

# Solid State Relays

## Datasheet 9225006


**Features**

|                     |   |
|---------------------|---|
| <b>Switching</b>    | Zero cross  |
| <b>Output</b>       | Back-to-back SCR with internal snubber  |
| <b>Input</b>        | DC with constant current control  |
| <b>Applications</b> | Resistive and inductive loads with $\cos\phi > 0,85$ (Z-Type)<br>inductive load with $\cos\phi > 0,65$ (R-Type) |

**Technical data**
**Input circuit**

|                       |                  |
|-----------------------|------------------|
| Control voltage range | 3...32 VDC       |
| Control current max.  | 10 mA            |
| Turn-off voltage min. | 1 VDC            |
| Input resistance      | Constant current |

**Output circuit**

|                             |                       |
|-----------------------------|-----------------------|
| Load voltage range          | 24...280 VAC          |
| Peak-off-state voltage      | 600 V <sub>drm</sub>  |
| Off-state leakage current   | 12 mA eff.            |
| Load current range          | 0,4...75 A            |
| Surge current 1 half wave   | 910 A <sub>peak</sub> |
| I <sup>2</sup> t for fusing | 4150 A <sup>2</sup> s |
| On-state voltage            | 1,6 V <sub>peak</sub> |
| Off-state (static) dv/dt    | 1000 V/μs             |
| Snubber                     | 47 Ω / 100nF          |

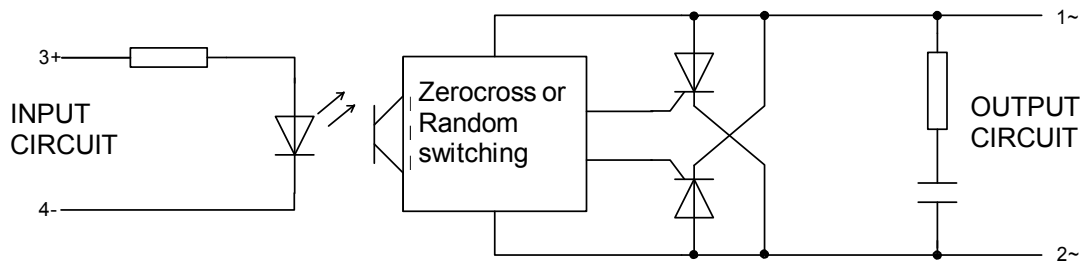
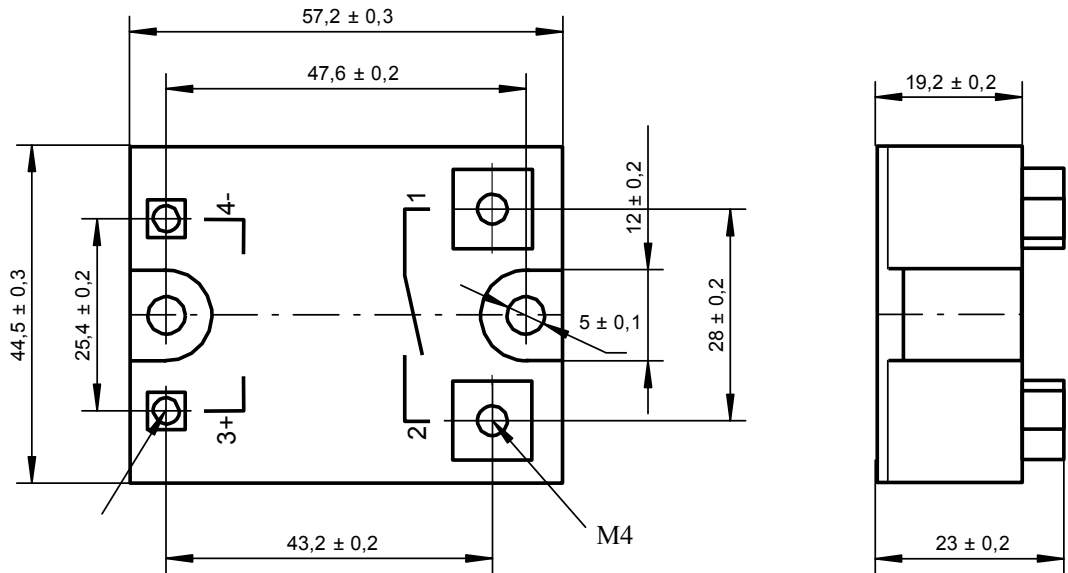
**General data**

|   |               |
|---|---------------|
| Turn-on time max.                         | 11 ms         |
| Turn-off time max.                        | 11 ms         |
| Line frequency range                      | 47...63 Hz    |
| Isolation volt. between input/output      | 4.000 V       |
| Isolation volt. between input-output/base | 2.500 V       |
| Isolation resistance                      | 50 MΩ         |
| Operation temperature                     | -20...+80°C   |
| Recommended varistor                      | SIOV-S20 K230 |
| Approvals                                 | cULus, VDE    |

