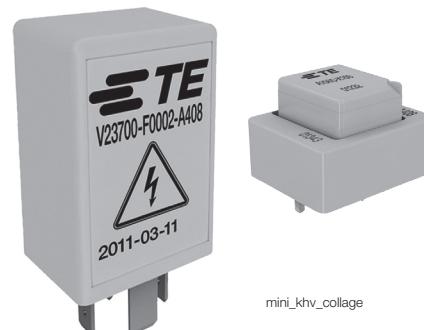


Mini K HV

- Suitable for voltage levels up to 450VDC
- Precharge currents up to 20A
- Limiting break currents up to 20A
- Available with PCB and plug-in terminals

Typical applications

DC high voltage pre-charge applications in hybrid, full battery electric vehicles and fuel-cell cars.



mini_khv_collage

Contact Data

Contact arrangement	1 form X (NO DM)
Rated voltage	400VDC
Max. switching voltage ¹⁾ / power	450VDC / 9kW
Limiting switching current ²⁾	
normal operation	20A on/0A off: min. 10 ⁵ ops.
fault break operation ³⁾	20A on/20A off: min. 10 ops. ³⁾⁴⁾
Initial contact voltage drop at 10A	typ. 150mV, max. 300 mV
Operate time at nominal voltage	typ. 2.5ms
Release time ⁵⁾	typ. 1ms
Mechanical endurance	>10 ⁷ ops.

1) Consult TE Connectivity for insulation compatibility with higher voltages.

2) Load circuit L/R <14μs.

3) After 10 fault break operations relay must be replaced.

4) Test conditions: on-time 100ms, off-time 10s.

5) Valid for recommended 250Ω suppression resistor (PCB version).

Note: A low resistive suppression device in parallel to the relay coil increases the release time and reduces the lifetime due to increased erosion and / or higher risk of contact tack welding.

Coil Data

Nominal voltage	12V
Min./Max. energization duration	max. 2s ⁶⁾
Max. coil temperature	155°C

6) Max. continuous activation time is limited and depends on operating conditions.
Please contact TE Connectivity for details.

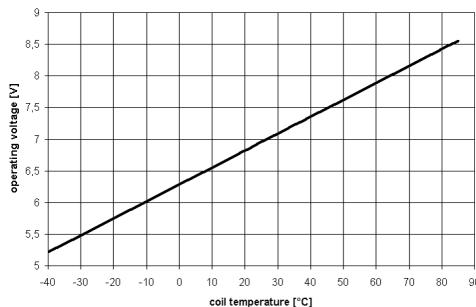
Coil versions

Coil code	Rated voltage VDC	Operate voltage VDC ⁷⁾	Release voltage VDC ⁷⁾	Coil resistance Ω±10%	Rated coil power W
001	12	6.9	1.2	50	2.9
002 ⁸⁾	12	6.9	1.2	41.6	3.5

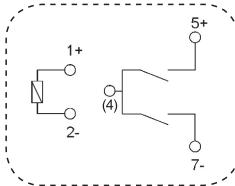
7) All values are given for coil without pre-energization, at ambient temperature +23°C.

8) Coil suppression resistor already included in the relay. No additional suppression component allowed.

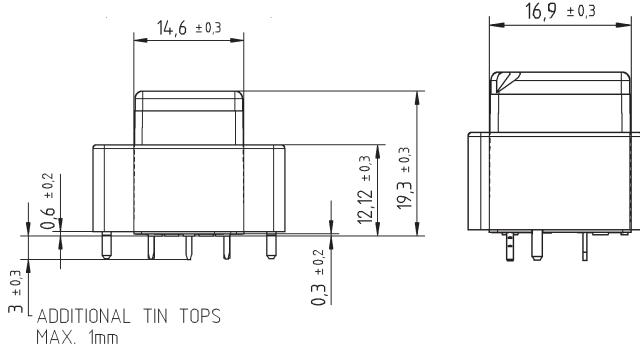
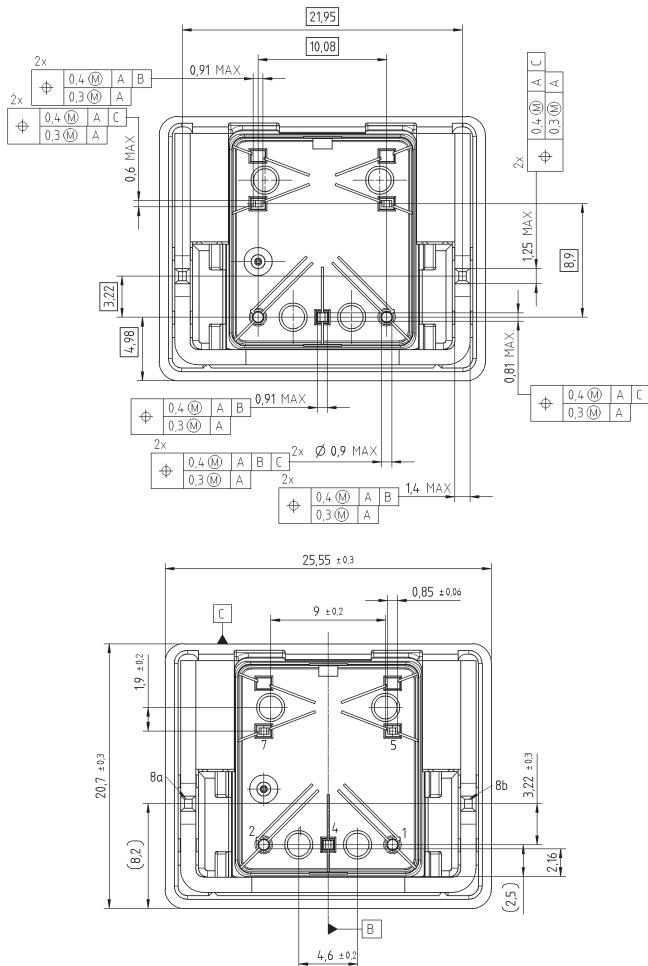
Coil operating range

