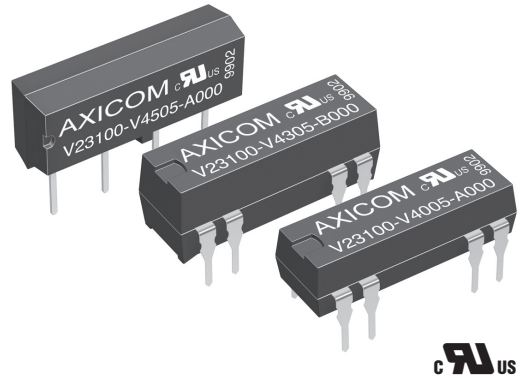## Reed Relay V23100 -V4

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

Typical applications
Incircuit 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

| Contact Data | form A | form C |
|---|---|---|
| Contact arrangement | 1 form A (1 NO), 2 form A (2 NO) | 1 form C (CO) |
| Max. switching voltage | | |
| at rated coil voltage 5VDC | 200VDC/VAC$_{peak}$ | 175VDC |
| at rated coil voltage 12to 24VDC | 200VDC/VAC$_{peak}$ | 175VDC$_{peak}$ |
| 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$^6$ operations | |
| at 24V/400mA | 5x10$^6$ operations | |

### Coil Data

| 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$_{min.}$ | Release voltage VDC$_{min.}$ | Coil resistance Ω±10% | Rated coil power mW |
|---|---|---|---|---|---|
| **1 form A (1 NO) contact** | | | | | |
| 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 |
| **2 form A (2 NO) or 1 form C (1 CO) contact** | | | | | |
| 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 VDC | DIP flat 1 form A with diode VDC | DIP high 1 form C VDC | DIP high 2 form A std,diode VDC | DIP high 1 form C diode+ shield VDC | Mini SIL 1 form A 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.



Ambient temperature $t_{amb}$ [°C]

Coil operative range
Coil operative range graphs

| | |
|---|---|
| U$_I$ | Minimum voltage at 23°C after pre-energizing with rated voltage without contact current |
| U$_{II}$ | Maximum continous voltage at 23°C |
| | The operating voltage limits U$_I$ and U$_{II}$ depend on the temperature according to the formula: |
| U$_{I\ tamb}$ | K$_I$xU$_I$ 23°C and |
| U$_{II\ tamb}$ | K$_{II}$xU$_{II}$ 23°C |
| tamb | Ambient temperature |
| U$_{I\ tamb}$ | Minimum voltage at ambient temperature, tamb |
| U$_{II\ tamb}$ | Maximum voltage at ambient temperature, tamb |
| K$_I$ , K$_{II}$ | Factors (dependent on temperature), see diagram |

Datasheets and product specification according to IEC 61810-1 and to be used only together with the 'Definitions' section.

Datasheets and product data is subject to the terms of the disclaimer and all chapters of the 'Definitions' section, available at http://relays.te.com/definitions

Datasheets, product data, 'Definitions' section, application notes and all specifications are subject to change.

## 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   $>10^9\Omega$

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 www.te.com/customersupport/rohssupportcenter | | |
| Ambient temperature | -40 to +85°C | |
| Category of environmental protection | | |
|   IEC 61810 | RT-III - wash tight | |
| Vibration resistance (functional) | 30g, 10 to 2000Hz | 30g, 50 to 2000Hz |
| Shock resistance (functional), | | |
|   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
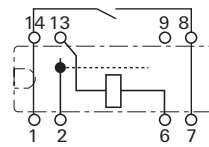
1 form A (NO)
standard
V23100-V4xxx-A000

1 form A (NO)
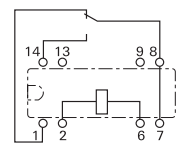with diode
V23100-V4xxx-A010
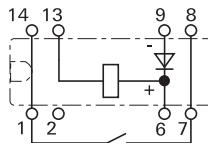
1 form A (NO)
with electrostatic shield + diode
V23100-V4xxx-A011
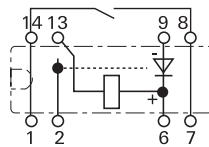
1 form A (NO)
with electrostatic shield
V23100-V4xxx-A001
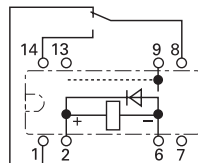
1 form C (CO)
standard
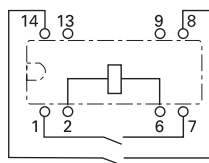V23100-V4xxx-C000

