}} = 240 \text{V rms}$	mA rms	.1			
Leakage Current (Off-State) (Max.)	480V Model	$f = 60 \text{ Hz. V}_{L} = 480 \text{V rms}$		.25			
On-State Voltage Drop (Max.)	120/240 & 480V Models	I <sub>L</sub> = Max.		1.35			
Static dv/dt (Off-State) (Min.)	120/240 & 480V Models		V/µs	500			
Thermal Resistance, Junction to Case (R $_{\rm \theta J-C})$ (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 <sup>2</sup> T 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 <sub>L</sub> = Max.		0.5 - 1.0			

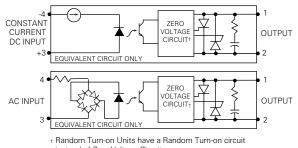
\*See Derating Curves

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

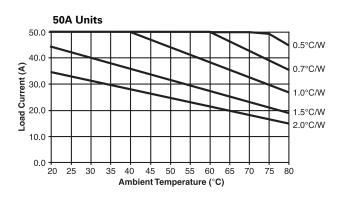




#### **Operating Diagrams**



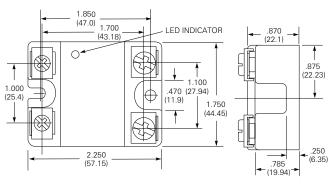
instead of Zero Voltage Circuit



#### **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.

# **Outline Dimensions**



Specifications and availability subject to change.

Dimensions are shown for reference purposes only.

Dimensions are in inches over (millimeters) unless otherwise