

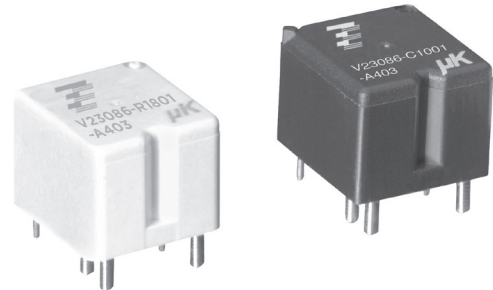


THE DATASHEET OF
1-1414760-0



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 twin version refer to Double Micro Relay K



086C/R1_fw1b

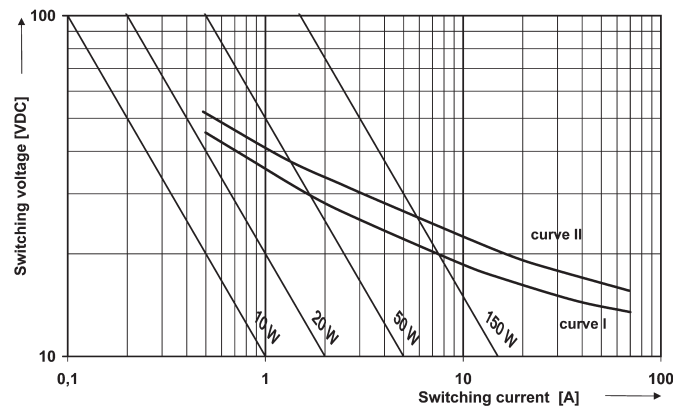
Typical applications

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

Typical applications	Resistive/inductive load V23086-*100*-A403	Wiper load V23086-*1*02-A803	Lamp load ⁵⁾ V23086-***21-A502
Contact arrangement	1 form C, 1 CO	1 form C, 1 CO	1 form A, 1 NO
Rated voltage	10/12VDC	10/12VDC	10/12VDC
Rated current	NO/NC 30/25A	NO/NC 30/25A	30A
Limiting continuous current			
23°C	30/25A	30/25A	30A
85°C	20/15A	20/15A	20A
Limiting making current	40A ¹⁾	40A ¹⁾	100A ²⁾
Limiting breaking current	30A	30A	30A
Contact material		AgSnO ₂	
Min. recommended contact load		1A at 5VDC ³⁾	
Initial voltage drop at 10A, typ./max.		30/300mV	
Operate/release time		typ. 3/1.5ms ⁴⁾	
Electrical endurance			
cyclic temperature -40°C, +25°C, +85°C			
form C contact (CO) at 14VDC	motor reverse blocked, 25A, 0.77mH >1x10 ⁵ ops.	wiper, 25A make/5A break, generator peak, 20A on NC, 1mH >1x10 ⁶ ops.	
form A contact (NO) at 14VDC	resistive 20A >3x10 ⁵ ops.		lamp 100A inrush, 10A steady state >1x10 ⁵ ops. ⁵⁾
Mechanical endurance		>5x10 ⁶ ops.	

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.

- 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) Corresponds to the peak inrush current on initial actuation (cold filament).
- 3) See chapter Diagnostics of Relays in our Application Notes or consult the internet at <http://relays.te.com/appnotes/>
- 4) 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.
- 5) Be aware of using right polarity, see Terminal Assignment. Wrong polarity will reduce endurance.

Micro Relay K (THT – THR) (Continued)

Coil Data

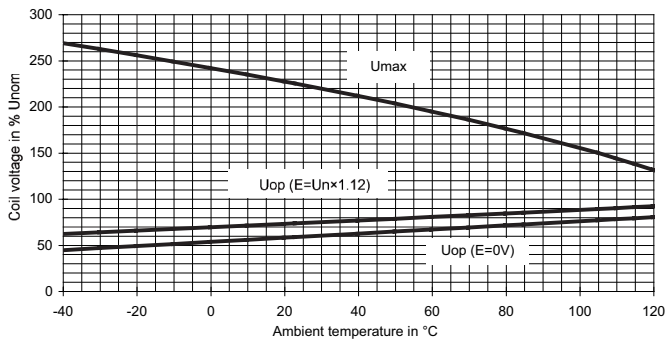
Rated coil voltage	12VDC
--------------------	-------

Coil versions, DC coil

Coil code	Rated voltage VDC	Operate voltage VDC	Release voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power mW
001/801	12	6.9	1.5	254	567
002/802	10	5.7	1.25	181	552
021/821	10	6.9	1.5	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}

Other Data

EU RoHS/ELV compliance	compliant
Ambient temperature, DC coil	-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 8/16h
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)
Sealing test, IEC 60068-2-17: THT	Qc, method 2, 1min, 70°C
Corrosive gas	
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. 4g (0.14oz)
Solderability (aging 3: 4h/155°C) THT	
IEC 60068-2-20	Ta, method 1, hot dip 5s, 215°C
Solderability THR	
IEC60068-2-58	hot dip 5s 245°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	2000 pcs.

