

SSR series

"Hockey Puck" Solid State Relay With Paired SCR Output

UL 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

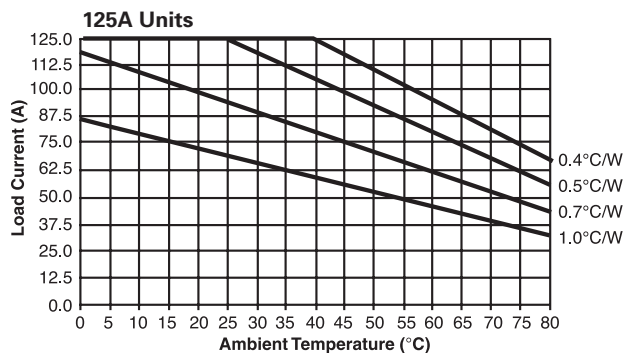
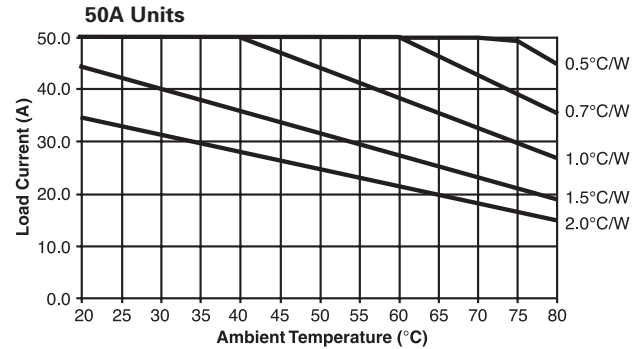
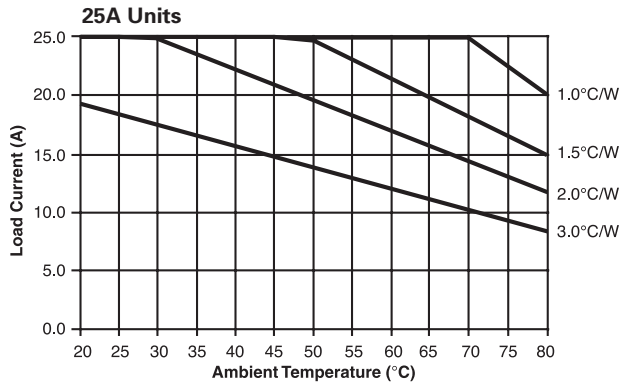
Parameter	AC Input	DC Input	
	Zero V Turn-on Units	Zero and Random V Turn-on Units	
		240VAC Rated Models	480VAC Rated Models
Control Voltage Range V_{IN}	90 - 280VAC	3 - 32VDC	4 - 32VDC
Must Operate Voltage $V_{IN(OP)}$ (Min.)	90VAC	3VDC	4VDC
Must Release Voltage $V_{IN(REL)}$ (Min.)	10VAC	1VDC	1VDC
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	$f = 60 \text{ Hz. } V_L = 240 \text{V rms}$	mA rms	.1		
	480V Model	$f = 60 \text{ Hz. } V_L = 480 \text{V rms}$		.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	$f = 60 \text{ Hz.}$	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	$f = 60 \text{ Hz.}$	ms	8.3 for DC input types, 30 for AC input types		
I^2T Rating	120/240 & 480V Models	$t = 8.3 \text{ ms}$	A ² 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

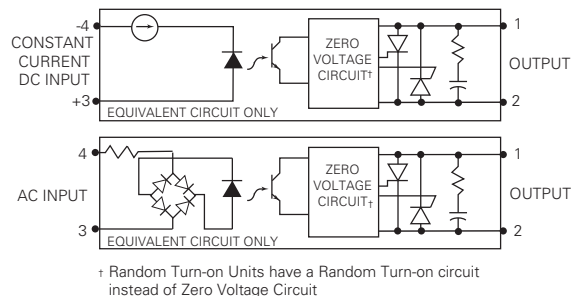
Electrical Characteristics (Thermal Derating Curves)



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

