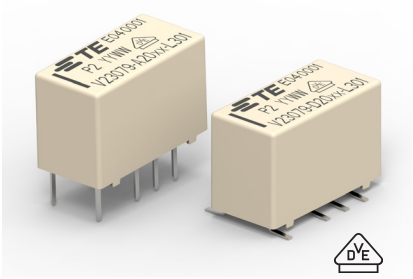
# P2 Lighting Relay

- **Relay for LED tubes meeting EN62776 and VDE**
- **Slim line 15x7.5mm (.590x.295")**
- **2 form C bifurcated contacts (2 changeover contacts, 2 CO)**
- **Immersion cleanable**
- **High sensitivity for low power consumption 140mW/ 200mW**
- **High dielectric strength**
- **0.75/1.5 mm contact gap**

LED tubes applications



## Approvals

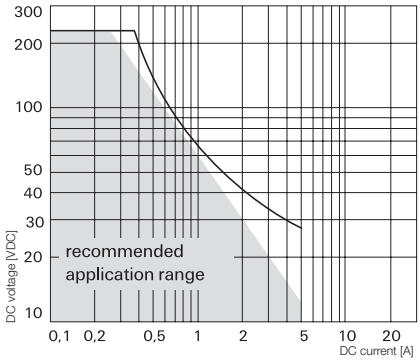
VDE Cert. No. 40047571

Technical data of approved types on request

## Contact Data

| | |
|---|---|
| Contact arrangement | 2 form C (CO) |
| Max. switching voltage | 220VDC, 250VAC |
| Rated current | 2A |
| Limiting continuous current, 85°C | 2A |
| Switching Power | 60W, 62.5VA |
| Contact material | AgNi, gold-covered |
| Contact style | bifurcated contact |
| Minimum switching voltage | 100µV |
| Thermoelectrical potential | <10µV |
| Initial contact resistance | <50mΩ at 10mA, 20mV |
| Frequency of operation, without load | 50 operations/s |
| Operate time | typ. 2ms, max. 4ms |
| Set/reset time | typ. 2ms, max. 4ms |
| Release time | |
| without diode in parallel | typ. 2ms, max. 4ms |
| with diode in parallel | typ. 4ms, max. 6ms |
| Bounce time | typ. 1ms, max. 3ms |
| Contact ratings, IEC 61810 | |
| at 0.5A/125VAC/85°C/resistive | 100k cycles, NO contact |
| at 1A/30VDC/ 85°C/resistive | 100k cycles, CO contact |

**Max. DC load breaking capacity**



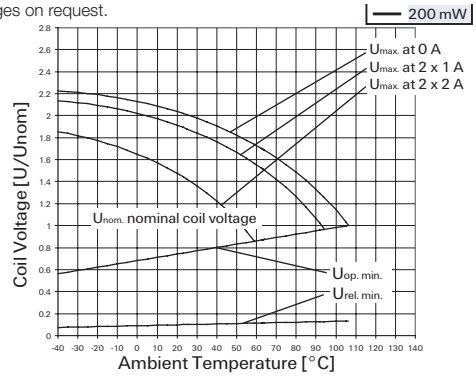

## Coil Data

| | |
|---|---|
| Magnetic system | polarized |
| Coil voltage range | 3 to 24VDC |
| Max. coil temperature | 105°C |
| Thermal resistance | < 125K/W |

**Coil versions, monostable lighting relay**

| Coil code | Rated voltage VDC | Operate voltage VDC | Limiting Voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|---|---|---|---|---|---|---|
| 008 | 3.00 | 2.25 | 6.1 | 0.3 | 45 | 200 |
| 016 | 4.00 | 3.00 | 8.1 | 0.4 | 80 | 200 |
| 011 | 4.50 | 3.38 | 9.1 | 0.45 | 101 | 200 |
| 001 | 5.00 | 3.75 | 10.1 | 0.5 | 125 | 200 |
| 002 | 6.00 | 4.50 | 12.1 | 0.6 | 180 | 200 |
| 006 | 9.00 | 6.75 | 18.2 | 0.9 | 405 | 200 |
| 003 | 12.00 | 9.00 | 24.2 | 1.2 | 720 | 200 |
| 005 | 24.00 | 19.00 | 48.4 | 2.4 | 2500 | 225 |