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

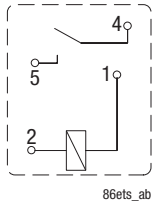
7) For general storage and processing recommendations please refer to our Application Notes and especially to Storage in the Definitions or at <http://relays.te.com/appnotes/>

Micro Relay K (THT – THR) (Continued)

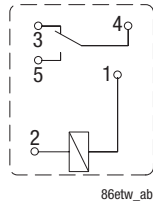
Terminal Assignment

Bottom view on solder pins

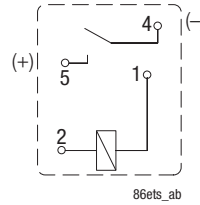
1 form A, 1 NO



1 form C, 1 CO

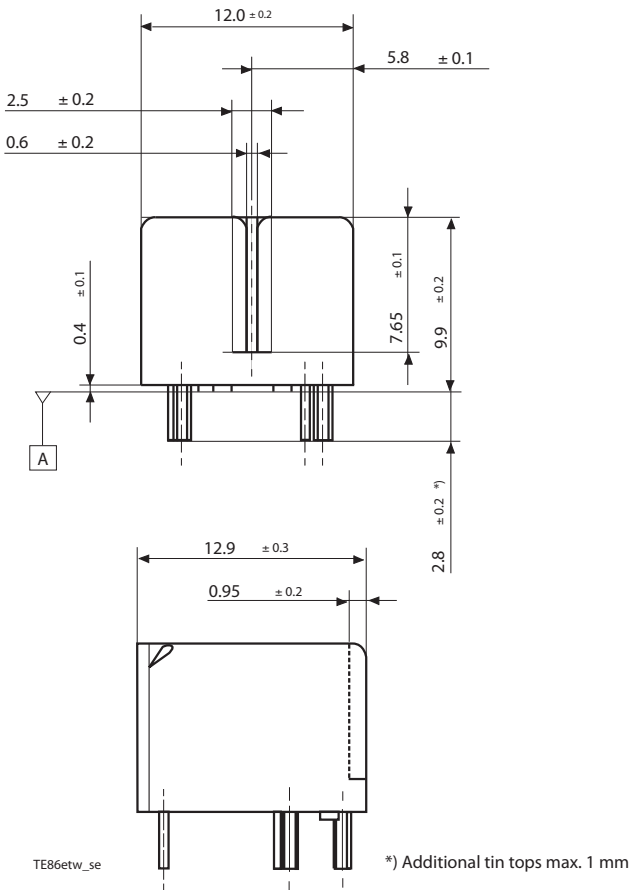


1 form A, 1 NO (lamp load)



