



### SSR 60 to 150 Amps AC SSR

SOLID STATE RELAYS is series SSR are power line relays allowing 10 to 150 Amps. switching power, with Voltage ratings from 28 to 480 Volts A.C.

SSR series is Dual SSR Power Hybrid technology provides highly efficient thermal management for greatly increased cyclic life.

- High power and high current.
- High performance/low cost circuit design.
- Logic compatible current regulated input.
- 4000 Vrms optical isolation.
- Both "Zero Voltage" & phase controllable "Random Switching" versions.
- High voltage (1200 Vpk) versions for 480 Vrms service.
- LED-indication for control input.
- Control voltage range: 4~16 Vdc or 3 to 32 Vdc
- Industry standard "SCR Modules" package.

### Ordering Key

S S R 200 48 Z D1  
1 2 3 4 5

- 1: Semiconductor type;
- 2: Rated working current (A);
- 3: Rated working voltage (V) (24:240 V,44:440V,48:480V);
- 4: Control method Z - Zero, R - Random;
- 5: Control voltage D: 3-8V, D1 - 4-16VDC, D3 - 3-32VDC, A2 - 90-250VAC.

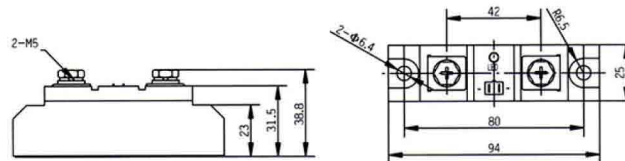
### Type Selection

- Mounting type DH: AC Single phase, SCR Output.
- Rated operational current 60: 60Amp, 80: 80Amp, 100:100Amp, 120: 120Amp, 150: 150Amp.
- Rated operational voltage 28: 280VAC, 48: 480VAC.
- Switched mode Z: Zero Voltage, R: Random Switching.
- Input Control voltage D1: DC 4~16V, D3: DC 3~32V.
- Case type B: bar, Industry standard "SCles" package.

### Selection guide

| Voltage                                   | Control voltage | Rated operational current |              |               |               |               |
|---|-----------------|---------------------------|--------------|---------------|---------------|---------------|
|   |                 | 60 Amp                    | 80 Amp       | 100 Amp       | 120 Amp       | 150 Amp       |
| 280 V <sub>AC</sub><br>"Zero Voltage"     | 4to16 Vdc       | SSR-6028ZD1B              | SSR-8028ZD1B | SSR-10028ZD1B | SSR-12028ZD1B | SSR-15028ZD1B |
|   | 3to32 Vdc       | SSR-6028ZD3B              | SSR-8028ZD3B | SSR-10028ZD3B | SSR-12028ZD3B | SSR-15028ZD3B |
| 280 V <sub>AC</sub><br>"Random Switching" | 4to16 Vdc       | SSR-6028RD1B              | SSR-8028RD1B | SSR-10028RD1B | SSR-12028RD1B | SSR-15028RD1B |
|   | 3to32 Vdc       | SSR-6028RD3B              | SSR-8028RD3B | SSR-10028RD3B | SSR-12028RD3B | SSR-15028RD3B |
| 480 V <sub>AC</sub><br>"Zero Voltage"     | 4to16 Vdc       | SSR-6048ZD1B              | SSR-8048ZD1B | SSR-10048ZD1B | SSR-12048ZD1B | SSR-15048ZD1B |
|   | 3to32 Vdc       | SSR-6048ZD3B              | SSR-8048ZD3B | SSR-10048ZD3B | SSR-12048ZD3B | SSR-15048ZD3B |
| 480 V <sub>AC</sub><br>"Random Switching" | 4to16 Vdc       | SSR-6048RD1B              | SSR-8048RD1B | SSR-10048RD1B | SSR-12048RD1B | SSR-15048RD1B |
|   | 3to32 Vdc       | SSR-6048RD3B              | SSR-8048RD3B | SSR-10048RD3B | SSR-12048RD3B | SSR-15048RD3B |

