Double micro power relay K


Powertrain Systems


Chassis Systems


Safety


Security


Body


Driver Information

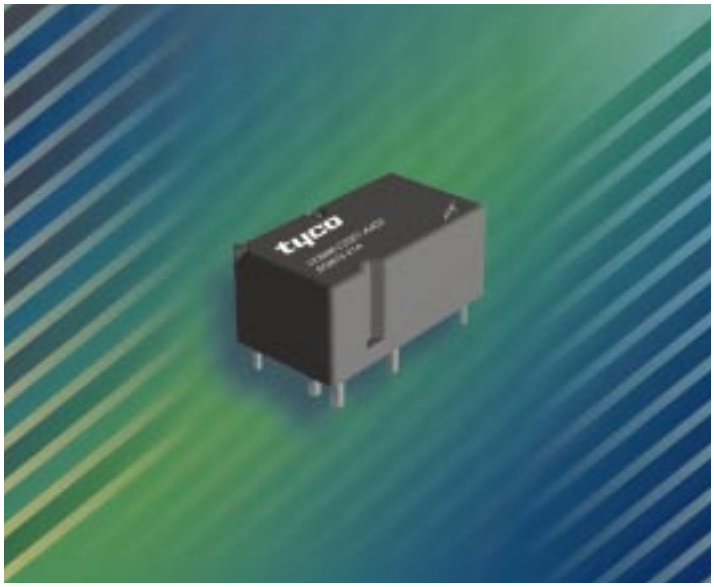

Convenience

Features

- Smallest twin relay
- Minimal weight (0.28 oz. / 8 g)
- Maximum continuous current 30 A
- Two separate systems

Typical applications

- Rear window and seat heating
- Wiper and indicator control
- Motor management



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Car Industry


Truck Industry


Other Industry

Design

Sealed;
sealed version:
sealing in accordance with IEC 68;
immersion cleanable:
protection class IP67 to IEC 529 (EN 60 529)

Weight

Approx. 0.28 oz. (8 g)

Nominal voltage

10 V, 12 V
other nominal voltages on request

Terminals

PCB terminals, for assembling in printed circuit boards

Conditions

All parametric, environmental and endurance tests are performed according to EIA Standard RS-407-A at standard test conditions unless otherwise noted:
23 °C ambient temperature,
20-50% RH, 29.5 ± 1.0" Hg
(998.9 ±33.9 hPa).

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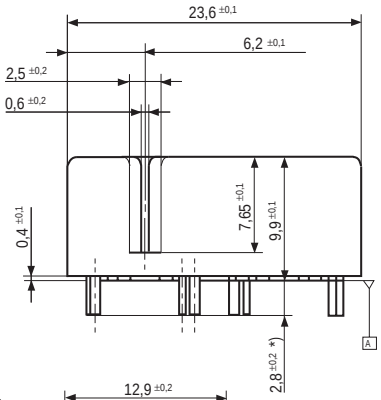
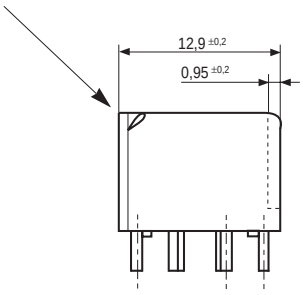
Dimensional drawing



Nipp-off-pin

The nipp-off-pin may be removed after soldering and washing (for ventilation)



*) Additional tin tops max. 1 mm

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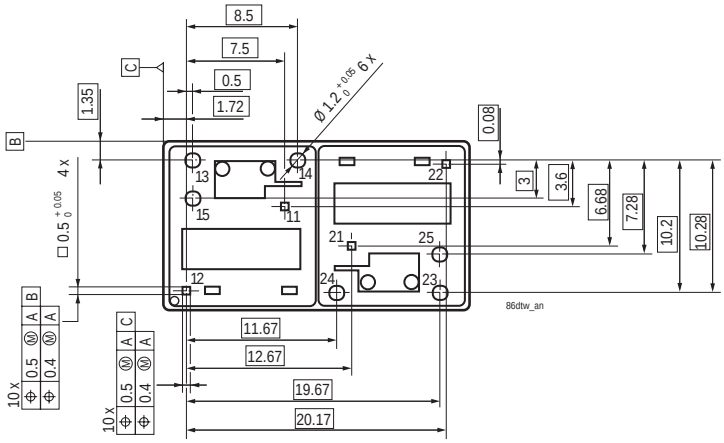
Mounting holes

View of the terminals (Bottom view)



