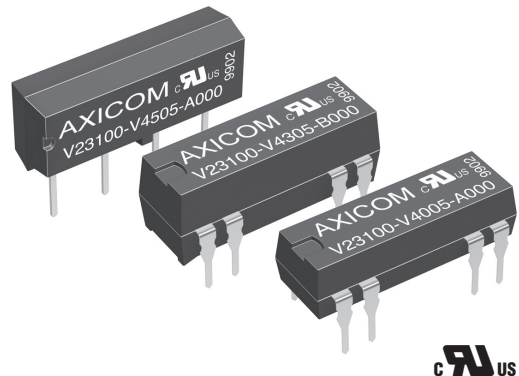


**Reed Relay V23100 -V4**

- Direct coil control with TTL-signals possible
- Highly reliable switching
- High switching rates
- Ultrasonic cleanable
- High vibration and shock resistance

Typical applications

In-circuit tester, measuring and control systems, telecom equipment, alarm and security equipment.



**Approvals**

UL File No. 111441

Technical data of approved types on request.

| Contact Data                     | form A                              | form C                 |
|----------------------------------|-------------------------------------|------------------------|
| Contact arrangement              | 1 form A (1 NO),<br>2 form A (2 NO) | 1 form C (CO)          |
| Max. switching voltage           |                                     |                        |
| at rated coil voltage 5VDC       | 200VDC/VAC <sub>peak</sub>          | 175VDC                 |
| at rated coil voltage 12to 24VDC | 200VDC/VAC <sub>peak</sub>          | 175VDC <sub>peak</sub> |
| Limiting continuous current      | 1A                                  | 1.2A                   |
| Switching power                  | 10W, 10VA                           | 3W, 3VA                |
| Contact material                 | Ruthenium                           |                        |
| Contact style                    | reed contact                        |                        |
| Initial contact resistance       | <150mΩ                              |                        |
| Operate / release time max.      | 0.75/0.15ms                         | 1.1/1.6ms              |
| Electrical endurance             |                                     |                        |
| at 12V/10mA                      | 50x10 <sup>6</sup> operations       |                        |
| at 24V/400mA                     | 5x10 <sup>6</sup> operations        |                        |

**Coil Data**

|                       |            |
|-----------------------|------------|
| Magnetic system       | neutral    |
| Coil voltage range    | 5 to 24VDC |
| Max. coil temperature | 105°C      |
| Thermal resistance    | < 75K/W    |

**Coil versions, monostable**

| Coil code   | Rated voltage VDC | Operate voltage VDC <sub>min.</sub> | Release voltage VDC <sub>min.</sub> | Coil resistance Ω±10% | Rated coil power mW |
|---|-------------------|-------------------------------------|-------------------------------------|-----------------------|---------------------|
| <b>1 form A (1 NO) contact</b>                    |                   |                                     |                                     |                       |                     |
| 05  | 5VDC              | 3.5                                 | 0.75                                | 500                   | 50                  |
| 12  | 12VDC             | 8.4                                 | 1.80                                | 1000                  | 144                 |
| 15  | 15VDC             | 10.5                                | 2.25                                | 2000                  | 112                 |
| 24  | 24VDC             | 16.8                                | 3.60                                | 2000                  | 288                 |
| <b>2 form A (2 NO) or 1 form C (1 CO) contact</b> |                   |                                     |                                     |                       |                     |
| 05  | 5VDC              | 3.5                                 | 0.75                                | 200                   | 125                 |
| 12  | 12VDC             | 8.4                                 | 1.80                                | 500                   | 288                 |
| 15  | 15VDC             | 10.5                                | 2.25                                | 2000                  | 112                 |
| 24  | 24VDC             | 16.8                                | 3.60                                | 2000                  | 288                 |

