

Micro Relay K Latching

- Smallest magnetically latched PBC relay
- Only set and reset pulse no continuous coils power required
- Increased ambient temperature range up to 125°C
- Limiting continuous current up to 40A
- Footprint compatible with Micro Relay K
- Two coils with set and reset function
- Minimal weight
- For monostable single version refer to Micro Relay K
- For monostable twin version refer to Double Micro Relay K

Typical applications

Active power management, energy management, main switch/supply relay, quiescent current management

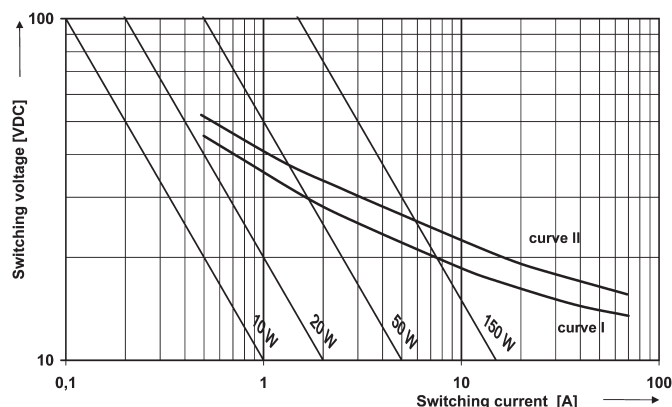


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Contact Data	auxiliary cont.	main cont.
	auxiliary contact: pin 3-4	main contact: pin 5-4
Contact arrangement	1 form C, 1 CO	
Rated voltage	12VDC	
Rated current	20A	40A
Limiting continuous current		
23°C	20A	40A
85°C	15A	30A
Limiting making current	20A ¹⁾	50A ¹⁾²⁾
Limiting breaking current	20A	30A
Contact material	AgSnO ₂	
Min. recommended contact load	1A at 5V ³⁾	
Initial voltage drop at 10A, typ./max.	30/300mV	
Operate/release time max.	1.5/1.5ms ⁴⁾	
Electrical endurance, resistive 20A (on)/20A (off), on 1s/off 1s at +85°C	>1x10 ⁵ ops.	
Mechanical endurance, DC coil	>1x10 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.
- 2) Corresponds to the peak inrush current on initial actuation (cold filament).
- 3) See chapter Diagnostics of Relays in our Application Notes page 31 or consult the internet at <http://relays.te.com/appnotes/>
- 4) For unsuppressed relay coil.

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.

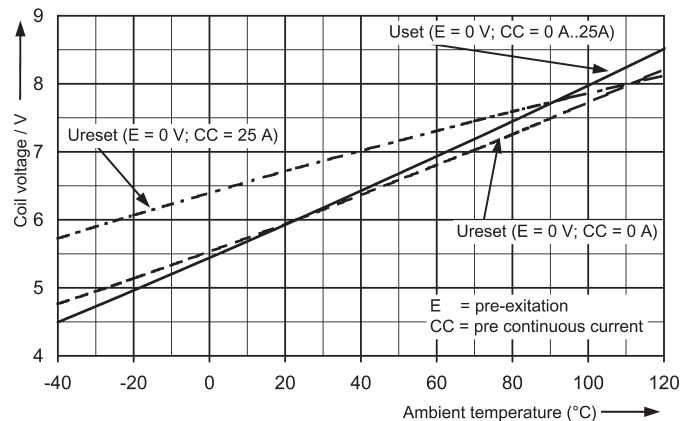
Coil Data	12VDC					
Rated coil voltage	12VDC					
Polarity for set/reset energization	Set	Reset				
pin	+ 0V na.	+ 0V na.	+ 0V na.	+ 0V na.	+ 0V na.	
	1 2 6	1 2 6	1 2 6	1 2 6	1 2 6	
Min./Max energization duration	5ms < pulse width < 1s					

Coil versions, bistable 1 coil

Coil code	Rated voltage VDC	Set voltage VDC	Reset voltage VDC	Coil resistance $\Omega \pm 10\%$	Rated coil power W
251	12	6	6	75	1.92

All figures are given for coil without pre-energization, at ambient temperature +23°C. Overvoltage according to ISO 16750-2 functional status C. In case of a reset latch pulse up to 28VDC the contact may reclose, but will not remain closed (no latching function). The delay between driving impulses at cyclic energizing at T_{Amb}=85°C must be at least 10s.

