Double Micro Relay K (THT – THR)

- **Small power relay**
- **Limiting continuous current 30A**
- **Minimal weight**
- **Low noise operation**
- **Wave (THT) and reflow (THR/pin-in-paste) solderable versions**
- **For single version refer to Single Micro Relay K**

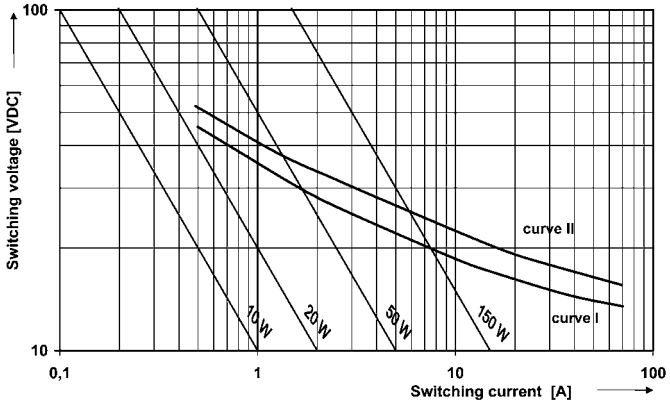
086C/R2_fcw1b

Typical applications
Car alarm, door control, door lock, hazard warning signal, heated front/rear screen, immobilizer, lamps front/rear/fog light, interior lights, seat control, sun roof, turn signal, window lifter, wiper control.

Contact Data

Contact arrangement	2 form C, 2 CO
Rated voltage	10/12VDC
Rated current, form A/form B	NO/NC 30A/25A
Limiting continuous current, form A/form B	
23°C	30/25A
85°C	20/15A
Limiting making current	40A[1)]
Limiting breaking current	30A
Contact material	$AgSnO_2$
Min. recommended contact load	1A at 5VDC[2)]
Initial voltage drop at 10A, typ./max.	30/300 mV
Operate/release time	typ. 3/1.5ms[3)]
Electrical endurance	
-40°C, +25°C, +85°C and 14 VDC, form C (CO), cyclic temperature	
motor reverse blocked, 25A, 0.77mH	>1x10^5 ops.
wiper 25A make/5A break, generator peak -20A on NC, L=1.0mH	>1x10^6 ops.
form A contact (NO), cyclic temperature	
resistive 20A	>3x10^5 ops.

Max. DC load breaking capacity



Load limit curve I: safe shutdown, arc extinguishes during transit time.
Load limit curve II: safe shutdown, no stationary arc.
Load limit curves measured with low inductive resistors verified for 1000 switching events.

Contact Data (continued)

Mechanical endurance	> 5x10^6 ops.

1) The values apply to a resistive or inductive load with suitable spark suppression and at maximum 13.5VDC for 12VDC load voltages.For a load current duration of maximum 3s for a make/break ratio of 1:10.
2) See chapter Diagnostics of Relays in our Application Notes or consult the internet at http://relays.te.com/appnotes/
3) Measured at nominal voltage without coil suppression unit. 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

Coil Data

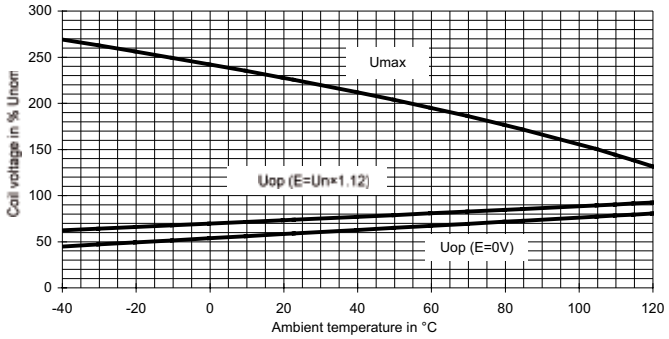
Rated coil voltage	12VDC

Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance Ω±10%	Rated coil power mW
001	12	6.9	1.5	254	567
002	10	5.7	1.25	181	552

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

Coil operating range



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

Insulation Data

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

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Double Micro Relay K (THT – THR) (Continued)

