

**W11 Relay V23101**

- Multi purpose relay
- Small size permitting high packing density
- 1 form C contact (1 CO, 1 changeover contact)
- 200mW and 450mW coils
- 1A and 3A contacts
- High shock resistance of 30g
- Ambient temperature for sensitive version up to 85°C
- Immersion cleanable

Typical applications  
Security devices, electric door openers, duplex intercommunication systems, measurement and controls



**Approvals**

UL 508 File No. E 111441  
Technical data of approved types on request

| Contact Data                              | 1.25A                                  | 3A                          |
|---|--|-----------------------------|
| Contact arrangement                       | 1 form C (CO)                          |                             |
| Max. switching voltage                    | 120VDC, 125VAC                         |                             |
| Rated current                             | 1.25A                                  | 3A                          |
| Limiting continuous current, 85°C         | 1.25A                                  | 3A                          |
| Switching power                           | 30W, 62.5VA                            | 72W, 360VA                  |
| Contact material                          | AgPd, gold plated<br>AgNi, gold plated | AgNi                        |
| Min. recommended contact load             | 10mA at 20 mV                          |                             |
| Minimum switching voltage                 | 100µV                                  |                             |
| Initial contact resistance                | 100mΩ at 10mA, 20mV                    |                             |
| Frequency of operation, without load max. | 20 operations/s                        |                             |
| Operate / release time max.               | 7ms/5ms                                |                             |
| Bounce time max., form A/form B           | 2/10ms                                 |                             |
| Electrical endurance,                     |  |                             |
| standard version                          |  |                             |
| at 24VDC / 1.25A                          | min. 3x10 <sup>5</sup> ops.            |                             |
| at 24VDC / 3A                             |  | min. 2x10 <sup>5</sup> ops. |
| at 120VAC / 1.25A                         | min. 1.5x10 <sup>5</sup> ops.          |                             |
| at 120VAC / 3A                            |  | min. 4x10 <sup>5</sup> ops. |
| sensitive version                         |  |                             |
| at 24VDC / 1.25A                          | min. 2x10 <sup>5</sup> ops.            |                             |
| at 24VDC / 3A                             |  | min. 1x10 <sup>5</sup> ops. |
| at 120VAC / 1.25A                         | min. 1x10 <sup>5</sup> ops.            |                             |
| at 120VAC / 3A                            |  | min. 3x10 <sup>5</sup> ops. |
| Mechanical endurance                      | typ. 10x10 <sup>6</sup> operations     |                             |

**Coil Data**

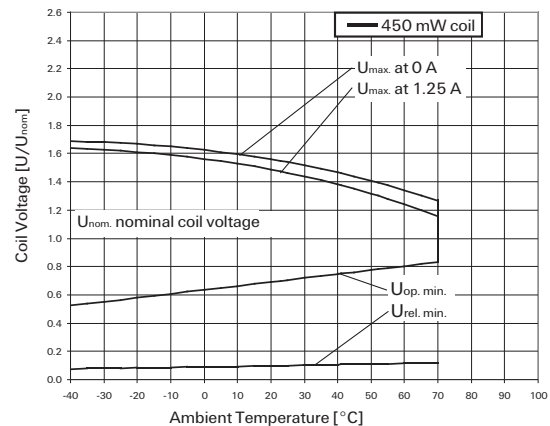
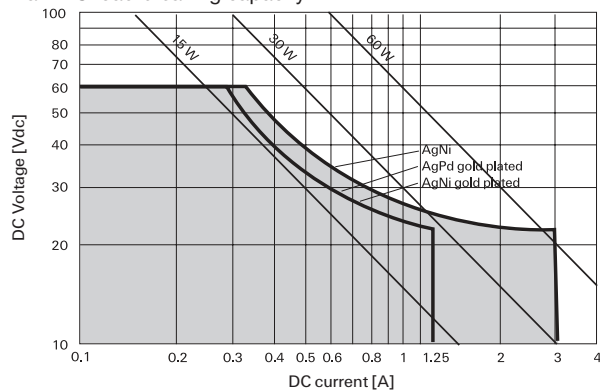
|                       |              |
|-----------------------|--------------|
| Magnetic system       | neutral      |
| Coil voltage range    | 1.5 to 24VDC |
| Max. coil temperature | 130°C        |
| Thermal resistance    | < 125K/W     |