#### DIP, high version

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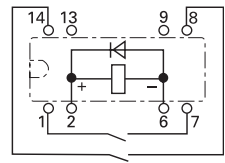with diode
V23100-V4xxx-C010

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

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

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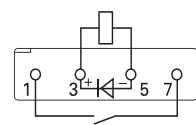with diode
V23100-V43xx-B010

#### SIL version

1 form A (NO)
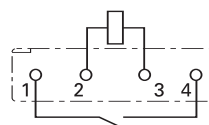standard
V23100-V45xx-A000
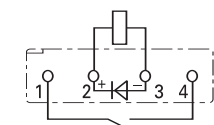
1 form A (NO)
with diode
V23100-V45xx-A010

#### Mini SIL version

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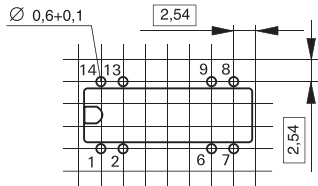V23100-V46xx-A000

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

## Reed Relay V23100 -V4 (Continued)
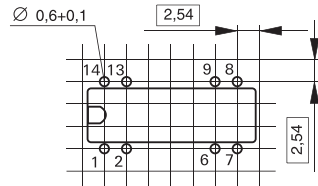
**PCB layout**
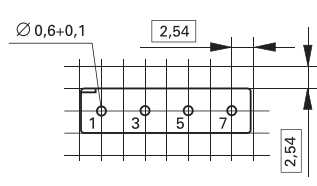TOP view on component side of PCB

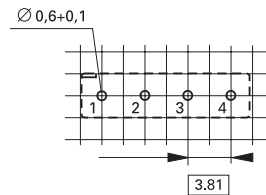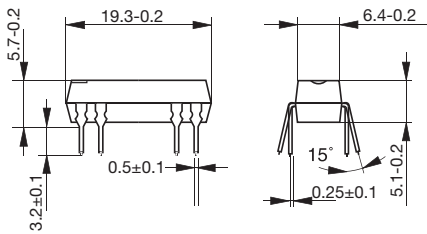**DIP, flat version**        **DIP, high version**        **SIL version**        **Mini SIL version**
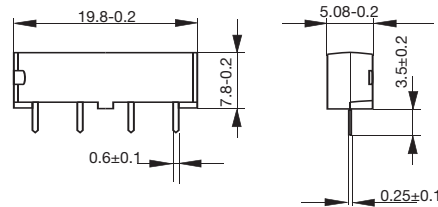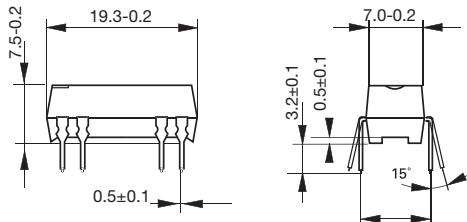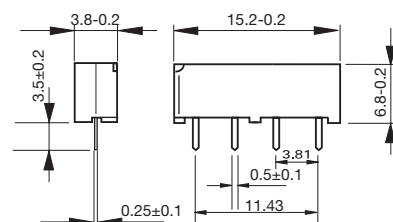


**Dimensions**

**DIP, flat version**        **SIL version**



**DIP, high version**        **Mini SIL version**



**Product code structure**

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

| Type | | |
| --- | --- | --- |
| **V23100-V4** | Reed Relay, V23100-V4 Series | |
| **Version** | | |
| | **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 |
| **Coil** | | |
| | Coil code: please refer to coil versions table | |
| | **05** 5VDC coil        **15** 15VDC coil | |
| | **12** 12VDC coil        **24** 24VDC coil | |
| **Contact arrangement** | | |
| | **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 |
| **Coil circuit** | | |
| | **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 | | 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 | 1 form C (CO) | 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 | | 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 | DIP high | 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 | | 5VDC | 1 form C (CO) | | 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 | 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 | Mini SIL | 5VDC | | Standard | 1422026-2 |
| V23100-V4612-A000 | | 12VDC | | | 1422026-3 |
| V23100-V4605-A010 | | 5VDC | | Diode | 1422026-5 |
| V23100-V4612-A010 | | 12VDC | | | 1422026-6 |