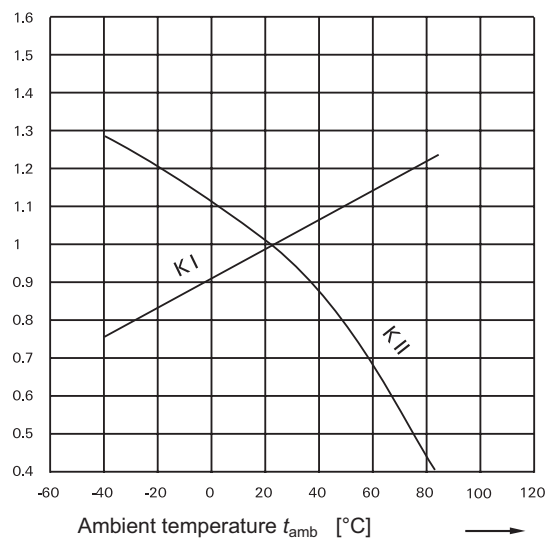
All figures are given for coil without pre-energization, at ambient temperature +23°C.

**Coil Data (continued)**

**Coil versions, limiting operate voltage**

| Coil code | DIP flat, SIL, 1 form A | DIP flat, 1 form A with diode | DIP high 1 form C | DIP high 2 form A std, diode | DIP high 1 form C diode+ shield | Mini SIL 1 form A |
|-----------|-------------------------|-------------------------------|-------------------|------------------------------|---------------------------------|-------------------|
|           | VDC                     | VDC                           | VDC               | VDC                          | VDC                             | VDC               |
| 05        | 22.0                    | 14.0                          | 13.0              | 14.0                         | 14.5                            | 13.6              |
| 12        | 33.0                    | 25.0                          | 22.0              | 25.0                         | 23.5                            | 21.6              |
| 15        | 44.0                    | 47.0                          | 44.0              | 47.0                         | 14.5                            | -                 |
| 24        | 44.0                    | 47.0                          | 44.0              | 47.0                         | 49.0                            | -                 |

All figures are given for coil without pre-energization, at ambient temperature +23°C.



Coil operative range

Coil operative range graphs

U<sub>I</sub> Minimum voltage at 23°C after pre-energizing with rated voltage without contact current

U<sub>II</sub> Maximum continuous voltage at 23°C

The operating voltage limits U<sub>I</sub> and U<sub>II</sub> depend on the temperature according to the formula:

U<sub>I t<sub>amb</sub></sub> K<sub>I</sub> × U<sub>I</sub> 23°C and

U<sub>II t<sub>amb</sub></sub> K<sub>II</sub> × U<sub>II</sub> 23°C

t<sub>amb</sub> Ambient temperature

U<sub>I t<sub>amb</sub></sub> Minimum voltage at ambient temperature, t<sub>amb</sub>

U<sub>II t<sub>amb</sub></sub> Maximum voltage at ambient temperature, t<sub>amb</sub>

K<sub>I</sub>, K<sub>II</sub> Factors (dependent on temperature), see diagram

**Reed Relay V23100 -V4** (Continued)

**Insulation Data**

|   |                    |
|---|--------------------|
| Initial dielectric strength                 |                    |
| between open contacts                       |                    |
| DIP and SIL, 1 form A (NO), 2 form A (2 NO) | 250VDC             |
| DIP, 1 form C (CO)                          | 200VDC             |
| Mini SIL, 1 form A (NO)                     | 225VDC             |
| between contact and coil                    | 1500VDC            |
| Initial insulation resistance at 500 VDC    | >10 <sup>9</sup> Ω |
| Capacitance                                 |                    |
| between open contacts                       | max. 1pF           |
| between contact and coil                    | max. 2pF           |
| between adjacent contacts                   | max. 1pF           |

**Other Data**

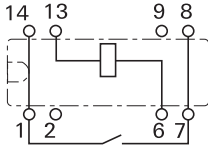
|   | form A               | form C               |
|---|----------------------|----------------------|
| Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at <a href="http://www.te.com/customer-support/rohssupportcenter">www.te.com/customer-support/rohssupportcenter</a> |                      |                      |
| Ambient temperature   | -40 to +85°C         |                      |
| Category of environmental protection  | IEC 61810            |                      |
|   | RT-III - wash tight  |                      |
| Vibration resistance (functional)   | 30g,<br>10 to 2000Hz | 30g,<br>50 to 2000Hz |
| Shock resistance (functional),<br>IEC 60068-2-27 (half sine), DIP and SIL 150g  | 50g                  | -                    |
|   | Mini SIL             | 50g                  |
| Terminal type   | PCB-THT              |                      |
| Resistance to soldering heat  | THT                  |                      |
|   | IEC 60068-2-20       |                      |
|   | 265 °C / 10 s        |                      |