**Coil versions, monostable**

| Coil code                    | Rated voltage VDC | Operate voltage VDC <sub>min.</sub> | Limiting Voltage VDC <sub>max.</sub> | Release voltage VDC <sub>min.</sub> | Coil resistance Ω±10% | Rated coil power mW |
|------------------------------|-------------------|-------------------------------------|--------------------------------------|-------------------------------------|-----------------------|---------------------|
| <b>Standard coil, 450mW</b>  |                   |                                     |                                      |                                     |                       |                     |
| 001                          | 1.5               | 1.3                                 | 2.6                                  | 0.15                                | 6                     | 375                 |
| 002                          | 3                 | 2.1                                 | 4.7                                  | 0.30                                | 20                    | 450                 |
| 003                          | 5                 | 3.5                                 | 7.9                                  | 0.50                                | 56                    | 446                 |
| 004                          | 6                 | 4.2                                 | 9.5                                  | 0.60                                | 80                    | 450                 |
| 005                          | 9                 | 6.3                                 | 14.2                                 | 0.90                                | 180                   | 450                 |
| 006                          | 12                | 8.4                                 | 19.0                                 | 1.20                                | 320                   | 450                 |
| 007                          | 24                | 16.8                                | 38.0                                 | 2.40                                | 1280                  | 450                 |
| <b>Sensitive coil, 200mW</b> |                   |                                     |                                      |                                     |                       |                     |
| 101                          | 1.5               | 1.1                                 | 3.6                                  | 0.15                                | 12                    | 188                 |
| 102                          | 3                 | 2.3                                 | 7.1                                  | 0.30                                | 45                    | 200                 |
| 103                          | 5                 | 3.8                                 | 11.6                                 | 0.50                                | 120                   | 208                 |
| 104                          | 6                 | 4.5                                 | 14.2                                 | 0.60                                | 180                   | 200                 |
| 105                          | 9                 | 6.8                                 | 21.2                                 | 0.90                                | 400                   | 203                 |
| 106                          | 12                | 9.0                                 | 28.0                                 | 1.20                                | 700                   | 206                 |
| 107                          | 24                | 18.0                                | 56.0                                 | 2.40                                | 2800                  | 206                 |
| 108                          | 18                | 13.5                                | 33.0                                 | 1.80                                | 1620                  | 200                 |

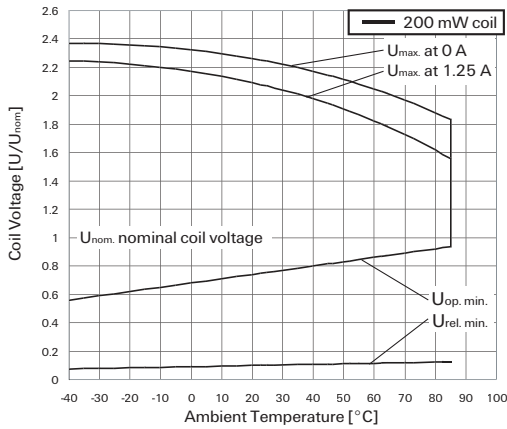
All figures are given for coil without pre-energization, at ambient temperature +23°C.

**Max. DC load breaking capacity**



**W11 Relay V23101** (Continued)

**Coil Data** (continued)



**Coil operative range graphs**

- U<sub>nom</sub> Nominal coil voltage
- U<sub>max</sub> Upper limit of the operative range of the coil voltage (limiting voltage) when coils are continuously energized
- U<sub>op. min.</sub> Lower limit of the operative range of the coil voltage (reliable operate voltage)
- U<sub>rel. min.</sub> Lower limit of the operative range of the coil voltage (reliable release voltage)

**Insulation Data**

|   |           |
|---|-----------|
| Initial dielectric strength             |           |
| between open contacts                   | 750Vrms   |
| between contact and coil                | 1000Vrms  |
| Initial insulation resistance at 500VDC | > 109Ω    |
| Capacitance                             |           |
| between open contacts                   | max. 2pF  |
| between contact and coil                | max. 10pF |