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

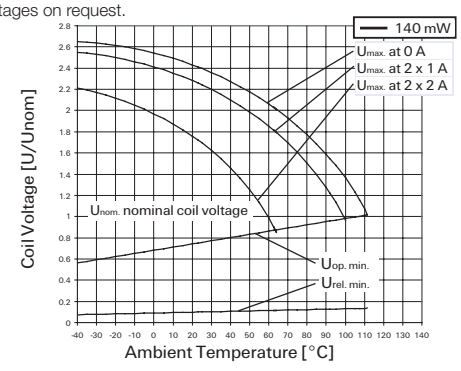



## Coil Data (continued)

**Coil versions, bistable**

| Coil code | Rated voltage VDC | Set voltage VDC | Limiting Voltage VDC | Reset voltage VDC | Coil resistance Ω±10% | Rated coil power mW |
|---|---|---|---|---|---|---|
| **Bistable, 1 coil lighting relay** | | | | | | |
| 108 | 3.00 | 2.25 | 6.5 | 0.3 | 64 | 140 |
| 111 | 4.50 | 3.38 | 9.8 | 0.45 | 145 | 140 |
| 101 | 5.00 | 3.75 | 10.9 | 0.5 | 178 | 140 |
| 102 | 6.00 | 4.50 | 13.0 | 0.6 | 257 | 140 |
| 106 | 9.00 | 6.75 | 19.6 | 0.9 | 578 | 140 |
| 103 | 12.00 | 9.00 | 26.15 | 1.2 | 1028 | 140 |

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



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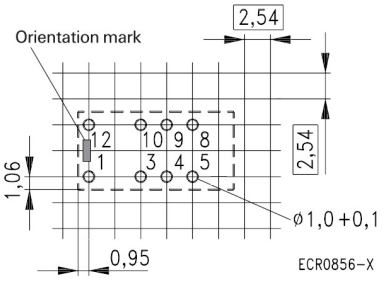
## P2 Lighting Relay (Continued)

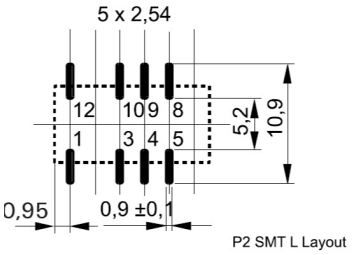
| Insulation Data | LED |
|---|---|
| Initial dielectric strength | |
| between open contacts | $1500V_{rms}$ |
| between contact and coil | $3000V_{rms}$ |
| between adjacent contacts | $1500V_{rms}$ |
| Initial insulation resistance at 500 Vdc | $> 10^9\Omega$ |
| Clearance /creepage | |
| clearance according to IEC / EN 60950 | > 1.5mm |
| creepage according to IEC / EN 60950 | >1.5mm |
| open contact gap | ≥ 0.75mm |
| using contacts in serial according to EN62776 | ≥ 1.5 mm |

| 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 | |
| Ambient temperature | -40 to +85°C |
| Category of environmental protection | |
| IEC 61810 | RT III - wash tight |
| Vibration resistance (functional) | 35g, 10 to 1000Hz |
| Shock resistance (functional) | |
| IEC 60068-2-27 (half sine) | 100g |
| Terminal type | PCB-THT, SMT long and short terminals |
| Weight | max. 2.8 g |
| Resistance to soldering heat THT | |
| IEC 60068-2-20 | 265°C/10s |
| Moisture sensitive level, JEDEC J-Std-020D related only to SMT relays packed in orginal dry-packs | MSL3 |
| Ultrasonic cleaning | not recommended |
| Packaging/unit | |
| THT | box/2000 pcs. |
| SMT | reel/2000 pcs. or 2500 pcs. |

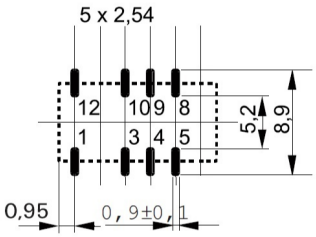
**PCB layout**
TOP view on component side of PCB




SMT, long terminals

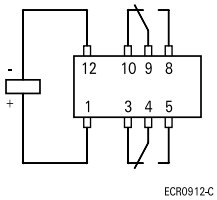



SMT, short terminals

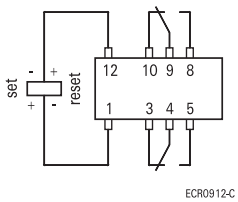



**Terminal assignment**
TOP view on component side of PCB

Monostable version




Bistable version, 1-coil

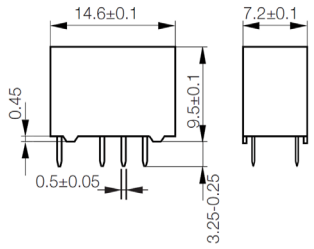



Contacts are shown in reset condition.
Both coils can be used as either set or reset coils.
Contact position might change during transportation and must be reset before use.

