

**SSR3 Series**

**Three Phase Solid State Relay**



UL File E29244 CE

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**

- LED indicator.
- SCR output for medium to high industrial loads.
- TRIAC output for low industrial loads.
- 10, 16, 25, 40, 50 & 75A rms.
- 48-480Vac output types.
- Zero voltage and random voltage turn-on versions.
- AC & DC input versions.
- 4000V rms optical isolation.
- Safety cover to meet IP 20 protection.
- Epoxy filled.
- Transient voltage protection by MOVs externally.
- Panel mountable.

**Engineering Data**

**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:** 16.3-18.4 oz. (461-521g)  
(Depending on the specific model)

**Ordering Information**

**Typical Part Number**

SSR3 S -480 D 75 R

**1. Basic Series: SSR3 =** Three phase solid state relay

**2. Switching:** S = SCR Output  
T = TRIAC Output

**4. Line Voltage:** 480 = 48 - 480

**5. Input Type & Voltage:** A = 90 - 280VAC  
D = 4 - 32VDC

**6. Maximum Current Rating:**  
10=. 1-10A rms, mounted to heatsink  
16=. 1-16A rms, mounted to heatsink  
25=. 1-25A rms, mounted to heatsink  
40=. 1-40A rms, mounted to heatsink  
50=. 1-50A rms, mounted to heatsink  
75=. 1-75A rms, mounted to heatsink

**7. Turn-On Options:** 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.**

- SSR3T-480A10 SSR3T-480D25
- SSR3T-480A16 SSR3T-480D40
- SSR3T-480A25 SSR3T-480D10R
- SSR3S-480A50 SSR3S-480D50R

**Input Specifications**

Characteristics	Units	AC Input	DC Input
		Zero & Random V Turn-on	Zero & Random V Turn-on
Control Voltage Range	V <sub>IN</sub>	90 - 280	4 - 32
Must Operate Voltage	V <sub>IN(OP)</sub>	90	4
Must release Voltage	V <sub>IN(REL)</sub>	10	1
Input Current	mA	9-25	30-80
Max Input Current@Rated Voltage	mA	25 @ 280Vac	80 @ 32Vdc

**SSR3 Series** (Continued)

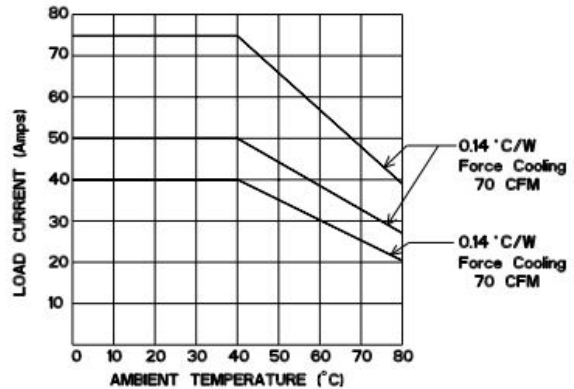
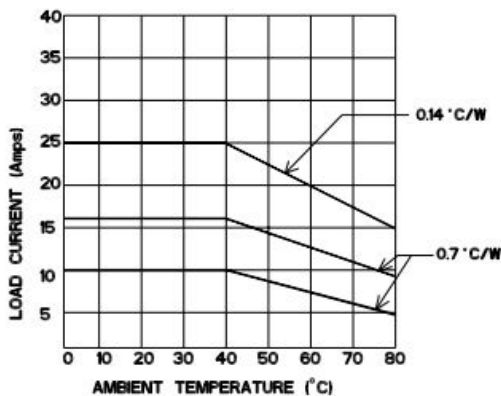
**Output Specifications (@ 25°C, unless otherwise specified)**

Characteristics	Conditions	Units	10A Models	16A Models	25A Models
Load Voltage Range, $V_L$		$V_{RMS}$	48-480		
Load Current Range, $I_L$		A	10	16	25
On-State Voltage Drop	@ Rated Current	$V_{RMS}$	1.6		
Single cycle surge current	For Triac / SCR	A	100	160	250
Peak Off state Voltage		$V_{ac}$	800		
Off- State Leakage Current	(F-60 Hz)	mA	5		
Fusing Current, $I^2T$ Rating	For Triac / SCR	$A^2s$	55	144	340
Static dv/dt (Off-State)	For Triac / SCR	$V/\mu s$	400		500
Zero Turn-On Voltage		$V_{pk}$	25		
Thermal Resistance, (Junction to Case, $R_{J-C}$ )	For Triac / SCR	$^{\circ}C/W$	2.4	2.1	0.6 (AC i/p & Random), 0.9 (DC i/p)
Turn-On Time (F= 60/50 Hz)	AC i/p	ms	40		
	DC i/p		Zero - 10/8.3, Random - 0.1		
Turn-Off Time (F= 60/50 Hz)	AC i/p		80		
	DC i/p		Zero - 10/8.3, Random - 10		