### Dimension



### Specifications

| Input Parameter ①      | D1                  | D3                  |
|------------------------|---------------------|---------------------|
| Control Voltage Range  | 4 to 16Vdc          | 3 to 32Vdc          |
| Input Current (Max.)   | 13/42 mAdc @=5V/12V | 13/16 mAdc @=5V/24V |
| Must Turn On Voltage   | 4Vdc                | 3Vdc                |
| Must Turn Off Voltage  | 1Vdc                | 1Vdc                |
| Reverse Voltage (Max.) | 32Vdc               | 32Vdc               |
| Display LED            | Yes                 | Yes                 |

| Output Parameter ②               | Units  | Specification Limits |            |
|----------------------------------|--------|----------------------|------------|
| Model No. <b>SSR</b>             |        | 60A                  | 80A        |
| Load Current Range               | Arms   | 0.05 to 60           | 0.05 to 80 |
| Surge Current, 20 mSec (Max.)    | Arms   | 600                  | 1000       |
| Load Voltage Range (280V)        | Vrms   | 24 to 280            |            |
| SCR interdiction voltage (280V)  | Vpk    | ≥800                 |            |
| Load Voltage Range (480V)        | Vrms   | 44 to 480            |            |
| SCR interdiction voltage (480V)  | Vpk    | ≥1200                |            |
| Frequency Range                  | Hz     | 47 to 63             |            |
| Min. Off-state dv/dt             | V/μsec | 500                  |            |
| Off State Leakage Current (Max.) | mArms  | ≤8                   |            |
| On-State Voltage Drop (Max.)     | Vrms   | 1.6                  |            |
| Thermal Resistance, (Rthjc)      | °C/w   | 0.65                 | 0.5        |
| Turn On Time (Max.) "Z"          | Cycle  | 1/2                  |            |
| Turn On Time (Max.) "R"          | mSec   | 1                    |            |
| Turn Off Time (Max.)             | Cycle  | 1/2                  |            |

| Model No. <b>SSR</b>             |        | 100A        | 120A        | 150A        |
|----------------------------------|--------|-------------|-------------|-------------|
| Load Current Range               | Arms   | 0.05 to 100 | 0.05 to 120 | 0.05 to 150 |
| Surge Current, 20 mSec (Max.)    | Arms   | 1200        | 1500        | 2000        |
| Load Voltage Range (280V)        | Vrms   | 24 to 280   |             |             |
| SCR interdiction voltage (280V)  | Vpk    | ≥800        |             |             |
| Load Voltage Range (480V)        | Vrms   | 44 to 480   |             |             |
| SCR interdiction voltage(480V)   | Vpk    | ≥1200       |             |             |
| Frequency Range                  | Hz     | 47 to 63    |             |             |
| Min. Off-state dv/dt             | V/μsec | 500         |             |             |
| Off State Leakage Current (Max.) | mArms  | ≤8          |             |             |
| On-State Voltage Drop (Max.)     | Vrms   | 1.6         |             |             |
| Thermal Resistance, (Rthjc)      | °C/w   | 0.3         | 0.3         | 0.3         |
| Turn On Time (Max.) "Z"          | Cycle  | 1/2         |             |             |
| Turn On Time (Max.) "R"          | mSec   | 1           |             |             |
| Turn Off Time (Max.)             | Cycle  | 1/2         |             |             |

### General Specifications

|   |       |                      |
|---|-------|----------------------|
| Dielectric (Input/Output)                     | Arms  | 2500                 |
| Dielectric (Input-Output/Base)                | Arms  | 2500                 |
| Capacitance(Max.)                             | pf    | 10                   |
| Ambient Operating Temperature Range           |       | -30°C to +80°C       |
| Ambient Storage Temperature Range             |       | -30°C to +80°C       |
| Weight: ( typical)                            |       | 125 g.               |
| Base plate: Aluminum or Copper, nickel-plated |       |                      |
| Case Color: Black                             |       |                      |
| Mounting Dimensions:                          | LxWxH | 94x25x38mm, with LED |

### SSR 200 to 400 Amps AC SSR

Series SSR Solid State Relays are AC relays, Triac Output. The triac version of the zero switching relay is an inexpensive solution for resistive loads. The zero switching relay switches on when the AC sine voltage just crosses zero, and switches off when the current crosses zero.