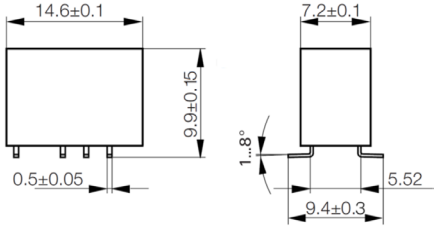
**Dimensions**

Overmolded coil, high dielectric version

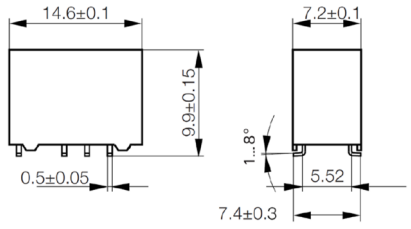
THT version




SMT, long terminals

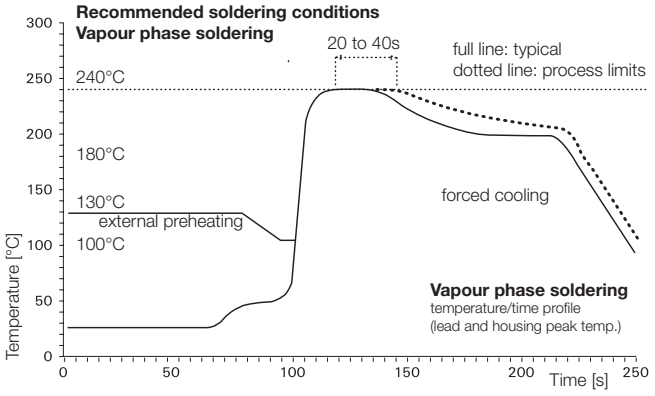


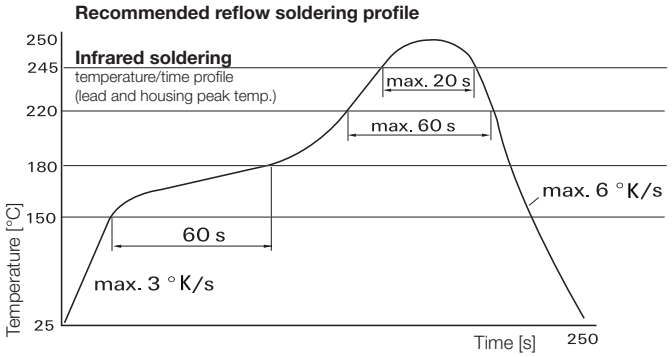

SMT, short terminals



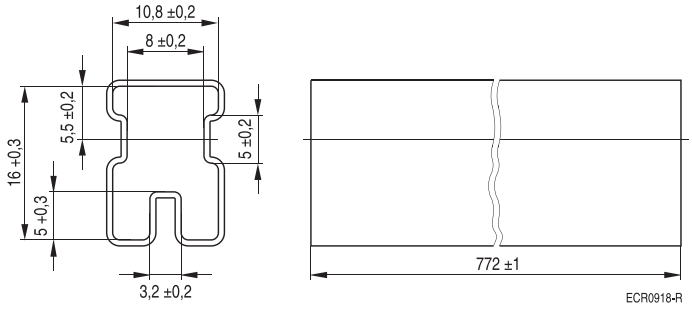
## P2 Lighting Relay (Continued)

