

SSR1 Solid State Relay with Heat Sink

- Zero switching AC Solid State Relay
- Direct copper bonding (DCB) technology
- LED indication
- Clip-on IP 20 protection cover
- Self-lifting terminals
- Housing free of moulding mass
- Operational ratings up to 75 AACrms and 600 VAC
- Opto-insulation: > 4000 VACrms



Order Table

MODEL

SSR1 Single Phase Solid State Relay with Heat Sink

The SSR1 series are industrial single-phase relays mounted on heat sinks for switching high current resistive loads. Chromalox SSR1 series offers the following standard features: 40°C Ambient Rating, Zero-voltage turn-on, LED status indicator, IP20 touch protection clip-on cover, two input ranges, operational rating up to 600 Vac, self-lifting terminals, dv/dt protection, DIN rail mount, CE mark, UL Recognized and CSA approvals.

CODE	Current @ 40°C (104°F) Ambient, 42 - 600Vac
25	25 Amp
35	35 Amp
50	50 Amp
75	75 Amp

CODE	Input Control Voltage
1	4.5 - 32Vdc
2	24 - 265Vac or 24 - 190Vdc

SSR1	Current	Input Control Voltage	Typical Model Number
25	25	1	SSR1-25-1

SSR1 25 1 Typical Model Number

Specifications

Output Specifications

Switching Mode.....	Zero Switching
Rated Operational Current	
25 AACrms.....	SSR1-25
35 AACrms.....	SSR1-35
50 AACrms.....	SSR1-50
75 AACrms.....	SSR1-75

Operational Voltage Range	42 to 660 VACrms
Non-Rep. Peak Voltage.....	≥ 1400 V _p
Zero Voltage Turn-On.....	≤ 15 V
Operational Frequency Range.....	45 to 65 Hz
Power Factor.....	> 0.5 @ 600 VACrms

Approvals

UL Recognized, CSA
 CE-Marking Yes **
 ** Heatsink must be connected to ground

Specifications (cont'd.)

Input Specifications

Control Voltage Range	
Code 1	4.5 - 32 VDC
Code 2	24 - 265 VAC 24 - 190 VDC
Pick-Up Voltage	
Code 1	4.0 VDC
Code 2	4.0 VAC
Drop Out Voltage	
Code 1	2.0 VDC
Code 2	2.0 VAC

Input current	
Code 1: 5 VDC	9 mA
24 VDC	12 mA
Code 2: 5 VAC	10 mA
24 VAC	18 mA

Response Time Pick-Up Max. ≤ 1 cycle

Response Time Drop-Out Max. ≤ 2.5 cycle

Insulation

Rated insulation voltage ≥ 4000 VACrms
Input to output

Rated insulation voltage ≥ 4000 VACrms
Output to case

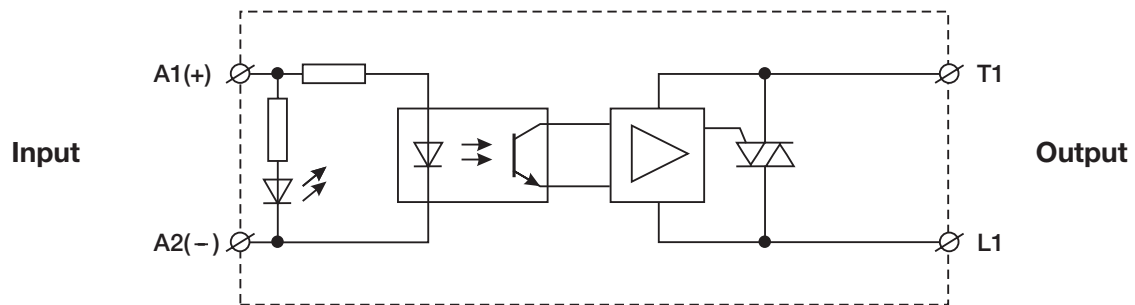
Thermal Specifications (See Rating Curves)

