

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.



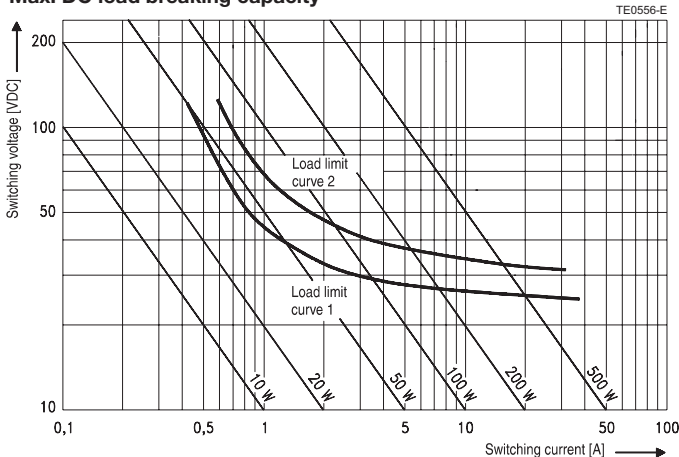
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Contact Data

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 ¹⁾		
23°C	45/30A	40/25A
85°C	30/25A	25/20A
Limiting making current ²⁾	100/30A	180/60A
Limiting breaking current ³⁾	60/30A	60/30A
Contact material	AgNi0.15	SgSnO ₂
Min. recommended contact load	1A at 5VDC ⁴⁾	
Initial voltage drop, at 10A, typ./max.	20/300mV	
Operate/release time	typ. 5/3ms ⁵⁾	
Electrical endurance	>2x10 ⁵ ops. at 13.5VDC, 40A	>10 ⁵ ops. up to 4x60W
Mechanical endurance, DC coil	>10 ⁷ ops.	

- 1) Measured on 70x70x1.5mm epoxy PCB FR4 with 35cm² (double layer 105µm) copper area. Cable cross section 6mm². 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
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Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance $\Omega \pm 10\%$	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.

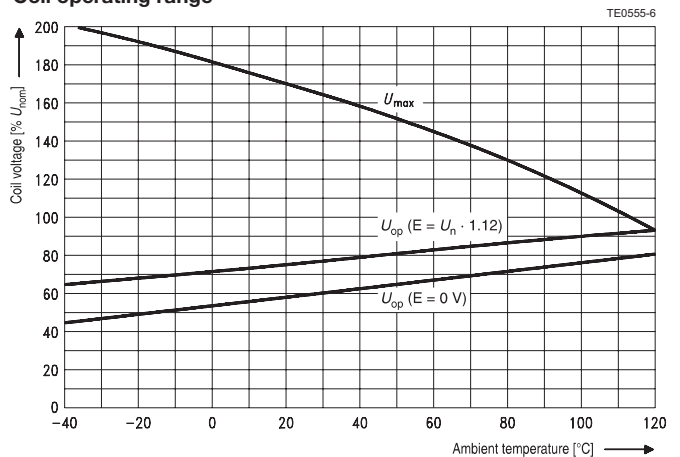
Insulation Data

Initial dielectric strength	
between open contacts	500VAC _{rms}
between contact and coil	500VAC _{rms}

Other Data

EU RoHS/ELV compliance	compliant
Ambient temperature, DC coil	-40 to +85°C ⁶⁾
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 ⁷⁾
Shock resistance (functional), IEC 60068-2-27 (half sine form single pulses), acceleration, acc. to position	8ms 30g ⁷⁾
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 _m = 183°C), for Pb-free process (T _m = 217°C), IEC 60068-2-20	Ta, method 1, hot dip 5s, 215°C according IEC 600688 ⁸⁾
Storage conditions	
Packaging unit sealed version	525 pcs.

6) See coil operating range DC.

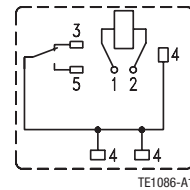
7) No change in the switching state >10µs.

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

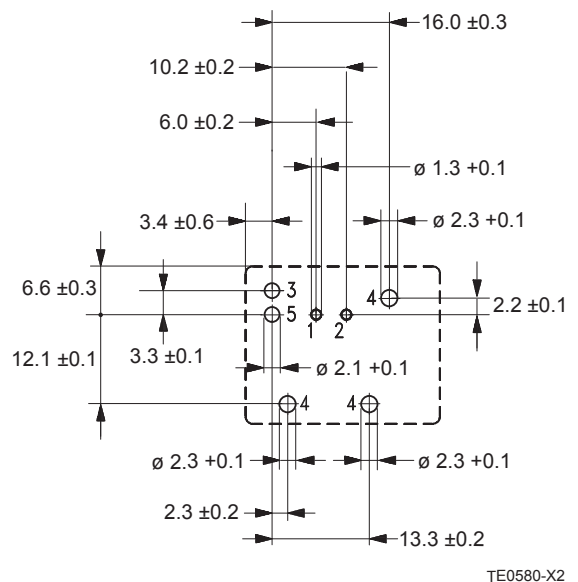
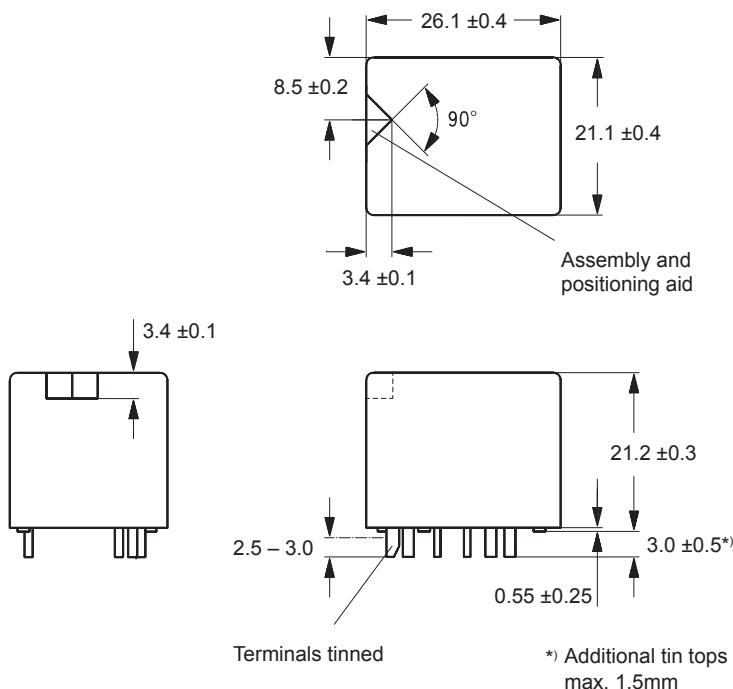
1 form C, 1 CO



Dimensions

Mounting Hole Layout

Bottom view on solder pins



Power Relay K (Sealed) (Continued)

Product code structure

Typical product code

V23076	-A	1	001	-C	13	3
Type						
V23076 Power Relay K, sealed						
Terminal						
A PCB						
Design						
1 Single relay						
Coil						
001 12VDC						
Contact type						
C Single contact D Single contact						
Contact material						
13 AgNi0.15 14 AgSnO ₂						
Contact arrangement						
3 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 ₂		1393277-6