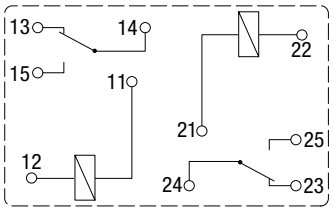
Other Data	
EU RoHS/ELV compliance	compliant
Ambient temperature	-40 to +105°C
Cold storage, IEC 60068-2-1	1000h; -40°C
Dry heat, IEC 60068-2-2	1000h; +125°C
Climatic cycling with condensation, EN ISO 6988	20 cycles, storage 8/16 h
Temperature cycling (shock), IEC 60068-2-14, Na	100 cycles; -40/+125°C
Temperature cycling, IEC 60068-2-14, Nb	35 cycles; -40/+125°C
Damp heat cyclic, IEC 60068-2-30, Db, Variant 1	6 cycles 25°C/55°C/93%RH
Damp heat constant, IEC 60068-2-3 method Ca	56 days 40°C/95%RH
Degree of protection	
THT:	RT III (61810), IP67 (IEC 60529)
THR:	RT II (61810), IP56 (IEC 60529)
Corrosive gas, IEC 60068-2-17: THT	Qc, method 2, 1min, 70°C
IEC 60068-2-42	10 days
IEC 60068-2-43	10 days
Vibration resistance (functional) IEC 60068-2-6 (sine sweep)	10 to 500Hz; 6g[6]
Shock resistance (functional) IEC 60068-2-27 (half sine)	6ms, up to 30g[6]
Terminal type	PCB:THT, THR
Weight	approx. 8g (0.28oz)
Solderability (aging 3: 4h/155°C) THT, IEC 60068-2-20	Ta, method 1, hot dip 5s, 215°C
Resistance to soldering heat THT, IEC 60068-2-20	Tb, method 1A, hot dip 10s, 260°C, with thermal screen
Resistance to soldering heat THR, IEC 60068-2-58	260°C; preheating min 130°C
Storage conditions	according IEC 600688 [7]
Packaging unit	990 pcs.

6) Depending on mounting position: no change in the switching state >10µs.

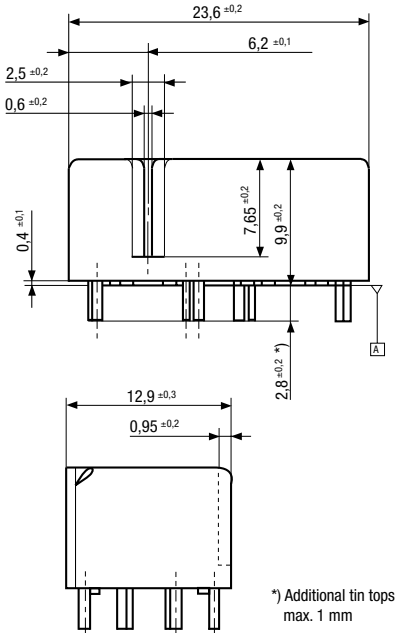
7) For general storage and processing recommendations please refer to our Application Notes and especially to Storage in the Definitions or at http://relays.te.com/appnotes/