	SSR1-25	SSR1-35	SSR1-50 / SSR1-75
Operating Temperature Range	-20° to 70°C	-20° to 70°C	-20° to 70°C
Storage Temperature Range	-40° to 100°C	-40° to 100°C	-40° to 100°C
Junction Temperature	≤ 125°C	≤ 125°C	≤ 125°C

Output Specifications

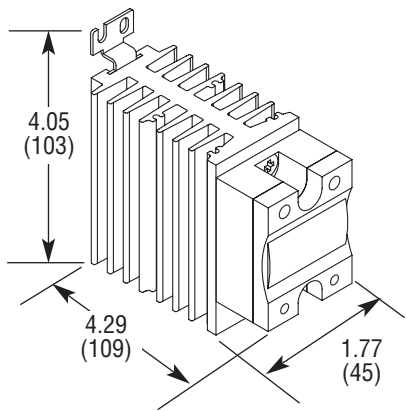
	SSR1-25	SSR1-35	SSR1-50 / SSR1-75
Rated operational current @40°C	25 Arms	50 Arms	75 Arms
Min. Operational Current	150 mA	150 mA	150 mA
Rep. Overload Current t=1 s	< 55 AACrms	< 125 AACrms	< 150 AACrms
Non-rep. Surge Current t=10 ms	250 A _p	600 A _p	1000 A _p
Off-State Leakage Current @ Rated Voltage and Frequency	< 3 mArms	< 3 mArms	< 3 mArms
I ² t for Fusing t=1-10 ms	< 310 A ² s	< 1800 A ² s	< 6600 A ² s
Critical di/dt	≥ 100 A/μs	≥ 100 A/μs	≥ 100 A/μs
On-State Voltage Drop @ Rated Current	1.6 Vrms	1.6 Vrms	1.6 Vrms
Critical dV/dt Commutating	500 V/μs	500 V/μs	500 V/μs
Critical dV/dt Off-State Min.	500 V/μs	500 V/μs	500 V/μs
Zero Crossing Detection	Yes	Yes	Yes

Wiring Diagram

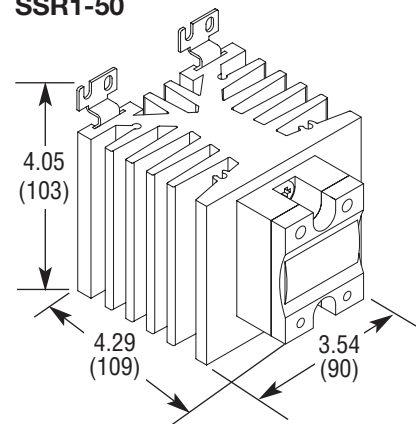


Dimensions

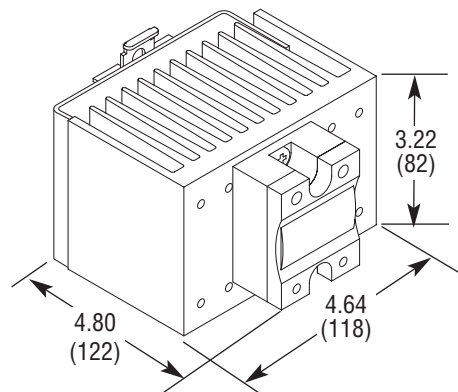
SSR1-25



**SSR1-35
SSR1-50**



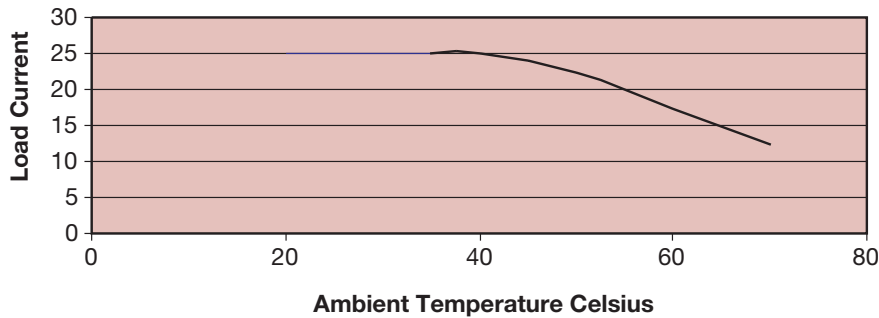
SSR1-70



Note: Dimensions in mm (in.)