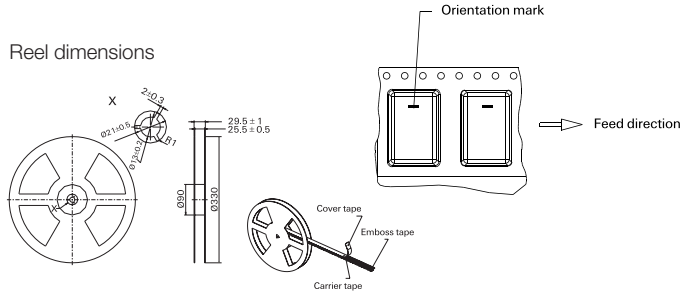
### Processing



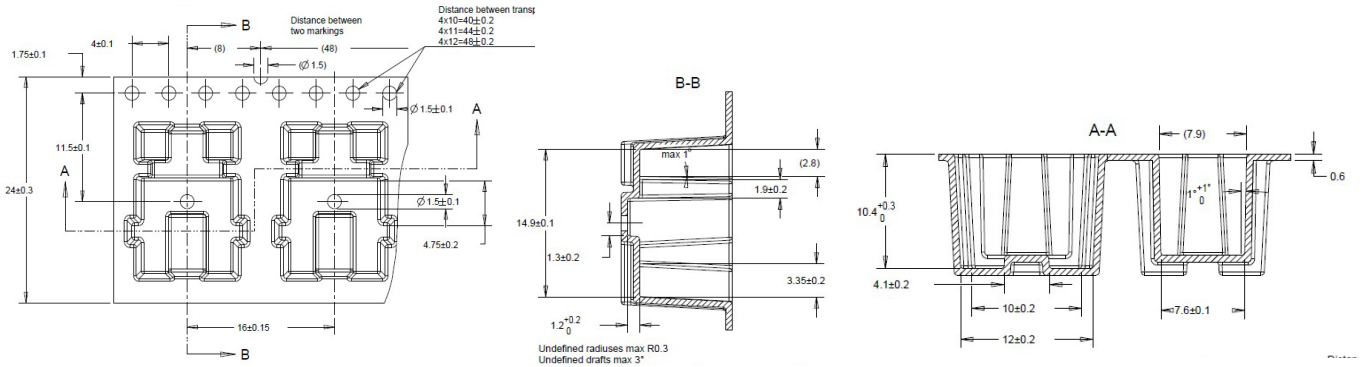

### Packing



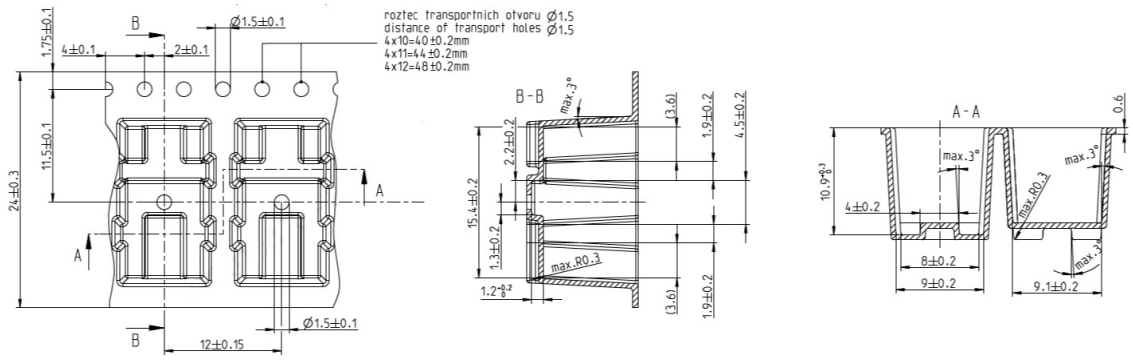



## P2 Lighting Relay (Continued)

SMT, long terminals




SMT, short terminals




### Product code structure

Typical product code **V23079** **A** **2** **001** **L** **301**

**Type**
**V23079** Signal Relay P2 Series

**Version**

| | | | | | |
|---|---|---|---|---|---|
| **A** | THT, monostable | **D** | SMT, monostable, long term. | **G** | SMT, monostable, short term. |
| **C** | THT, latching, 1 coil | **F** | SMT, latching, 1 coil, long term. | **J** | SMT, latching, 1 coil, short term. |

**Coil design**
**2** Overmolded coil

**Coil**
Coil code: please refer to coil versions table

**Version**
**L** LED Application

**Contacts** for standard versions
**301** 2 form C contacts (2 CO), AgNi +Au

| Product code | Version | Coil type | Coil voltage | Part number |
|---|---|---|---|---|
| V23079-A2001-L301 | THT | Monostable | 5VDC | 1422008-6 |
| V23079-A2006-L301 | THT | Monostable | 9VDC | 1-1422008-1 |
| V23079-A2003-L301 | THT | Monostable | 12VDC | 1422008-7 |
| V23079-D2003-L301 | SMT | Monostable | 12VDC | 1422008-9 |
| V23079-G2003-L301 | SMT | Monostable | 12VDC | 1422009-1 |
| V23079-J2111-L301 | SMT | Bistable, 1 coil | 4.5VDC | 1422008-8 |
| V23079-A2005-L301 | THT | Monostable | 24 VDC | 1-1422008-2 |
| V23079-D2005-L301 | SMT | Monostable | 24VDC | 5-1422008-2 |