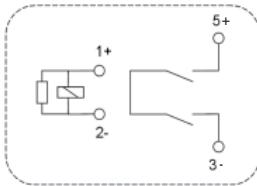


Mini K HV (Continued)
Terminal Assignment

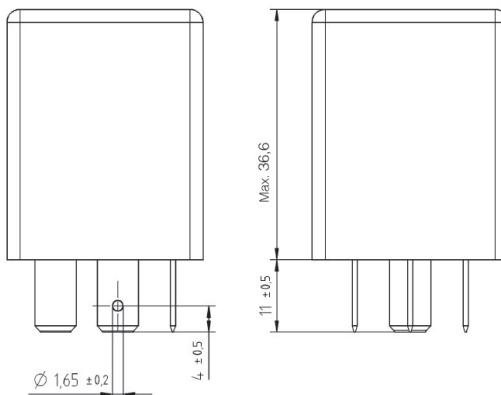
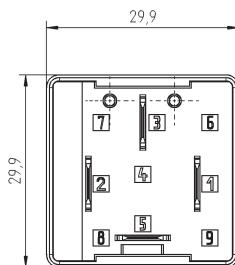
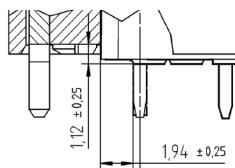
 1 form X (NO DM)
PCB version

Dimensions

PCB version


View of the Terminals (bottom view)

Terminal Assignment

 1 form X (NO DM) with resistor
Plug-in version

Dimensions

Plug-in version


View of the Terminals (bottom view)

Detail PCB version: minimum clearance requirements (see note below)

Notes regarding PCB-layout and terminal assignment:

- Pin 4 must not be electrically connected, no solder eye at that pin is allowed, only a drill-hole without via
- Potential assignment of pins:
 - pins 1; 2: low voltage (LV)
 - pins 5; 7; 4(*) high voltage (HV)
 - pin 8a; 8b: no potential but internally connected

(*) pin 4 is on HV potential in ON-state of relay only.

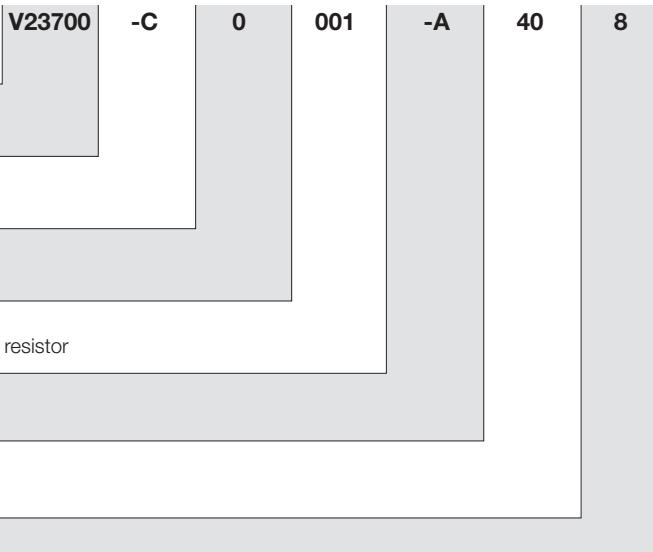
Notes regarding clearance and creepage distances:

- The required clearance and creepage distances between HV and LV potential must be ensured.
- Layout of the PCB has to ensure min. clearance and creepage distances of conducting relay parts and relay terminal 1 and conducting relay parts and terminal 2 respectively. Refer to detail drawing. Minimum distance to neighboring ferruginous parts: 3mm.

Mini K HV (Continued)

Product code structure

Typical product code



Product code	Terminal/Encl.	Design	Coil	Contact type	Contact mat.	Arrangement	Part number
V23700-C0001-A408	PCB, sealed	Standard	no parallel resistor	Standard	Silver based	1 form X (NO DM)	2-1904058-5
V23700-F0002-A408	Plug-in, QC		parallel resistor				2-1904058-7

Consult TE Connectivity for prototype availability.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[TE Connectivity:](#)

[V23700-F0002-A408](#) [V23700-C0001-A408](#)