- Rated operational current 200A to 400Amps.
- Rated operational voltage 280V or 480 V
- Input Voltage Range 4 to 16 Vdc, 3 to 32 Vdc or 90 to 250 Vac.
- 4000 Vrms Optical Isolation.(input/output)
- Both "Zero Voltage" & phase controllable "Random Switching" versions.
- LED-indication for control input.

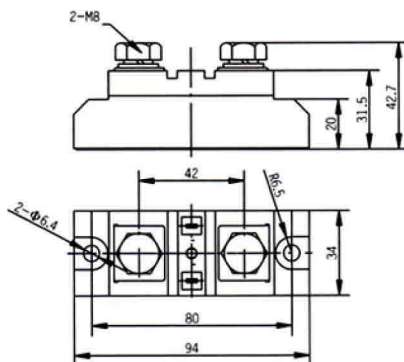
#### Type Selection

- Mounting type D:AC Single phase Solid State Relay
- Rated operational current 200:200Amp,250:250Amp,300:300Amp,350:350Amp,400:400Amp
- Rated operational voltage 28:280VAC,48:480VAC.
- Switched mode Z:Zero Voltage,R:Random Switching.
- Input Control voltage D1:DC 4to16V,D3:DC 3to32V,A2:AC 90to250V.
- Case type Blank:Case A,1:Case B,with LED.

#### Selection guide

| Voltage                                   | Control voltage | Rated operational current |              |              |              |              |
|---|-----------------|---------------------------|--------------|--------------|--------------|--------------|
|   |                 | 200 Amp                   | 250 Amp      | 300 Amp      | 350 Amp      | 400 Amp      |
| 280 V <sub>AC</sub><br>"Zero Voltage"     | 4 to 16 Vdc     | SSR-20028ZD1              | SSR-25028ZD1 | SSR-30028ZD1 | SSR-35028ZD1 | SSR-40028ZD1 |
|   | 3 to 32 Vdc     | SSR-20028ZD3              | SSR-25028ZD3 | SSR-30028ZD3 | SSR-35028ZD3 | SSR-40028ZD3 |
|   | 90 to 250Vac    | SSR-20028ZA2              | SSR-25028ZA2 | SSR-30028ZA2 | SSR-35028ZA2 | SSR-40028ZA2 |
| 280 V <sub>AC</sub><br>"Random Switching" | 4 to 16 Vdc     | SSR-20028ZD1              | SSR-25028ZD1 | SSR-30028ZD1 | SSR-35028ZD1 | SSR-40028ZD1 |
|   | 3 to 32 Vdc     | SSR-20028ZD3              | SSR-25028ZD3 | SSR-30028ZD3 | SSR-35028ZD3 | SSR-40028ZD3 |
|   | 90 to 250Vac    | SSR-20028ZA2              | SSR-25028ZA2 | SSR-30028ZA2 | SSR-35028ZA2 | SSR-40028ZA2 |
| 480 V <sub>AC</sub><br>"Zero Voltage"     | 4 to 16 Vdc     | SSR-20048ZD1              | SSR-25048ZD1 | SSR-30048ZD1 | SSR-35048ZD1 | SSR-40048ZD1 |
|   | 3 to 32 Vdc     | SSR-20048ZD3              | SSR-25048ZD3 | SSR-30048ZD3 | SSR-35048ZD3 | SSR-40048ZD3 |
|   | 90 to 250Vac    | SSR-20048ZA2              | SSR-25048ZA2 | SSR-30048ZA2 | SSR-35048ZA2 | SSR-40048ZA2 |
| 480 V <sub>AC</sub><br>"Random Switching" | 4 to 16 Vdc     | SSR-20048RD1              | SSR-25048RD1 | SSR-30048RD1 | SSR-35048RD1 | SSR-40048RD1 |
|   | 3 to 32 Vdc     | SSR-20048RD3              | SSR-25048RD3 | SSR-30048RD3 | SSR-35048RD3 | SSR-40048RD3 |
|   | 90 to 250Vac    | SSR-20048RA2              | SSR-25048RA2 | SSR-30048RA2 | SSR-35048RA2 | SSR-40048RA2 |

