



# SSRF series

## 25A SIP Solid State Relay With Paired SCR Output, Integral Heatsink

UL 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 confirm the product meets the requirements for a given application.

### Features

- Heatsink is integrated into package.
- 25A rms inverse-parallel connected SCR output.
- Choice of 240 or 480VAC nominal output.
- 3-15 / 4-15VDC input control.
- Zero voltage and random voltage turn-on versions.
- 4,000V rms optical isolation.
- Pinout compatible with OAC or OACM series output modules.

### Engineering Data

- Form:** 1 Form A (SPST-NO).
- Duty:** Continuous.
- Isolation:** 4,000V rms input-to-output-to-ground.
- Insulation Resistance:** 10<sup>9</sup> Ohms, minimum, at 500VDC.
- Capacitance:** 8.0 pf maximum (input to output).
- Temperature Range:**
  - Storage:** -30°C to +125°C
  - Operating:** -30°C to +80°C
- Case Material:** Thermally conductive epoxy encapsulation.
- Case and Mounting:** Refer to outline dimension drawing.
- Termination:** Printed circuit terminals. Refer to outline dimension drawing.
- Approximate Weight:** 0.85 oz. (25.0g).

### Ordering Information

Sample Part Number ▶	SSRF	-240	D	25	R
<b>1. Basic Series:</b> SSRF = SIP Solid State Relay with Integral Heatsink					
<b>2. Line Voltage:</b> 240 = 12 - 280 VAC 480 = 48 - 660 VAC					
<b>3. Input Type &amp; Voltage:</b> D = 3 - 15VDC (240V output types) or 4 - 15VDC (480V output types)					
<b>4. Maximum Switching Rating/Output:</b> 25 = 25.0A rms (with forced air cooling)					
<b>5. Options:</b> Blank = Zero voltage turn-on R = Random voltage turn-on					

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

SSRF-240D25      SSRF-480D25  
SSRF-240D25R      SSRF-480D25R

### Input Specifications

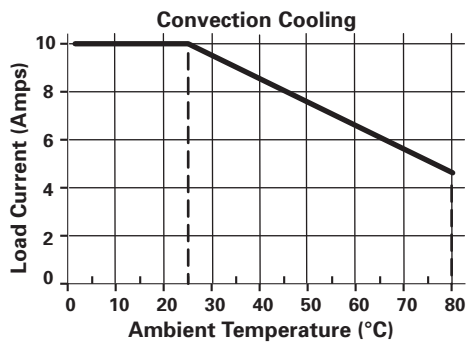
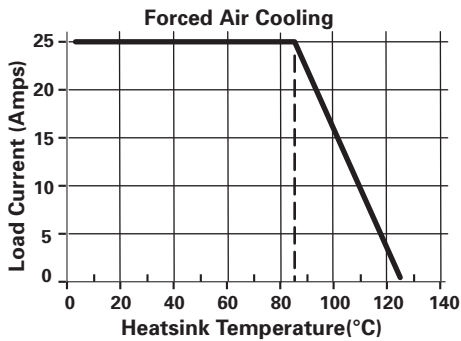
Parameter	Conditions	Units	240V Output, Zero or Random V Turn-on	480V Output Units, Zero or Random V Turn-on
Control Voltage Range $V_{IN}$	@ 25°C	VDC	3-15	4-15
Must Operate Voltage $V_{IN(OP)}$ (Min.)	@ 25°C	VDC	3.0	4.0
Must Release Voltage $V_{IN(REL)}$ (Min.)	@ 25°C	VDC	1.0	1.0
Input Current @ 5 VDC (Typ.)	@ 25°C	mA DC	15	15
Input Impedance (Nom.)	@ 25°C	ohms	300	240

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

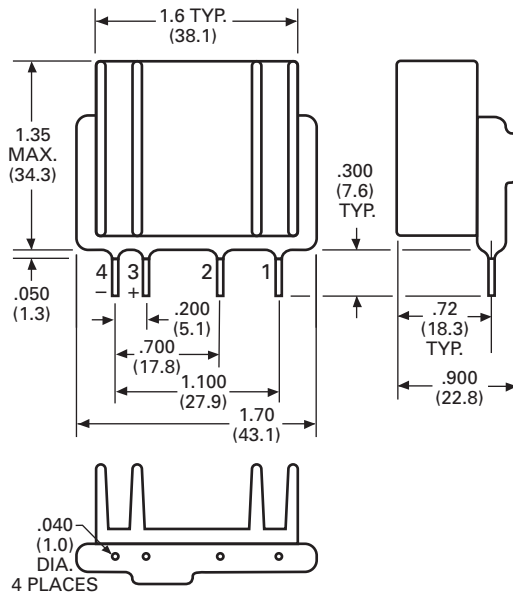
Parameter	Conditions	Units	240V Nom. Output Units	480V Nom. Output Units
Load Voltage Range $V_L$	$f = 47-63$ Hz.	V rms	12-280	48-660
Repetitive Blocking Voltage (Min.)		V peak	$\pm 600$	$\pm 1200$
Load Current Range $I_L^*$	Max. Heatsink Temp. 85°C	A rms	.06-25.0 (Forced Air Cooling) .06-10.0 (Convection Cooling)	.06-25.0 (Forced Air Cooling) .06-10.0 (Convection Cooling)
Single Cycle Surge Current (Min.)		A peak	250	250
Leakage Current (Off-State) (Max.)	$f = 60$ Hz, $V_L = 280$ Vrms	mA rms	0.1	0.1
On-State Voltage Drop (Max.)	$I_L = \text{Max.}$	V peak	1.6	1.6
Static dv/dt (Off-State) (Min.)	$V_L = \text{Max.}$	V/ $\mu$ s	500	500
Turn-On Time (Max.)	$f = 60$ Hz.	ms	8.3 for Zero Voltage Turn-On Models 0.1 for Random Voltage Turn-On Models	8.3 for Zero Voltage Turn-On Models 0.1 for Random Voltage Turn-On Models
Turn-Off Time (Max.)	$f = 60$ Hz.	ms	8.3	8.3
$I^2 t$ Rating	$t = 8.3$ ms	A <sup>2</sup> Sec.	260	260
Load Power Factor Rating (Min.)	$I_L = \text{Max.}$		0.5	0.5

\*See Thermal Derating Curves.

**Electrical Characteristics (Thermal Derating Curves)**



**Outline Dimensions**



**PIN ASSIGNMENTS:**  
 PIN 1: AC LOAD  
 PIN 2: AC LOAD  
 PIN 3: + DC INPUT  
 PIN 4: - DC INPUT

**Disclaimer**

While Tyco Electronics has made every reasonable effort to ensure the accuracy of the information in this document, Tyco Electronics does not guarantee that it is error-free, nor does Tyco Electronics make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current.

Tyco Electronics reserves the right to make any adjustments to the information contained herein at any time without notice. Tyco Electronics expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose.

The dimensions in this catalog are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult Tyco Electronics for the latest dimensions and design specifications.