**Other Data**

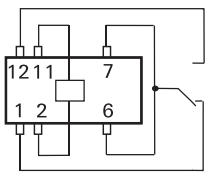
Material compliance: EU RoHS/ELV, China RoHS, REACH, Halogen content refer to the Product Compliance Support Center at [www.te.com/customersupport/rohssupportcenter](http://www.te.com/customersupport/rohssupportcenter)

|                                      |                              |
|--------------------------------------|------------------------------|
| Ambient temperature                  | -40 to +85°C                 |
| Category of environmental protection |                              |
| IEC 61810                            | RT III - wash tight          |
| Vibration resistance (functional)    | 10g, 10 to 200Hz             |
| Shock resistance (functional)        |                              |
| IEC 60068-2-27 (half sine)           | 30g                          |
| Shock resistance (destructive)       | 100g                         |
| Terminal type                        | PCB-THT                      |
| Weight                               | max. 4g                      |
| Resistance to soldering heat THT     |                              |
| IEC 60068-2-20                       | 265°C/10s                    |
| Ultrasonic cleaning                  | not recommended              |
| Packaging/unit                       | tube/25 pcs.<br>box/625 pcs. |

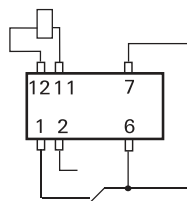
**Terminal assignment**

TOP view on component side of PCB

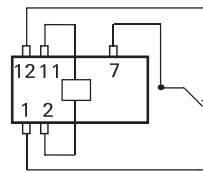
6 pin version with symmetrical coil assignment  
V23101-D0xxx-Axxx



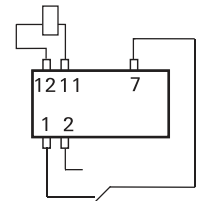
6 pin version with asymmetrical coil assignment  
V23101-D0xxx-Bxxx



5 pin version with symmetrical coil assignment  
V23101-D1xxx-Axxx



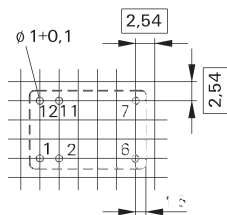
5 pin version with asymmetrical coil assignment  
V23101-D1xxx-Bxxx



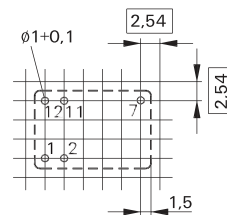
**PCB layout**

TOP view on component side of PCB

6 pin version

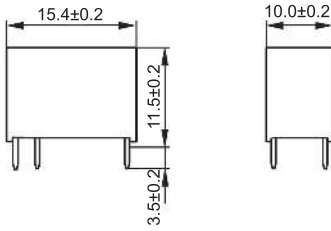


5 pin version

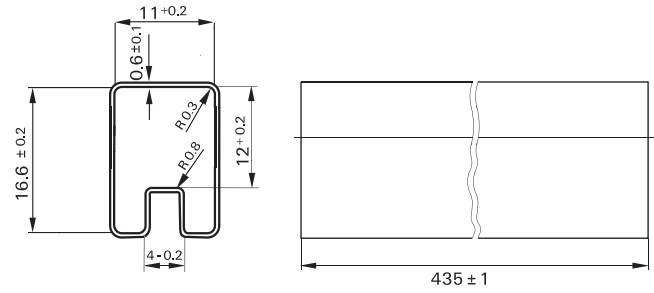


**W11 Relay V23101** (Continued)

**Dimensions**



**Packing**



**Product code structure**

Typical product code **V23101 D0 104 B 401**

|                                 |  |
|---------------------------------|--|
| <b>Type</b>                     | <b>V23101</b> W11 Series Signal Relay  |
| <b>Pinning</b>                  | <b>D0</b> 6 pin version (standard)<br><b>D1</b> 5-pin version (without pin no. 6)  |
| <b>Coil</b>                     | Coil code: please refer to coil versions table   |
| <b>Coil terminal assignment</b> | <b>A</b> Symmetrical coil assignment<br><b>B</b> Asymmetrical coil assignment  |
| <b>Contacts</b>                 | <b>201</b> 1 form C (CO), AgPd, gold plated<br><b>301</b> 1 form C (CO), AgNi<br><b>401</b> 1 form C (CO), AgNi, gold plated |