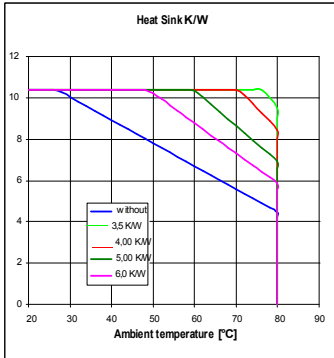
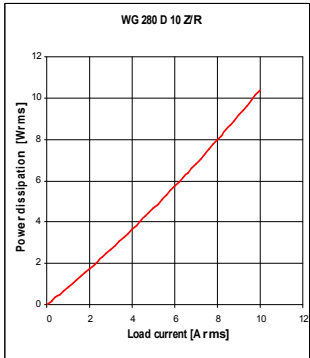
**Housing specification**

|                             |   |
|-----------------------------|---|
| Weight                      | Approx. 80 gr unpotted , 100 gr potted (optional)                 |
| Housing material            | Glass filled polyester  |
| Potting compound (optional) | UL recognized Epoxy   |
| Base plate                  | 10 ... 45 A : Aluminium<br>50 ... 125A : Aluminium, nickel plated |
| Terminals                   | Input : M4-screws<br>Output : M3,5-screws                         |

**Dimensions in mm**



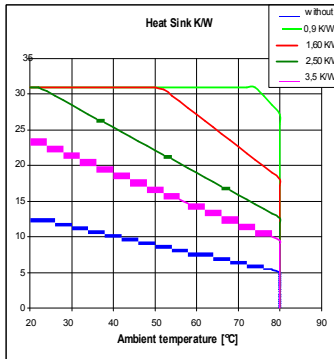
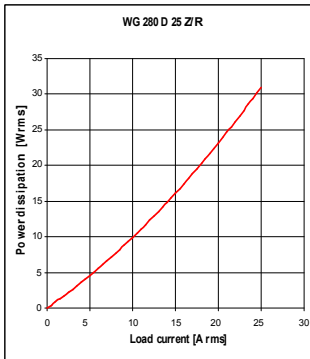
Derating diagrams



Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 10 A  | 10 A  |       |
| 9225236   | 10 A  | 10 A  |       |
| 9225239   | 10 A  | 10 A  | 10 A  |
| 9225233   | 10 A  | 10 A  | 10 A  |
| 9225242   | 10 A  |       |       |

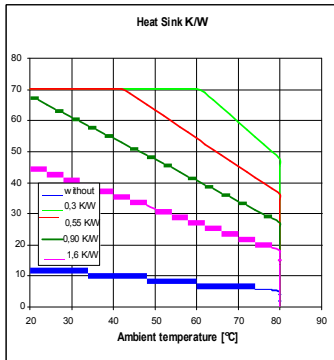
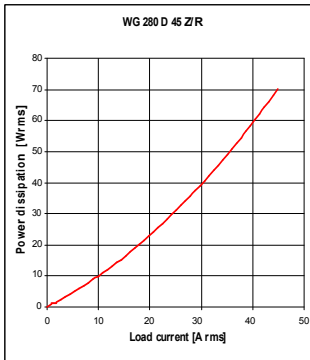
Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink



Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 18 A  | 12 A  |       |
| 9225236   | 23 A  | 17 A  |       |
| 9225239   | 25 A  | 25 A  | 23 A  |
| 9225233   | 25 A  | 25 A  | 25 A  |
| 9225242   | 25 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink

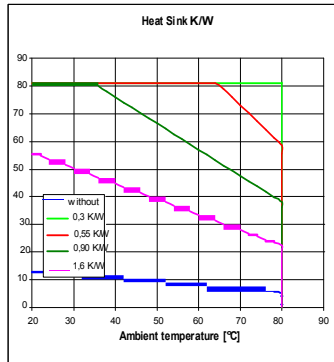
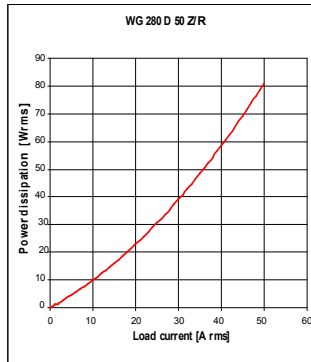


Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 18 A  | 12 A  |       |
| 9225236   | 23 A  | 17 A  |       |
| 9225239   | 40 A  | 29 A  | 23 A  |
| 9225233   | 45 A  | 45 A  | 41 A  |
| 9225242   | 34 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink