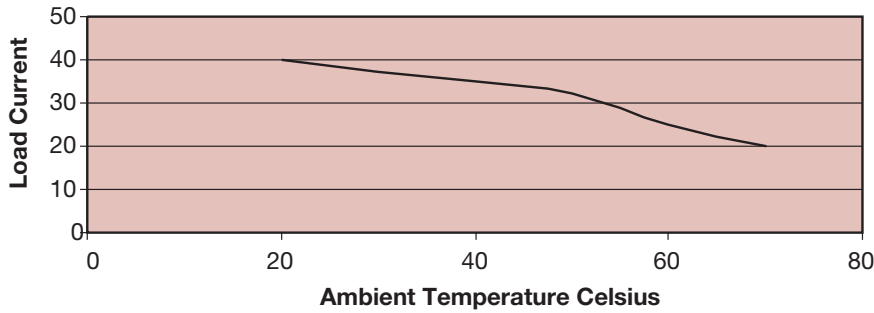
Specification Data Sheet

Heatsink (Load Current Versus Ambient Temperature)



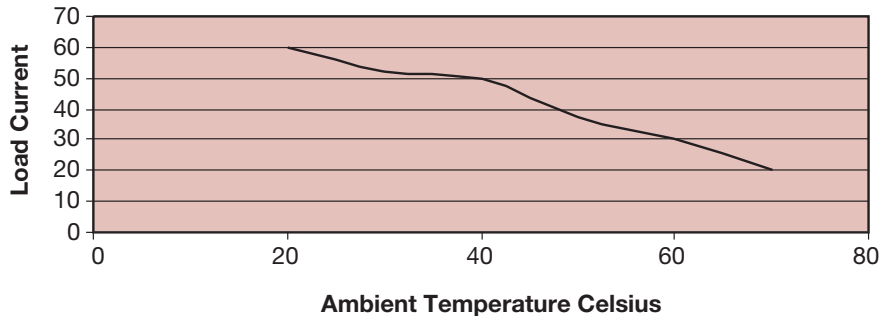
Ambient Temp. °C	Amps
20	25
30	25
40	25
50	22.5
60	17.5
70	12.5

Derating Curve SSR1-25



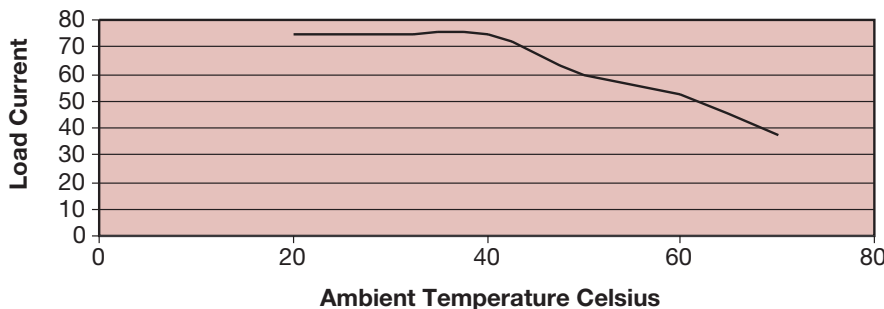
Ambient Temp. °C	Amps
20	40
30	37.5
40	35
50	32.5
60	25
70	20

Derating Curve SSR1-35



Ambient Temp. °C	Amps
20	60
30	52.5
40	50
50	37.5
60	30
70	20

Derating Curve SSR1-50



Ambient Temp. °C	Amps
20	75
30	75
40	75
50	60
60	52.5
70	37.5

Derating Curve SSR1-75