#### Dimension



#### Ordering Key

S S R 200 48 Z D1  
1 2 3 4 5

- 1: Semiconductor type;
- 2: Rated working current (A);
- 3: Rated working voltage (V) (24:240 V,44:440V,48:480V);
- 4: Control method Z - Zero, R - Random;
- 5: Control voltage D: 3-8V, D1 - 4-16VDC, D3 - 3-32VDC, A2 - 90-250VAC.

### Specifications

| Parameter-list                | Units          | Specification Limits |             |
|-------------------------------|----------------|----------------------|-------------|
| Input Parameter ① D1          | D1             | D3                   | A2          |
| Control Voltage Range         | 4 to 16Vdc     | 3 to 32 Vdc          | 90 to250Vac |
| Input Current (Max.) @=5V/12V | 13/42 @=5x/12v | 13/16 @=5V/24V       |             |
| Must Turn On Voltage          | 4 Vdc          | 3 Vdc                | 90Vac       |
| Must Turn Off Voltage         | 1 Vdc          | 1 Vdc                | 1Vav        |
| Reverse Voltage (Max.)        | 32 Vdc         | 32 Vdc               |             |
| Display LED                   | yes            | yes                  | yes         |

| Output Parameter ②               | Units  | Specification Limits |             |             |             |             |
|----------------------------------|--------|----------------------|-------------|-------------|-------------|-------------|
| Model No. <b>SSR</b>             |        | 200                  | 250         | 300         | 350         | 400         |
| Load Current Range               | Arms   | 0.05 to 200          | 0.05 to 250 | 0.05 to 300 | 0.05 to 350 | 0.05 to 400 |
| Surge Current, 20 mSec (Max.)    | Arms   | 2500                 | 3400        | 4500        | 5000        | 6000        |
| Load Voltage Range (280V)        | Vrms   | 24 to 280            |             |             |             |             |
| SCR interdiction voltage (280V)  | Vpk    | ≥800                 |             |             |             |             |
| Load Voltage Range (480V)        | Vrms   | 44 to 480            |             |             |             |             |
| SCR interdiction voltage (480V)  | Vpk    | ≥1200                |             |             |             |             |
| Frequency Range                  | Hz     | 47 to 63             |             |             |             |             |
| Off State dv/dt (Min)            | V/μsec | 500                  |             |             |             |             |
| Off State Leakage Current (Max.) | mArms  | ≤10                  |             |             |             |             |
| On State Voltage Drop (Max.)     | Vrms   | 1.8                  |             |             |             |             |
| Thermal Resistance, (Rthjc)      | °C/w   | 0.22                 | 0.15        | 0.14        | 0.13        | 0.12        |
| Turn On Time (Max.) "Z"          | Cycle  | 1/2                  |             |             |             |             |
| Turn On Time (Max.) "R"          | mSec   | 1                    |             |             |             |             |
| Turn Off Time (Max.)             | Cycle  | 1/2                  |             |             |             |             |
| Turn Off Time (Max.) "A2"        | mSec   | 40                   |             |             |             |             |

### Coupling Specifications

|                                |      |      |
|--------------------------------|------|------|
| Dielectric (Input/Output)      | Arms | 2500 |
| Dielectric (Input-Output/Base) | Arms | 2500 |
| Capacitance                    | pf   | 10   |

### General Specifications

|   |                      |                    |
|---|----------------------|--------------------|
| Ambient temperature range:                    | operating or Storage | -30°C to +80°C     |
| Weight: ( typicro)                            | g                    | 280                |
| Base plate: Aluminum or Copper, nickel-plated |                      |                    |
| Case Color: Black                             |                      |                    |
| Mounting Dimensions                           | LxWxH                | Case: 94x34x42.7mm |

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