Characteristics	Conditions	Units	40A Models	50A Models	75A Models
Load Voltage Range, $V_L$		$V_{RMS}$	48-480		
Load Current Range, $I_L^*$		A	40	50	75
On-State Voltage Drop	@ Rated Current	$V_{RMS}$	1.6		
Single cycle surge current	For Triac / SCR	A	400 / 580	520	750
Peak Off state Voltage		$V_{ac}$	800		
Off- State Leakage Current	(F-60 Hz)	mA	5		
Fusing Current, $I^2T$ Rating	For Triac / SCR	$A^2s$	880 / 1680	1350	2812
Static dv/dt (Off-State)	For Triac / SCR	$V/\mu s$	500 / 1000	1000	
Zero Turn-On Voltage		$V_{pk}$	25		
Thermal Resistance, (Junction to Case, $R_{J-C}$ )	For Triac / SCR	$^{\circ}C/W$	0.6 / 0.9	0.6 / 0.5	0.6
Turn-On Time (F= 60/50 Hz)	AC i/p	ms	40		
	DC i/p		Zero - 10/8.3, Random - 0.1		
Turn-Off Time (F= 60/50 Hz)	AC i/p		80		
	DC i/p		Zero - 10/8.3, Random -10		

\* See Derating curve

**Electrical Characteristics (Thermal Derating Curves)**



**SSR3 Series** (Continued)

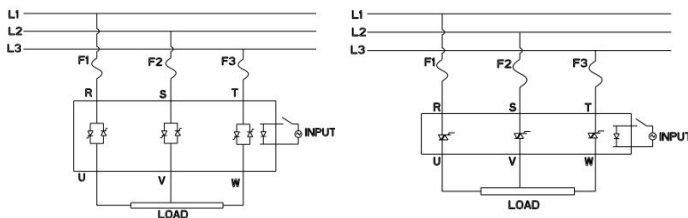
**Heatsink Recommendations**

- 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 #8 screws.

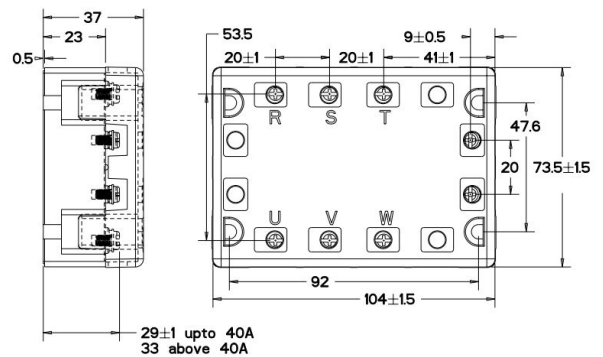
**Thermal Pad**

Product Code : SSR-ACC-TH-003  
Part Number : 2323803-2

**Operating Diagrams**



**Outline Dimensions**



\* Overall height dimensions includes with clear cover  
Dimensions in mm

Product Code	Part Number
SSR3T-480A10	2345984-1
SSR3T-480A16	2345984-2
SSR3T-480A25	2345984-5
SSR3T-480A40	2345984-6
SSR3S-480A40	2345984-7
SSR3S-480A50	2345984-8
SSR3S-480A75	2345984-9
SSR3T-480D10	1-2345984-1
SSR3T-480D16	1-2345984-2
SSR3T-480D25	1-2345984-3
SSR3T-480D40	1-2345984-4
SSR3S-480D40	1-2345984-5
SSR3S-480D50	1-2345984-6
SSR3S-480D75	1-2345984-7
SSR3T-480D10R	1-2345984-9
SSR3T-480D25R	2-2345984-0
SSR3S-480D40R	2-2345984-1
SSR3S-480D50R	2-2345984-2

UNSPECIFIED DIMENSION TOLERANCE			
0.6	>6.30	>30.120	>120.320
±0.15	±0.25	±0.65	±1.00

**Screw details**

Type	Screw size	Ampere	Head type
Input	M3.5/0.6	As per data sheet	Pan head Phillips
Output	M4/0.7	up to 40A	
	M6/1	50A & above	

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