Remark: Positional tolerances according to DIN EN ISO 5458

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Contact data

Contact configuration		2 changeover / 2 Form C		2 make contacts Form A	2 make contacts Form A
Contact material		AgNi 0.15 ($AgSnO_2$ available on request)		$AgSnO_2$	$AgSnO_2$
Circuit symbol (see also Pin assignment)				+	
Max. switching current[1]					
On		40 A[2]		40 A[2]/70 A[3]	40 A[2]/100 A[3]
Off		30 A		30 A	30 A
Limiting continuous current		NC/NO		NO	
	at 23 °C	25 A/30 A		30 A	30 A
	at 85 °C	15 A/20 A		20 A	20 A
Voltage drop initial at 10 A			Typ. 30 mV		
Mechanical endurance (without load)			> 5 x 10^6 operations		
Electrical endurance	Resistive load:	Wiper reverse:	Motor reverse blocked:	Flasher load:	Lamp load:
at cyclic temperature -40/+23/+85 °C	> 3 x 10^5 operations	> 3 x 10^5 operations	> 1 x 10^5 operations	> 2 x 10^6 operations	> 1 x 10^5 operations
and 13,5 VDC	at 20 A on NO-contact	25 A make/5 A break; generator peak -10 A L=1.0 mH	20 A L=0.77 mH	up to 3 x 21 W, 4 Turn and hazard signal in sequence	100 A inrush /10 A steady state

[1] The values apply to a resistive load or inductive load with suitable spark suppression.
[2] This current may flow for a maximum of 3 sec for a make/break ratio of 1 : 10.
[3] Corresponds to the peak inrush current on initial actuation (cold filament).

4) With polarization + at terminals 14 and 4

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Coil data	
Available for nominal voltages	10, 12 VDC (other coils on request)
Nominal power consumption of the unsuppressed coil at nominal voltage	0.57 W
Test voltage winding/contact	500 VAC_{rms}
Upper limit temperature for the coil	155 °C
Maximum ambient temperature range[1)]	– 40 to + 105 °C
Max. switching rate without contact loading	50 Hz
Operate time[2)]	Typ. 3 msec
Release time[2)]	Typ. 1.5 msec

[1)] See also operating voltage range diagram
[2)] Measured at nominal voltage without coil suppression unit
N.B.
A low resistive device in parallel to the relay coil slows down the armature movement
and reduces the lifetime caused by increased erosion and/or higher risk of contact tack welding.

Mechanical data	
Enclosure	
Sealed	Sealed relay is suitable for immersion cleaning of PCB assembly or conformal coating.

Operating conditions				
Temperature range, storage	-40 °C to 130 °C			
Test	Relevant standard	Testing as per	Dimension	Comments
Cold storage	IEC 68-2-1		72 h	-40 °C
Dry heat	IEC 68-2-2	Ba	1000 h	85 °C
Climatic cycling with condensation	EN ISO 6988		20 cycles	Storage 8/16 h
Thermal change	IEC 68-2-14	Nb	35 cycles	– 40/+ 105 °C
Thermal shock	IEC 68-2-14	Na	100 cycles	– 40/+ 105 °C Dwell time 1 h
Damp heat				
constant	IEC 68-2-3	Ca	56 days	40 °C / 93%
Corrosive gas	IEC 68-2-42 IEC 68-2-43	-	10 days 10 days	
Vibration resistance	IEC 68-2-6 (sine pulse form)		10 … 500 Hz 6 g	No change in the switching state > 10 µsec
Shock resistance	IEC 68-2-27 (half-sine pulse form)		6 msec up to 30 g	No change in the switching state > 10 µsec
Solderability	IEC 68-2-20	Ta, Method 1		Aging 3 (4 h/155 °C) Dewetting
Resistance to soldering heat	IEC 68-2-20	Tb, Method 1A		10 sec ± 1 sec with thermal screen
Sealing	IEC 68-2-17	Qc, Method 2		1 min / 70 °C

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Ordering information

Part number (Replace * with "Coil designator") Double micro power relay K	Contact arrangement	Contact material	Enclosure	Terminals
V23086-C2*-A303	Form C	AgNi0.15	Sealed	Printed circuit
V23086-C2*-A403	Form C	$AgSnO_2$	Sealed	Printed circuit
V23086-C2021-A502	Form A; lamp load	$AgSnO_2$	Sealed	Printed circuit
V23086-C2*-A602	Form A; flasher load	$AgSnO_2$	Sealed	Printed circuit

Coil versions

Coil designator Double micro power relay K	Rated coil voltage (V)	Coil resistance +/- 10% (Ω)	Must operate voltage (VDC)	Must release voltage (VDC)	Allowable overdrive (VDC)	
					at 23 °C[1)]	at 105 °C[1)]
001	12	254	6.9	1.5	24	15
002	10	181	5.7	1.25	20	13
021	12	181	6.9	1.5	20	13

[1)] Allowable overdrive is stated with no load current flowing through the relay contacts and minimum coil resistance.

Standard delivery pack (orders in multiples of delivery pack)

Double micro power relay K: 990 pieces