**W11 Relay V23101** (Continued)

| Product Code      | Pinning           | Coil              | Coil voltage    | Coil assignment | Cont.material   | Part number  |                 |              |
|-------------------|-------------------|-------------------|-----------------|-----------------|-----------------|--------------|-----------------|--------------|
| V23101-D0001-A201 | 6 pins<br>version | Standard<br>coil  | 1.5VDC          | Symmetrical     | AgPd, Au plated | 1393779-1    |                 |              |
| V23101-D0002-A201 |                   |                   | 3VDC            |                 |                 | 1393779-3    |                 |              |
| V23101-D0003-A201 |                   |                   | 5VDC            |                 |                 | 1393779-5    |                 |              |
| V23101-D0004-A201 |                   |                   | 6VDC            |                 |                 | 1393779-8    |                 |              |
| V23101-D0005-A201 |                   |                   | 9VDC            |                 |                 | 1-1393779-1  |                 |              |
| V23101-D0006-A201 |                   |                   | 12VDC           |                 |                 | 1-1393779-3  |                 |              |
| V23101-D0007-A201 |                   |                   | 24VDC           |                 |                 | 1-1393779-8  |                 |              |
| V23101-D0001-B201 |                   |                   | 1.5VDC          |                 |                 | Asymmetrical | 1393779-2       |              |
| V23101-D0002-B201 |                   |                   | 3VDC            |                 |                 |              | 1393779-4       |              |
| V23101-D0003-B201 |                   |                   | 5VDC            |                 |                 |              | 1393779-6       |              |
| V23101-D0004-B201 |                   |                   | 6VDC            |                 |                 |              | 1-1393779-0     |              |
| V23101-D0005-B201 |                   |                   | 9VDC            |                 |                 |              | 1-1393779-2     |              |
| V23101-D0006-B201 |                   |                   | 12VDC           |                 |                 |              | 1-1393779-6     |              |
| V23101-D0007-B201 |                   |                   | 24VDC           |                 |                 |              | 2-1393779-0     |              |
| V23101-D0006-A301 | 12VDC             | Symmetrical       | AgNi            | 4-1419172-4     |                 |              |                 |              |
| V23101-D0003-B301 | 5VDC              |                   |                 | Asymmetrical    | 1393779-7       |              |                 |              |
| V23101-D0006-B301 | 12VDC             | 1-1393779-7       |                 |                 |                 |              |                 |              |
| V23101-D0007-B301 | 24VDC             | 2-1393779-1       |                 |                 |                 |              |                 |              |
| V23101-D0003-A401 | 5 pins            | Sensitive<br>coil | 5VDC            | Symmetrical     | AgNi, Au plated | 1422028-2    |                 |              |
| V23101-D0006-A401 |                   |                   | 12VDC           |                 |                 | 1422028-3    |                 |              |
| V23101-D0007-A401 |                   |                   | 24VDC           |                 |                 | 1422028-5    |                 |              |
| V23101-D0006-B401 |                   |                   | 12VDC           |                 |                 | Asymmetrical | 1422028-4       |              |
| V23101-D0007-B401 |                   |                   | 24VDC           |                 |                 |              | 1422028-6       |              |
| V23101-D1006-A201 |                   |                   | 12VDC           |                 |                 | Symmetrical  | AgPd, Au plated | 4-1393779-1  |
| V23101-D1003-B201 |                   |                   | 5VDC            |                 |                 |              |                 | Asymmetrical |
| V23101-D1006-B201 |                   |                   | 12VDC           |                 |                 | 4-1393779-2  |                 |              |
| V23101-D1007-B201 |                   |                   | 24VDC           |                 |                 |              | 1413012-1       |              |
| V23101-D1006-A401 |                   |                   | 12VDC           |                 |                 | Symmetrical  | AgNi, Au plated | 1-1422028-2  |