**Terminal assignment**

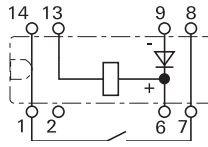
TOP view on component side of PCB

**DIP, flat version**

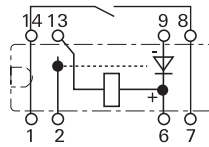
1 form A (NO)  
standard  
V23100-V4xxx-A000



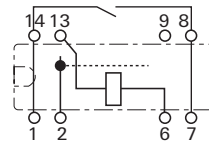
1 form A (NO)  
with diode  
V23100-V4xxx-A010



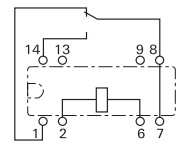
1 form A (NO)  
with electrostatic shield + diode  
V23100-V4xxx-A011



1 form A (NO)  
with electrostatic shield  
V23100-V4xxx-A001

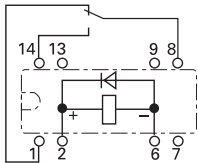


1 form C (CO)  
standard  
V23100-V4xxx-C000

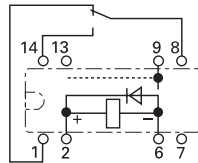


**DIP, high version**

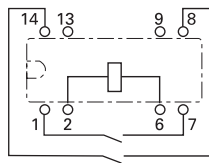
1 form C (CO)  
with diode  
V23100-V4xxx-C010



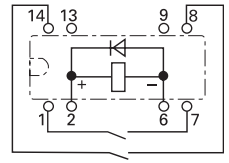
1 form C (CO)  
with electrostatic shield + diode  
V23100-V4xxx-C011