Terminal Assignment
Bottom view on solder pins

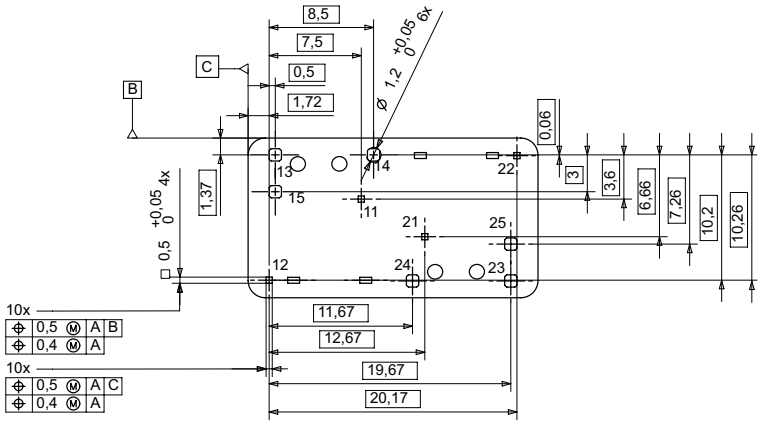
2 form C, 2 CO



Dimensions
Double Micro Relay THT



View of the Terminals
Bottom view on solder pins



Remark:
Positional tolerances according to DIN EN ISO 5458

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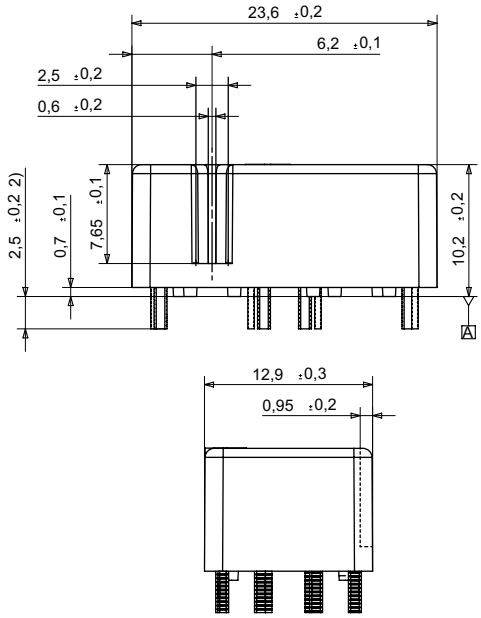
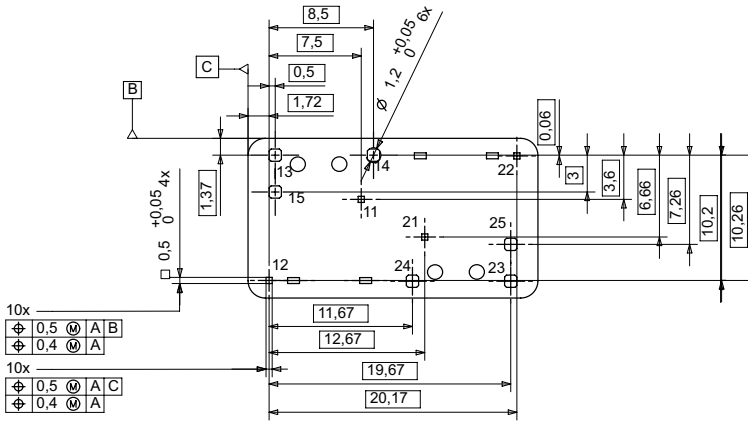
Double Micro Relay K (THT – THR) (Continued)

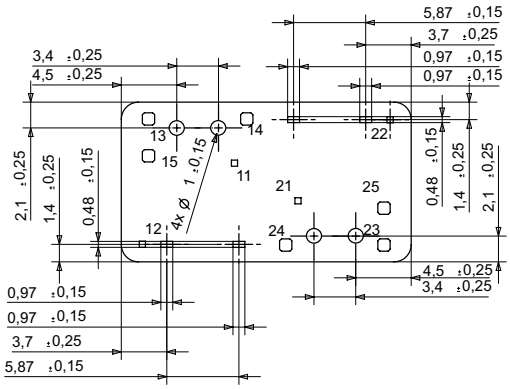
Dimensions
Double Micro Relay THR



View of the Terminals
Bottom view on solder pins



View of Stand-Offs
Bottom view on solder pins



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Double Micro Relay K (THT – THR) (Continued)

Product code structure

Typical product code	**V23086**	**-C**	**20**	**01**	**-A**	**4**	**03**

Type
V2086 Micro Relay K (THT-THR)

Terminal and enclosure
C PCB version THT, sealed **R** PCB version THR, vented

Design
20 Double relay (THT) **28** Double relay (THR)

Coil
01 Standard **02** Sensitive

Contact type
A Single contact

Contact material index
4 AgSnO2 standard **8** Wiper load

Contact arrangement index
03 form C (CO)

Product code	Terminal/Encl.	Design	Coil	Contact	Cont. material	Arrangement	Part number
V23086-C2001-A403	PCB THT, imm., clean	Double relay	Standard	Single	$AgSnO_2$	2 form C, 2 CO (standard)	1413009-9
V23086-R2801-A403	PCB THR, vented						6-1414920-1
V23086-R2802-A803			Sensitive			2 form C, 2 CO (wiper load)	8-1414964-5

This list represents the most common types and does not show all variants covered by this datasheet.
Other types on request.

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