

**Power Relay PK2 (THT – THR)**

- 60% volume reduced Power K at increased performance
- PCB area requirements minimized by 50% to only 293mm<sup>2</sup>
- Size optimized to lwh (mm) 18.3x16x15.9
- Limiting continuous current 40A
- Maximum switch on current 200A
- Increased ambient temperature 105°C
- Design allows highest reliability
- High shock and vibration resistance
- Wave (THT) and reflow (THR/pin-in-paste) solderable versions
- For latching (bistable) version refer to Power Relay PK2 Latching

Typical applications

ABS control, blower fans, cooling fan, engine control, fuel pump, glow plug, hazard warning signal, switched power supply.



F201Rfcw2b

**Contact Data**

|   |                                       |
|---|---------------------------------------|
| Contact arrangement   | 1 form A, 1 NO                        |
| Rated voltage   | 12VDC                                 |
| Rated current   | 40A <sup>1)</sup>                     |
| Limiting continuous current   |                                       |
| 23°C  | 40A <sup>1)</sup>                     |
| 85°C  | 33A <sup>1)</sup>                     |
| 105°C   | 22A <sup>1)</sup>                     |
| Limiting making current   | 200A <sup>2)</sup>                    |
| Limiting breaking current   | 40A <sup>2)</sup>                     |
| Contact material  | AgSnO <sub>2</sub>                    |
| Min. recommended contact load   | 1A at 5VDC <sup>3)</sup>              |
| Initial voltage drop at 10A, typ./max.                                      | 30/300mV                              |
| Frequency of operation at nominal load                                      | 6 ops./min (0.1Hz)                    |
| Operate/release time max.   | typ. 3/1.5ms <sup>4)</sup>            |
| Electrical endurance  |                                       |
| at cyclic temperature -40/+23/+85°C and 13.5VDC and 120ms (on), 4.88s (off) |                                       |
| inductive load: L=0.5mH, 60A (on)/35A (off)                                 | >1x10 <sup>5</sup> ops. <sup>5)</sup> |
| resistive load: 40A (on)/40A (off)  | >1x10 <sup>5</sup> ops. <sup>5)</sup> |
| capacitive load 200A (on)/20A (off)   | >1x10 <sup>5</sup> ops. <sup>5)</sup> |

**Contact Data (continued)**

|                      |                         |
|----------------------|-------------------------|
| Mechanical endurance | >2x10 <sup>6</sup> ops. |
|----------------------|-------------------------|

- 1) Measured on 70x70x1.5mm epoxy PCB FR4 with 52cm<sup>2</sup> (double layer 140µm) copper area.
- 2) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5VDC for 12VDC load voltages.
- 3) See chapter Diagnostics of Relays in our Application Notes or consult the internet at <http://relays.te.com/appnotes/>
- 4) For unsuppressed relay coil. A low resistive suppression device in parallel to the relay coil increases the release time and reduces the lifetime caused by increased erosion and/or higher risk of contact tack welding (monostable version only).
- 5) Be aware of using right polarity, see Terminal Assignment. Wrong polarity will reduce endurance.

**Coil Data**

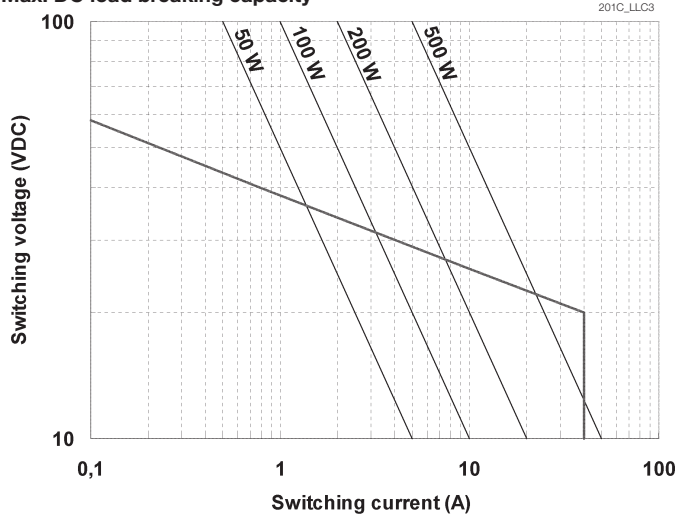
|                    |       |
|--------------------|-------|
| Rated coil voltage | 12VDC |
|--------------------|-------|

**Coil versions, DC coil**

| Coil code | Rated voltage VDC | Operate voltage VDC | Release voltage VDC | Coil resistance Ω±10% | Rated power mW |
|-----------|-------------------|---------------------|---------------------|-----------------------|----------------|
| 001/005   | 12                | 6.9                 | 1.5                 | 176                   | 818            |
| 009       | 10                | 5.6                 | 1.3                 | 120                   | 833            |

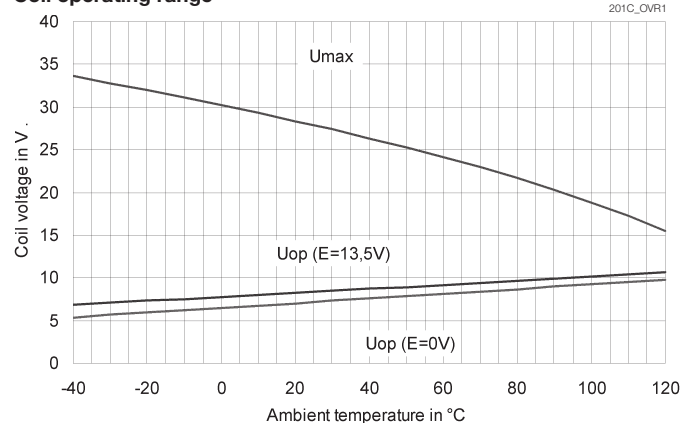
All figures are given for coil without pre-energization, at ambient temperature +23°C. Other coil voltages on request.