2 form A (NO)  
standard  
V23100-V43xx-B000

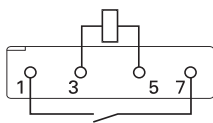


2 form A (NO)  
with diode  
V23100-V43xx-B010

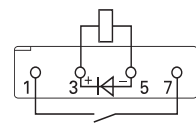


**SIL version**

1 form A (NO)  
standard  
V23100-V45xx-A000

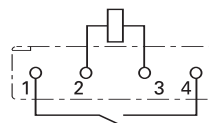


1 form A (NO)  
with diode  
V23100-V45xx-A010

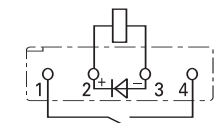


**Mini SIL version**

1 form A (NO)  
standard  
V23100-V46xx-A000



1 form A (NO)  
with diode  
V23100-V46xx-A010

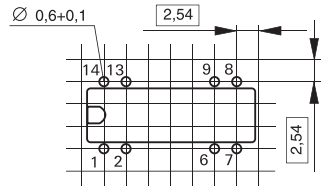


**Reed Relay V23100 -V4** (Continued)

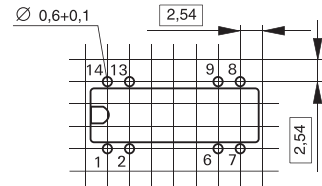
**PCB layout**

TOP view on component side of PCB

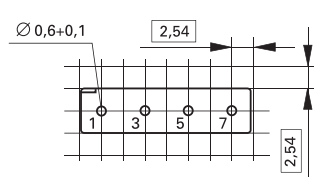
**DIP, flat version**



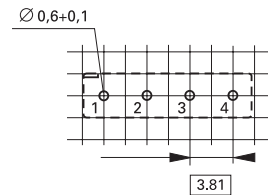
**DIP, high version**



**SIL version**

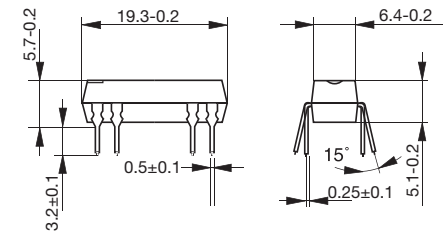


**Mini SIL version**

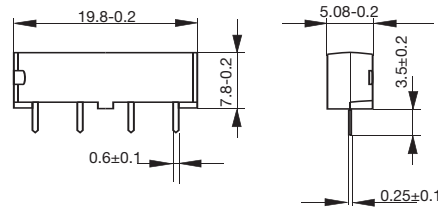


**Dimensions**

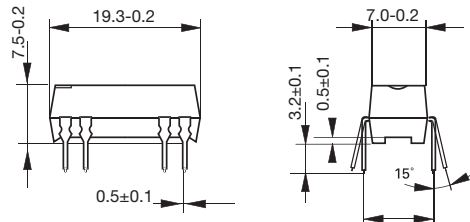
**DIP, flat version**



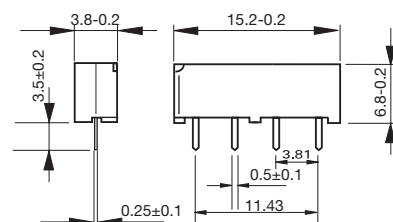
**SIL version**



**DIP, high version**



**Mini SIL version**



**Product code structure**

Typical product code **V23100-V4** **0** **05** **A0** **10**

|   |  |
|---|--|
| <b>Type</b><br>V23100-V4 Reed Relay, V23100-V4 Series |  |
| <b>Version</b>  |  |
| 0   | DIP flat, 1 form A (NO) contact or 1 form C (CO) contact without diode |
| 3   | DIP high, 2 form A (NO) or 1 form C (CO) contacts                      |
| 5   | SIL, 1 form A (NO) contact   |
| 6   | Mini SIL, 1 form A (NO) contact  |
| <b>Coil</b>   |  |
| Coil code: please refer to coil versions table        |  |
| 05  | 5VDC coil  |
| 12  | 12VDC coil   |
| 15  | 15VDC coil   |
| 24  | 24VDC coil   |
| <b>Contact arrangement</b>                            |  |
| A0  | 1 form A (NO) contact, DIP flat or SIL package                         |
| B0  | 2 form A (NO) contacts, DIP high package                               |
| C0  | 1 form C (CO) contact, DIP high package                                |
| <b>Coil circuit</b>                                   |  |
| 00  | Standard   |
| 10  | With diode   |
| 11  | With diode and electrostatic shield                                    |