Dimensions

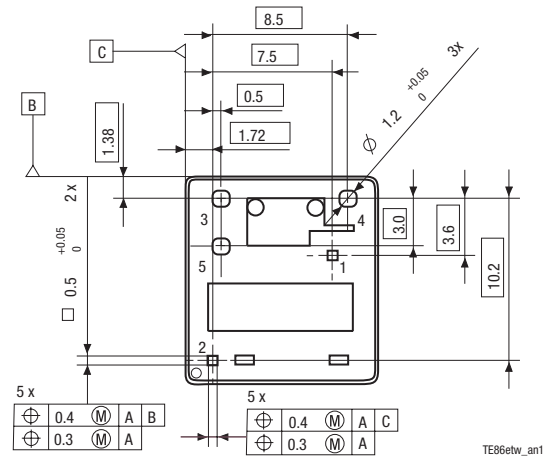
Micro Relay K, THT version



*) Additional tin tops max. 1 mm

Mounting Hole Layout

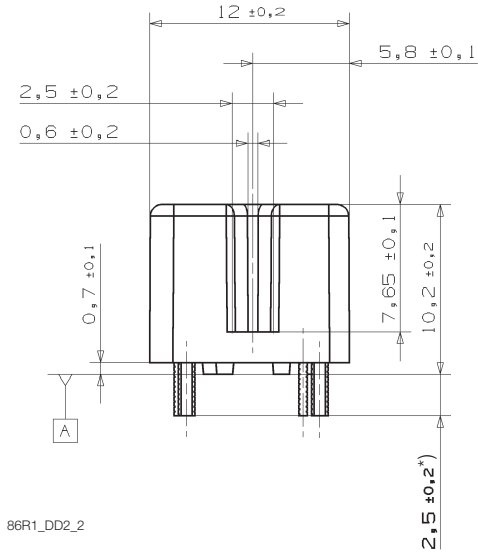
Bottom view on solder pins



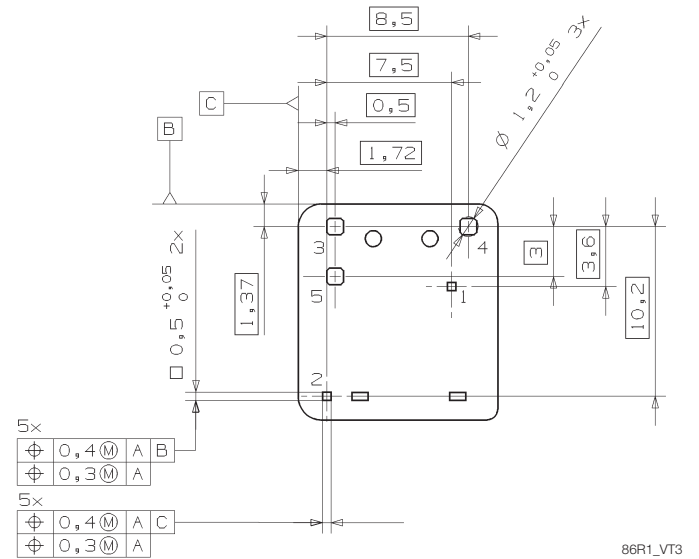
Remark: Positional tolerances according to DIN EN ISO 5458

Micro Relay K (THT – THR) (Continued)

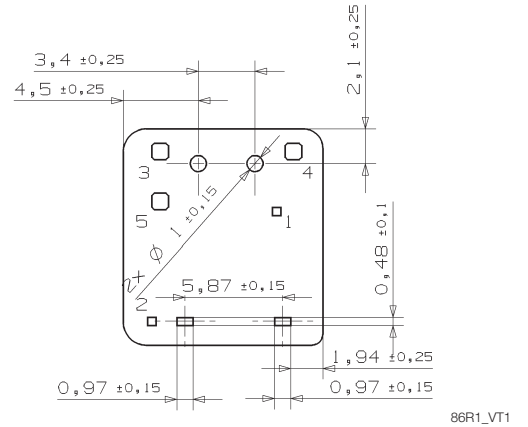
Micro Relay K, THR version



Mounting Hole Layout
Bottom view on solder pins



View of Stand-Offs
Bottom view on solder pins



*) Additional tin tops max. 1mm

Micro Relay K (THT – THR) (Continued)

Product code structure		Typical product code		V23086	-C	1	001	-A	4	03
Type										
V23086 Micro Relay K (THT – THR)										
Terminal and enclosure										
C		PCB version THT, sealed		R		PCB version THR, vented				
Design										
1		Single relay								
Coil										
001		Standard (THT)		002		Sensitive (THT)				
801		Standard (THR)		802		Sensitive (THR)				
021		Special (THT)		821		Special (THR)				
Contact type										
A		Single contact								
Contact material index										
4		AgSnO ₂ standard		8		AgSnO ₂ wiper load				
5		AgSnO ₂ lamp load								
Contact arrangement index										
02		NO		03		CO				

Product code	Version	Design	Coil	Contact	Cont. material	Arrangement	Part number
V23086-C1021-A502	PCB THT,	Single	Standard	Single	AgSnO ₂	1 form A, 1 NO (lamp)	8-1416000-7
V23086-C1001-A403	cleanable					1 form C, 1 CO (standard)	0-1393280-6
V23086-C1002-A803			Sensitive			1 form C, 1 CO (standard)	2-1414987-3
V23086-R1801-A403	PCB THR,	vented	Standard			1 form C, 1 CO (standard)	6-1414920-0
V23086-R1802-A803			Sensitive			1 form C, 1 CO (wiper)	7-1414967-8
V23086-R1821-A502			Standard			1 form A, 1 NO (lamp)	6-1414918-8

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

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View 1-1414760-0 on WIN SOURCE](#)

 [TE Connectivity](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management