**Max. DC load breaking capacity**



Load limit curve: safe shutdown, no stationary arc/make contact.  
Load limit curves measured with low inductive resistors verified for 1000 switching events.

**Coil operating range**



Does not take into account the temperature rise due to the contact current  
E = pre-energization.

**Power Relay PK2 (THT – THR)** (Continued)

**Insulation Data**

|   |                       |
|---|-----------------------|
| Initial dielectric strength<br>between contact and coil | 500VAC <sub>rms</sub> |
|---|-----------------------|

**Other Data**

|  |  |
|--|--|
| EU RoHS/ELV compliance   | compliant  |
|  | THT: sealed type washable                                |
|  | THR: sealed type vented                                  |
| Ambient temperature, DC coil   | -40 to +105°C <sup>6)</sup>                              |
| Cold storage, IEC 60068-2-1  | 1000h; -40°C   |
| Dry heat, IEC 60068-2-2  | 1000h; +125°C  |
| Temperature cycling (shock),<br>IEC 60068-2-14, Na   | 1000 cycles, -40/+125°C,<br>dwell time 15min             |
| Category of environmental protection,<br>IEC 61810   | RT II - flux proof,<br>RT III - immersion cleanable      |
| Sealing test, IEC 60068-2-17   |  |
| THT  | Qc, method 2, 1min, 70°C                                 |
| THR  | vented   |
| Vibration resistance (functional),<br>IEC 68-2-6 (sine pulse form), 30 to 440Hz,<br>no change in the switching state >10µs | >20g   |
| Shock resistance (functional),<br>IEC 68-2-27 (half sine form single pulses)   |  |
| open NO contact will not close >10µs,  | 6ms >30g   |
| closed NO contact will not open >10µs  | 11ms >100g   |
| Terminal type  | PCB THT, PCB THR   |
| Weight   | approx. 11g (0.39oz)                                     |
| Solderability (aging 3: 4h/155°C)  |  |
| IEC 60068-2-20, THT  | Ta, method 1, hot dip 5s, 215°C                          |
| IEC 60068-2-58, THR  | Ta, method 1, hot dip 5s, 245°C                          |
| Resistance to soldering heat THT   |  |
| IEC 60068-2-20   | Tb, method 1A hot dip 10s, 260°C<br>with thermal screen  |
| Resistance to soldering heat THR   |  |
| IEC 60068-2-58   | Tb, method 1A hot dip 10s, 260°C<br>preheating min.130°C |
| Washing  | THT version  |
| Storage conditions   | according to IEC 600688 <sup>7)</sup>                    |
| Packaging unit   | 600 pcs.   |

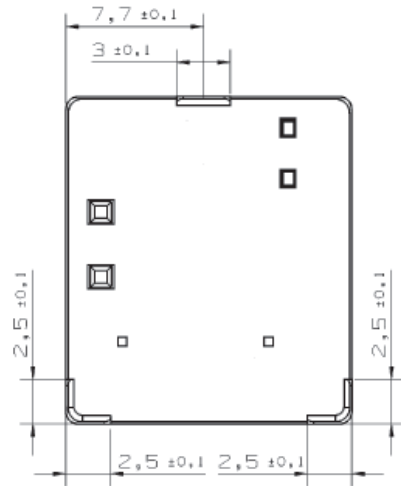
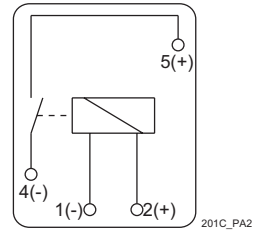
6) See graph: coil operating range.

7) For general storage and processing recommendations please refer to our Application Notes and especially to Storage in the Definitions or at <http://relays.te.com/appnotes/>

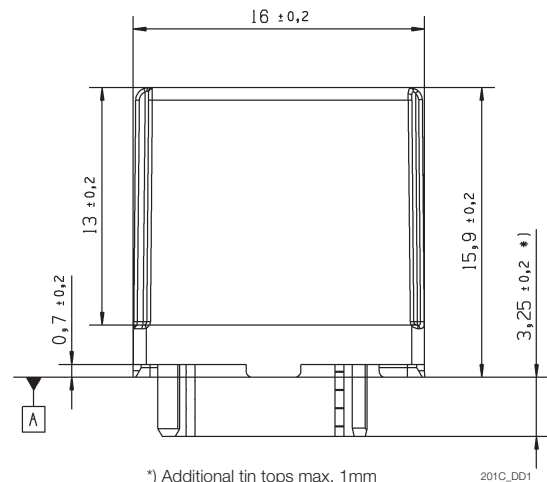
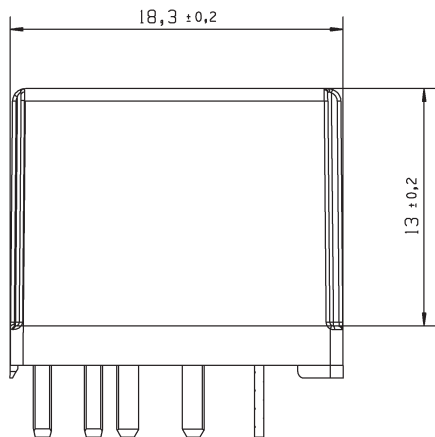
**Terminal Assignment**

Bottom view on solder pins

1 form A, 1 NO



**Dimensions**





单击下面可查看定价，库存，交付和生命周期等信息

[>>TE Connectivity\(泰科\)](#)