

**Power Relay K (Sealed)**

- Limiting continuous current 45A
- Wide voltage range

**Typical applications**

ABS control, blower fans, car alarm, cooling fan, engine control, fuel pump, hazard warning signal, heated front screen, heated rear screen, ignition, lamps front/rear/fog light, interior lights, main switch/supply relay, seat control, seatbelt pretensioner, sun roof, turn signal, valves, window lifter, wiper control.

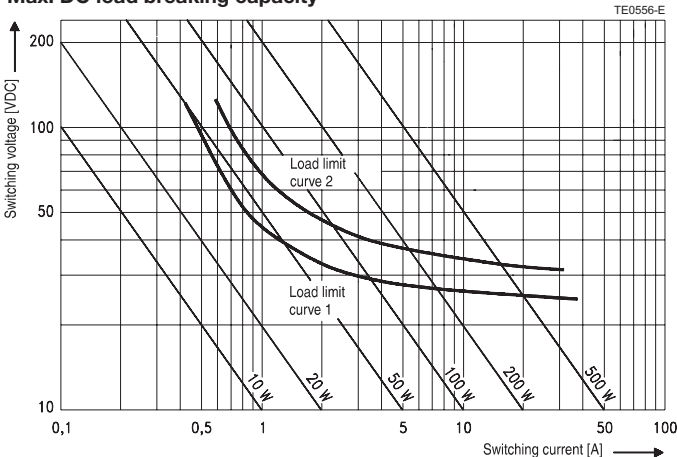


**Contact Data**

Typical applications	Resistive/inductive loads	Headlights capacitive loads
Contact arrangement	1 form C, 1 CO	
Rated voltage	12VDC	12VDC
	A/B (NO/NC)	
Rated current	45/30A	40/25A
Limiting continuous current <sup>1)</sup>		
23°C	45/30A	40/25A
85°C	30/25A	25/20A
Limiting making current <sup>2)</sup>	100/30A	180/60A
Limiting breaking current <sup>3)</sup>	60/30A	60/30A
Contact material	AgNi0.15	SgSnO <sub>2</sub>
Min. recommended contact load	1A at 5VDC <sup>4)</sup>	
Initial voltage drop, at 10A, typ./max.	20/300mV	
Operate/release time	typ. 5/3ms <sup>5)</sup>	
Electrical endurance	>2x10 <sup>5</sup> ops. at 13.5VDC, 40A	>10 <sup>5</sup> ops. up to 4x60W
Mechanical endurance, DC coil	>10 <sup>7</sup> ops.	

- 1) Measured on 70x70x1.5mm epoxy PCB FR4 with 35cm<sup>2</sup> (double layer 105µm) copper area. Cable cross section 6mm<sup>2</sup>. Boundary conditions: 180°C coil temperature; 130°C solder joint. Solder joint results above 130°C on request. The load circuit shall withstand current applied on 40A MAXI fuse.
- 2) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5VDC load voltages.
- 3) For a load current duration of maximum 3s for a make/break ratio of 1:10.
- 4) See chapter Diagnostics of Relays in our Application Notes or consult the internet at <http://relays.te.com/appnotes/>
- 5) 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.

**Max. DC load breaking capacity**



Load limit curve 1: arc extinguishes, during transit time (changeover contact).  
Load limit curve 2: safe shutdown, no stationary arc (make contact).  
Load limit curves measured with low inductive resistors verified for 1000 switching events.

**Coil Data**

Rated coil voltage	12VDC				
<b>Coil versions, DC coil</b>					
Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power W
001	12	6.9	1.2	90	1.6

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

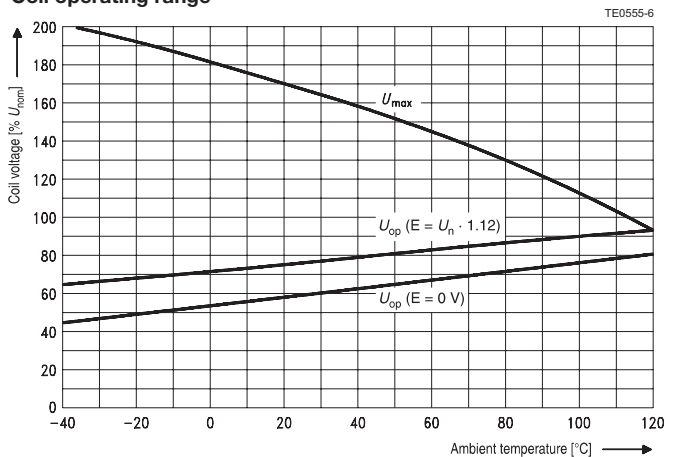
**Insulation Data**

Initial dielectric strength	
between open contacts	500VAC <sub>rms</sub>
between contact and coil	500VAC <sub>rms</sub>

**Other Data**

EU RoHS/ELV compliance	compliant
Ambient temperature, DC coil	-40 to +85°C <sup>6)</sup>
Climatic cycling with condensation, EN ISO 6988	3 cycles, storage 8/16h
Temperature cycling (shock), IEC 60068-2-14, Na	20 cycles, -40/+85°C (dwell time 1h)
Damp heat cyclic, IEC 60068-2-30, Db, Variant 1	6 cycles, upper air temperature 55°C