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}

Micro Relay K Latching (Continued)

Other Data

EU RoHS/ELV compliance	compliant
Ambient temperature	-40 to +125°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	6 cycles, storage 8/16 h
Temperature cycling, IEC 60068-2-14, Nb	10 cycles; -40/+85°C (5°C/min)
Damp heat cyclic, IEC 60068-2-30, Db, Variant 1	6 cycles upper air temperature +55°C
Damp heat constant, IEC 60068-2-3 method Ca	56 days
Degree of protection	
THT:	RT III (61810), IP67 (IEC 60529)
Vibration resistance (functional), IEC 60068-2-6 (sine sweep)	10 to 2000 Hz ⁵⁾ , main contact 10g, 10 to 500Hz, auxiliary contact 60g
Shock resistance (functional), IEC 60068-2-27 (half sine), 6ms ⁵⁾ , main contact 100g	auxiliary contact 30g
Weight	approx. 4g (0.14oz)
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	Td, method 1A, hot dip 10s, 260°C with thermal screen according IEC 600688 ⁶⁾
Storage conditions	
Packaging unit	2000 pcs.

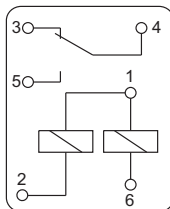
5) No change in the switching state >10µs.

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

Terminal Assignment

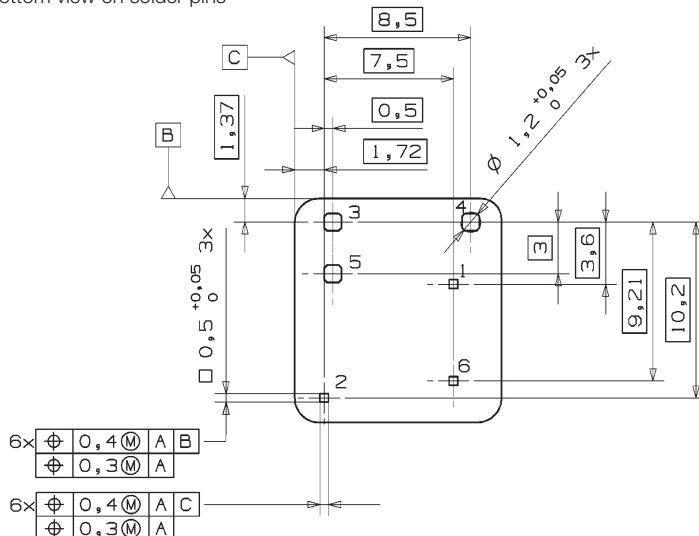
Bottom view on solder pins

1 form C, 1 CO

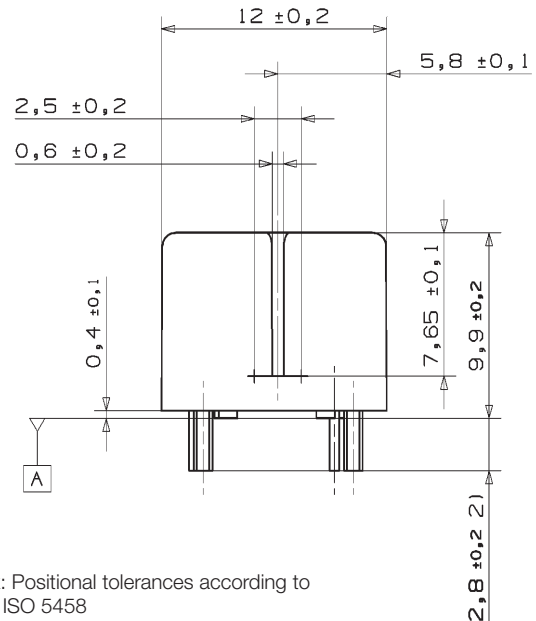


Mounting Hole Layout

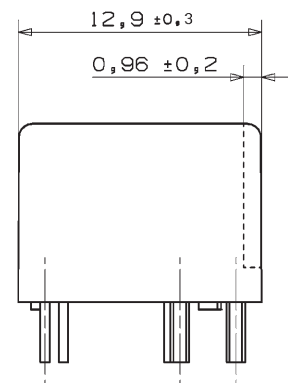
Bottom view on solder pins



Dimensions



Remark: Positional tolerances according to DIN EN ISO 5458



**) Epoxy height at terminals max. 0.7mm

Micro Relay K Latching (Continued)

Product code structure		Typical product code							
Type	V23086 Micro Relay K Latching								
Terminal and enclosure	L Latching version THT, sealed								
Design	1 Single relay								
Coil	251 12VDC								
Contact type	A Single contact								
Contact material index	4 AgSnO ₂								
Contact arrangement index	03 Form C (CO)								

Product code	Version	Design	Coil	Contact	Cont. material	Arrangement	Part number
V23086-L1251-A403	PCB, immersion cleanable	Single relay	Standard	Single	AgSnO ₂	1 form C, 1 CO	8-1416000-9