| V23101-D1006-B401 |                   | Asymmetrical      |                 | 1-1422028-3     |                 |              |                 |              |
| V23101-D0101-A201 | 6 pins<br>version | Sensitive<br>coil | 1.5VDC          | Symmetrical     | AgPd, Au plated | 2-1393779-2  |                 |              |
| V23101-D0102-A201 |                   |                   | 3VDC            |                 |                 | 2-1393779-4  |                 |              |
| V23101-D0103-A201 |                   |                   | 5VDC            |                 |                 | 2-1393779-6  |                 |              |
| V23101-D0104-A201 |                   |                   | 6VDC            |                 |                 | 2-1393779-8  |                 |              |
| V23101-D0105-A201 |                   |                   | 9VDC            |                 |                 | 3-1393779-0  |                 |              |
| V23101-D0106-A201 |                   |                   | 12VDC           |                 |                 | 3-1393779-2  |                 |              |
| V23101-D0107-A201 |                   |                   | 24VDC           |                 |                 | 3-1393779-5  |                 |              |
| V23101-D0108-A201 |                   |                   | 18VDC           |                 |                 | 3-1393779-9  |                 |              |
| V23101-D0101-B201 |                   |                   | 1.5VDC          |                 |                 | Asymmetrical | 2-1393779-3     |              |
| V23101-D0102-B201 |                   |                   | 3VDC            |                 |                 |              | 2-1393779-5     |              |
| V23101-D0103-B201 |                   |                   | 5VDC            |                 |                 |              | 2-1393779-7     |              |
| V23101-D0104-B201 |                   |                   | 6VDC            |                 |                 |              | 2-1393779-9     |              |
| V23101-D0105-B201 |                   |                   | 9VDC            |                 |                 |              | 3-1393779-1     |              |
| V23101-D0106-B201 |                   |                   | 12VDC           |                 |                 |              | 3-1393779-3     |              |
| V23101-D0107-B201 | 24VDC             | 3-1393779-8       |                 |                 |                 |              |                 |              |
| V23101-D0106-A301 | 12VDC             | Symmetrical       | AgNi            | 1422037-2       |                 |              |                 |              |
| V23101-D0107-A301 | 24VDC             |                   |                 | 3-1393779-7     |                 |              |                 |              |
| V23101-D0106-B301 | 12VDC             | Asymmetrical      | AgNi, Au plated | 3-1393779-4     |                 |              |                 |              |
| V23101-D0103-A401 | 5VDC              |                   |                 | Symmetrical     | 1422028-7       |              |                 |              |
| V23101-D0106-A401 | 12VDC             | 1422028-8         |                 |                 |                 |              |                 |              |
| V23101-D0107-A401 | 24VDC             | 1422028-9         |                 |                 |                 |              |                 |              |
| V23101-D0108-A401 | 18VDC             |                   | 1-1422028-1     |                 |                 |              |                 |              |
| V23101-D0107-B401 | 24VDC             | Asymmetrical      |                 | 1-1422028-0     |                 |              |                 |              |
| V23101-D1106-A201 | 5 pins            |                   | 12VDC           | Symmetrical     | AgPd, Au plated | 4-1393779-3  |                 |              |
| V23101-D1107-A201 |                   |                   | 24VDC           |                 |                 | 4-1393779-6  |                 |              |
| V23101-D1106-B201 |                   |                   | 12VDC           |                 |                 | Asymmetrical | 4-1393779-4     |              |
| V23101-D1107-B201 |                   |                   | 24VDC           |                 |                 |              | 4-1393779-7     |              |
| V23101-D1106-B301 |                   |                   | 12VDC           |                 |                 |              | AgNi            | 4-1393779-5  |
| V23101-D1106-A401 |                   |                   |                 |                 |                 | Symmetrical  | AgNi, Au plated | 1-1422028-4  |
| V23101-D1106-B401 |                   |                   |                 |                 |                 | Asymmetrical |                 | 1-1422028-5  |