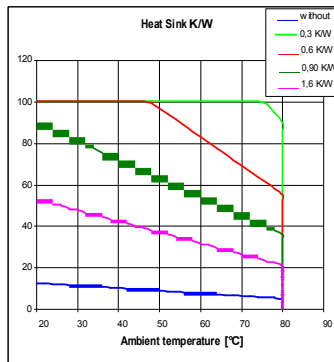
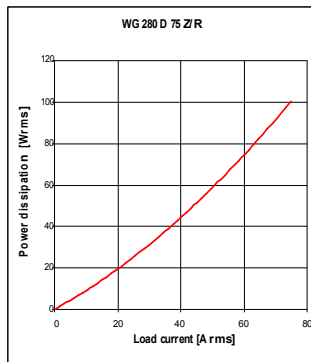
Derating diagrams



Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 20 A  | 13 A  |       |
| 9225236   | 26 A  | 18 A  |       |
| 9225239   | 50 A  | 34 A  | 26 A  |
| 9225233   | 50 A  | 50 A  | 50 A  |
| 9225242   | 41 A  |       |       |

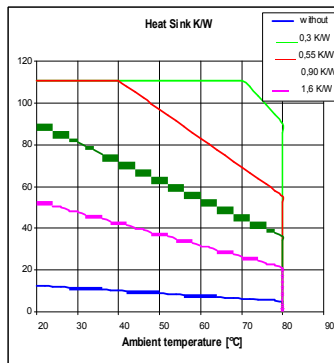
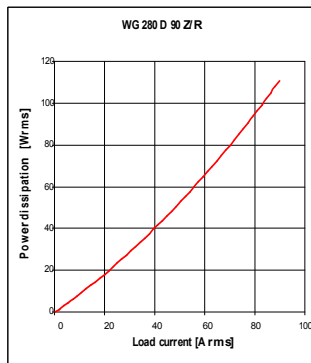
Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink



Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 23 A  | 14 A  |       |
| 9225236   | 31 A  | 21 A  |       |
| 9225239   | 66 A  | 42 A  | 31 A  |
| 9225233   | 75 A  | 75 A  | 68 A  |
| 9225242   | 51 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink

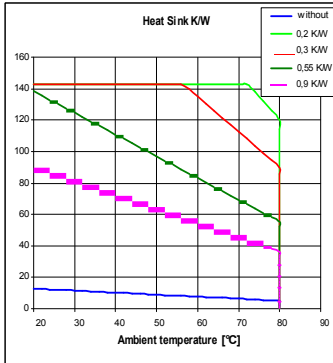
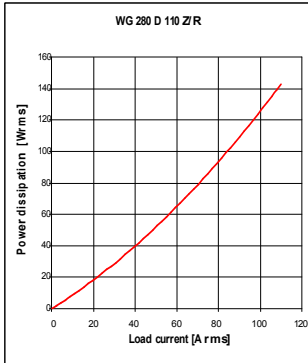


Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 25 A  | 15 A  |       |
| 9225236   | 33 A  | 22 A  |       |
| 9225239   | 73 A  | 45 A  | 33 A  |
| 9225233   | 90 A  | 90 A  | 76 A  |
| 9225242   | 56 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink

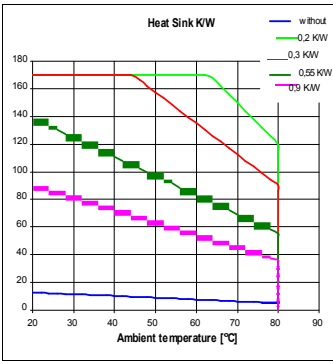
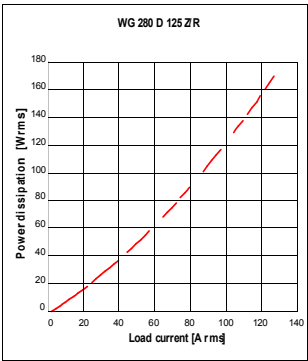
Derating diagrams



Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 25 A  | 15 A  |       |
| 9225236   | 33 A  | 22 A  |       |
| 9225239   | 74 A  | 46 A  | 33 A  |
| 9225233   | 110 A | 103 A | 77 A  |
| 9225242   | 56 A  |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink



Number of SSR per Heatsink/  
Load current per SSR

| Heat sink | 1 SSR | 2 SSR | 3 SSR |
|-----------|-------|-------|-------|
| 9225227   | 25 A  | 15 A  |       |
| 9225236   | 33 A  | 22 A  |       |
| 9225239   | 74 A  | 46 A  | 33 A  |
| 9225233   | 125 A | 103 A | 77 A  |
| 9225242   | 57A   |       |       |

Values for 40°C enclosure-temperature and mounted with conducting paste between the SSR and the heat sink