**Reed Relay V23100 -V4** (Continued)

| Product Code      | Version  | Coil        | Arrangement   | Diode/shield     | Part number |               |          |             |
|-------------------|----------|-------------|---------------|------------------|-------------|---------------|----------|-------------|
| V23100-V4005-A000 | DIP flat | 5VDC        | 1 form A (NO) | Standard         | 1393763-1   |               |          |             |
| V23100-V4012-A000 |          | 12VDC       |               |                  | 1393763-6   |               |          |             |
| V23100-V4015-A000 |          | 15VDC       |               |                  | 1-1393763-0 |               |          |             |
| V23100-V4024-A000 |          | 24VDC       |               |                  | 1-1393763-4 |               |          |             |
| V23100-V4005-A010 |          | 5VDC        |               | 1 form C (CO)    | Diode       | 1393763-4     |          |             |
| V23100-V4012-A010 |          | 12VDC       |               |                  |             | 1393763-8     |          |             |
| V23100-V4015-A010 |          | 15VDC       |               |                  | 1-1393763-2 |               |          |             |
| V23100-V4024-A010 |          | 24VDC       |               |                  | 1-1393763-6 |               |          |             |
| V23100-V4305-C000 |          | 5VDC        |               |                  | Standard    | 2-1393763-0   |          |             |
| V23100-V4312-C000 |          | 12VDC       |               |                  |             | 2-1393763-8   |          |             |
| V23100-V4315-C000 | 15VDC    | 3-1393763-4 |               |                  |             |               |          |             |
| V23100-V4324-C000 | 24VDC    | 4-1393763-0 |               |                  |             |               |          |             |
| V23100-V4005-A011 | DIP high | 5VDC        | 1 form A (NO) | Diode and shield | 1393763-3   |               |          |             |
| V23100-V4012-A011 |          | 12VDC       |               |                  | 1393763-9   |               |          |             |
| V23100-V4015-A011 |          | 15VDC       |               | 1-1393763-3      |             |               |          |             |
| V23100-V4024-A011 |          | 24VDC       |               | 1-1393763-7      |             |               |          |             |
| V23100-V4305-B000 |          | 5VDC        |               | 2 form A (NO)    | Standard    | 1-1393763-8   |          |             |
| V23100-V4312-B000 |          | 12VDC       |               |                  |             | 2-1393763-6   |          |             |
| V23100-V4315-B000 |          | 15VDC       |               |                  |             | 3-1393763-2   |          |             |
| V23100-V4324-B000 |          | 24VDC       |               |                  |             | 3-1393763-8   |          |             |
| V23100-V4305-B010 |          | 5VDC        |               |                  | Diode       | 1-1393763-9   |          |             |
| V23100-V4312-B010 |          | 12VDC       |               |                  |             | 2-1393763-7   |          |             |
| V23100-V4315-B010 | 15VDC    | 3-1393763-3 |               |                  |             |               |          |             |
| V23100-V4324-B010 | 24VDC    | 3-1393763-9 |               |                  |             |               |          |             |
| V23100-V4305-C010 | SIL      | 5VDC        | 1 form C (CO) | Standard         | 2-1393763-2 |               |          |             |
| V23100-V4312-C010 |          | 12VDC       |               |                  | 3-1393763-0 |               |          |             |
| V23100-V4315-C010 |          | 15VDC       |               |                  | 3-1393763-6 |               |          |             |
| V23100-V4324-C010 |          | 24VDC       |               |                  | 4-1393763-2 |               |          |             |
| V23100-V4305-C011 |          | 5VDC        |               | Diode and shield | 2-1393763-3 |               |          |             |
| V23100-V4312-C011 |          | 12VDC       |               |                  | 3-1393763-1 |               |          |             |
| V23100-V4315-C011 |          | 15VDC       |               |                  | 3-1393763-7 |               |          |             |
| V23100-V4324-C011 |          | 24VDC       |               |                  | 4-1393763-3 |               |          |             |
| V23100-V4505-A000 |          | Mini SIL    |               |                  | 5VDC        | 1 form A (NO) | Standard | 4-1393763-4 |
| V23100-V4512-A000 |          |             |               |                  | 12VDC       |               |          | 4-1393763-7 |
| V23100-V4515-A000 | 15VDC    |             | 4-1393763-9   |                  |             |               |          |             |
| V23100-V4524-A000 | 24VDC    |             | 5-1393763-1   |                  |             |               |          |             |
| V23100-V4505-A010 | 5VDC     |             | Diode         | 4-1393763-5      |             |               |          |             |
| V23100-V4512-A010 | 12VDC    |             |               | 4-1393763-8      |             |               |          |             |
| V23100-V4515-A010 | 15VDC    |             |               | 5-1393763-0      |             |               |          |             |
| V23100-V4524-A010 | 24VDC    |             |               | 5-1393763-2      |             |               |          |             |
| V23100-V4605-A000 | 5VDC     |             |               | Standard         | 1422026-2   |               |          |             |
| V23100-V4612-A000 | 12VDC    |             |               |                  | 1422026-3   |               |          |             |
| V23100-V4605-A010 | 5VDC     | Diode       | 1422026-5     |                  |             |               |          |             |
| V23100-V4612-A010 | 12VDC    |             | 1422026-6     |                  |             |               |          |             |