

Influence of environment temperature on power and pinch-off current rating



Current - voltage characteristics with and without resistor (example)



CRD for higher currents

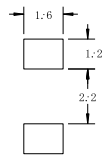
CRDs can be used in row to amplify permissible current.



CRD for higher voltages

Using CRDs in row with Zener diodes allows the use of stable currents at higher voltage values.

Recommended mounting pad dimensions (S series only)



Dynamic characteristics (voltage - current)



How to compensate current reduction due to heat up of the CRD

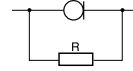
For currents of 1 mA or more resistors can be used together with CRDs to compensate for current decreases and fluctuations. The following values are typical for compensation resistors.

Rated power: 500 mW

| | | | | | | | | | | | | | |
|------------------------------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|
| Product number | S-102 | S-152 | S-202 | S-272 | S-352 | S-452 | S-562 | S-822 | S-103 | S-123 | S-153 | S-183 | S-223 |
| Recommended resistance value | 1.1 MΩ | 430 kΩ | 300 kΩ | 200 kΩ | 130 kΩ | 91 kΩ | 62 kΩ | 27 kΩ | 18 kΩ | 15 kΩ | 12 kΩ | 9 kΩ | 5.6 kΩ |

Rated power: 300 mW

| | | | | | | | | | | | | |
|------------------------------|-------|--------|--------|--------|-------|-------|-------|-------|-------|-------|--------|--------|
| Product number | E-102 | E-152 | E-202 | E-272 | E-352 | E-452 | E-562 | E-822 | E-103 | E-123 | E-153 | E-183 |
| Recommended resistance value | 1 MΩ | 390 kΩ | 240 kΩ | 120 kΩ | 82 kΩ | 56 kΩ | 39 kΩ | 20 kΩ | 15 kΩ | 11 kΩ | 9.1 kΩ | 7.5 kΩ |





Reliability data

| Item | Test conditions | Criteria |
|---|--|------------------------|
| Resistance to soldering heat | 10 s at 260 °C (wave soldering) | $\Delta I_p \pm 5\%$ |
| Solderability | 3 s at 245 °C Flux material: Rosin 25%, propanol 75% | More than 90% soldered |
| Dry heat | 1000 hours at 150 °C | $\Delta I_p \pm 5\%$ |
| Damp heat (CRD S) | 1000 hours at 85 °C and 85% humidity | |
| Damp heat (CRD E) | 1000 hours at 70 °C and 90% humidity | |
| Temperature cycle / thermal shock (CRD S) | 10 cycles as below: 1. - 55 °C for 15 minutes 2. Room temperature for 15 minutes 3. 150 °C for 15 minutes 4. Room temperature for 15 minutes | |
| Temperature cycle / thermal shock (CRD E) | 5 cycles as below: 1. - 25 °C for 30 minutes 2. Room temperature for 15 minutes 3. 150 °C for 30 minutes 4. Room temperature for 15 minutes | |

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