**Coil operating range**



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

**Power Relay K (Sealed)** (Continued)

**Other Data** (continued)

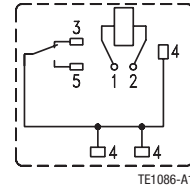
Damp heat constant, IEC 60068-2-3, method Ca	56 days, upper air temperature 55°C RT III – immersion cleanable version
Corrosive gas, IEC 60068-2-42	10 days
IEC 60068-2-43	10 days
Vibration resistance (functional), IEC 60068-2-6 (sine pulse form), acceleration, acc. to position	10 to 200Hz, 20 to 40g <sup>7)</sup>
Shock resistance (functional), IEC 60068-2-27 (half sine form single pulses), acceleration, acc. to position	8ms 30g <sup>7)</sup>
Terminal type	PCB
Weight	
sealed version	approx. 22g (0.77oz)
open version	approx. 19g (0.67oz)
Solderability (aging 3: 4h/155°C)	
for leaded process (T <sub>m</sub> = 183°C), IEC 60068-2-20	T <sub>a</sub> , method 1, hot dip 5s, 215°C
for Pb-free process (T <sub>m</sub> = 217°C), IEC 60068-2-20	according IEC 600688 <sup>8)</sup>
Storage conditions	
Packaging unit	
sealed version	525 pcs.

- 6) See coil operating range DC.
- 7) No change in the switching state >10µs.
- 8) 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/>

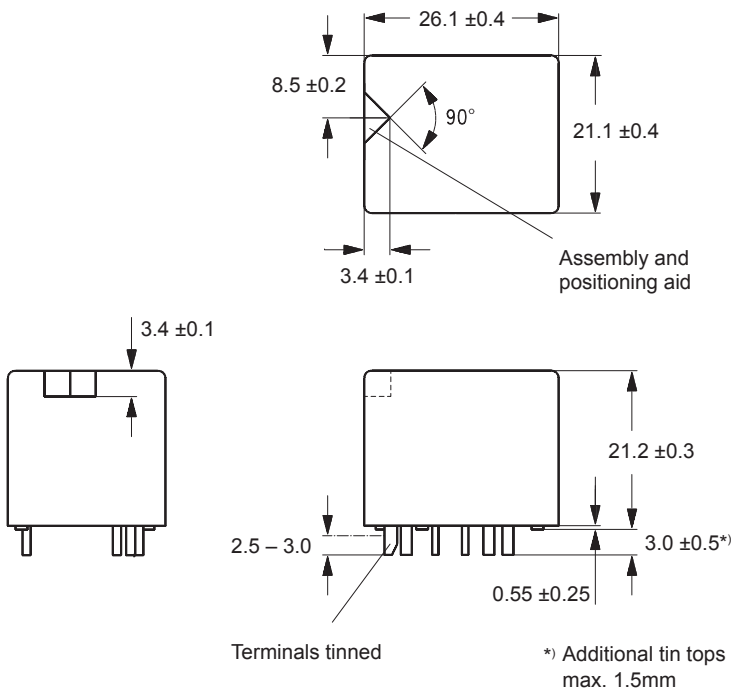
**Terminal Assignment**

Bottom view on solder pins

1 form C, 1 CO

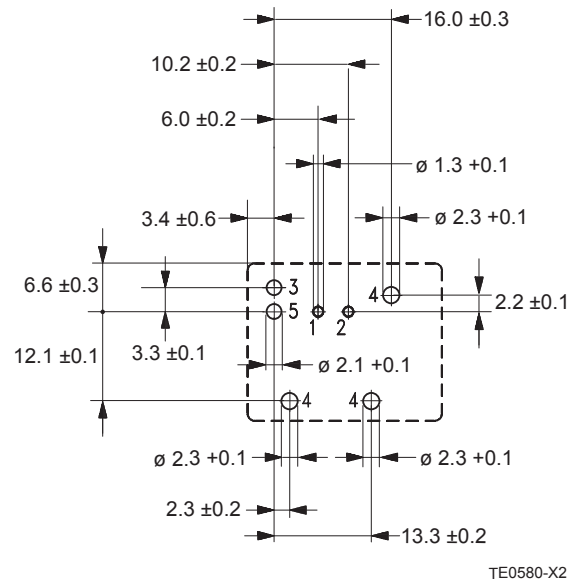


**Dimensions**



**Mounting Hole Layout**

Bottom view on solder pins



**Power Relay K (Sealed)** (Continued)

<b>Product code structure</b>		Typical product code		<b>V23076</b>	<b>-A</b>	<b>1</b>	<b>001</b>	<b>-C</b>	<b>13</b>	<b>3</b>
<b>Type</b>	<b>V23076</b> Power Relay K, sealed									
<b>Terminal</b>	<b>A</b> PCB									
<b>Design</b>	<b>1</b> Single relay									
<b>Coil</b>	<b>001</b> 12VDC									
<b>Contact type</b>	<b>C</b> Single contact				<b>D</b> Single contact					
<b>Contact material</b>	<b>13</b> AgNi0.15				<b>14</b> AgSnO <sub>2</sub>					
<b>Contact arrangement</b>	<b>3</b> 1 form C, 1 CO									

Product code	Terminal/Encl.	Design	Coil	Contact	Contact mat.	Arrangement	Part number
V23076-A1001-C133	PCB, sealed	Single relay	12VDC	Single	AgNi0.15	1 form C, CO	1393277-4
V23076-A1001-D143					AgSnO <sub>2</sub>		1393277-6

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