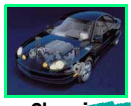
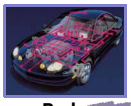
Mini power relay UT


Powertrain Systems


Chassis Systems


Safety


Security


Body


Driver Information

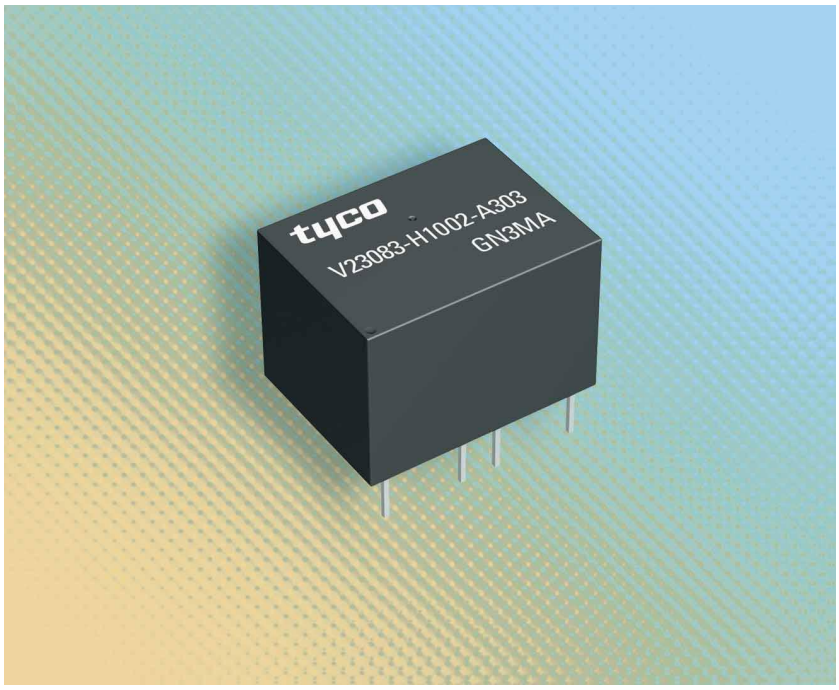

Convenience

Features

- Miniature twin coil relay
- Minimal space requirement
- Immersion cleanable

Typical applications

- Central locking
- Window actuators
- Wiper control
- Immobilizer
- Electrical seat adjustment



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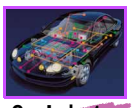
Car Industry


Truck Industry


Other Industry

Design

Sealed or flow solder type
sealed version:
sealing in accordance with IEC 60 068;
immersion cleanable:
protection class IP 67 to IEC 60 529 (EN 60 529)

Weight

Approx. 0.53 oz. (15 g)

Nominal voltage

9 V, 12 V;
other nominal voltages available 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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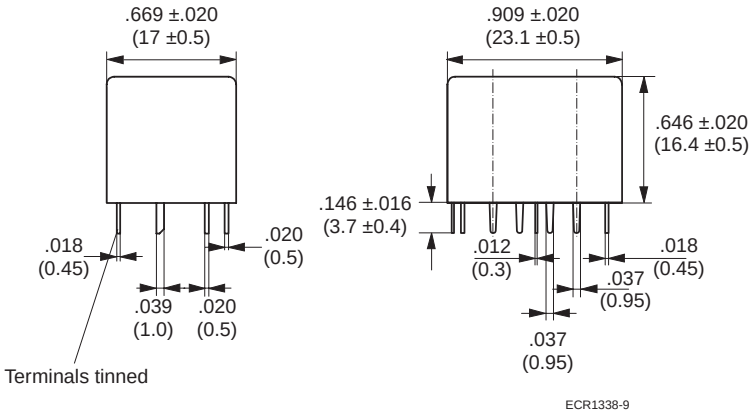
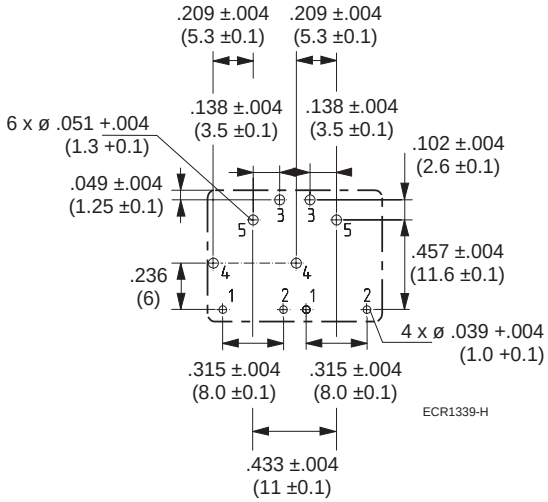
Dimension drawing

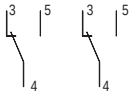


Mounting hole layout

View of the terminals (bottom view)

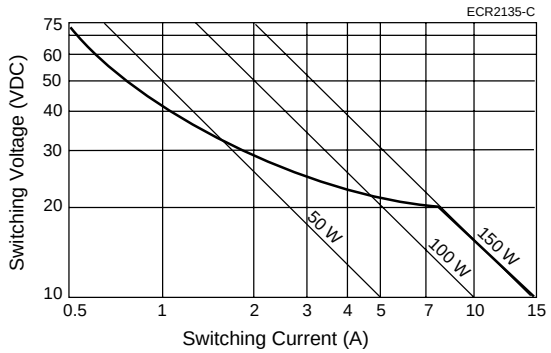


Contact data

Contact configuration	2 Changeover contacts/ 2 Form C	
Contact material	AgNi0.15	$AgSnO_2$
Circuit symbol (see also Pin assignment)		
Max. switching voltage	See load limit curve	
Max. switching power	See load limit curve	
Max. switching current[1] On[2] Off	NC/NO 2 × 15 A/2 × 30 A 2 × 5 A/2 × 10 A	NC/NO 2 × 20 A/2 × 40 A 2 × 5 A/2 × 10 A
Limiting continuous current at 23 °C at 85 °C	 2 × 10 A/2 × 10 A 2 × 5 A/2 × 6 A	 2 × 10 A/2 × 15 A 2 × 5 A/2 × 10 A
Voltage drop (initial) at 40 A	NC: Typ. 50 mV NO: Typ. 35 mV	NC: Typ. 70 mV NO: Typ. 50 mV
Increase in coil temperature at 10 A load	Typ. 25 °C/18 °C	Typ. 35 °C/25 °C
Mechanical endurance (without load)	> 10^7 operations	
Electrical endurance	> 1.5 x 10^5 operations at 13.5 VDC, 10 A	> 1.5 x 10^5 operations at 13.5 VDC, 15 A

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.

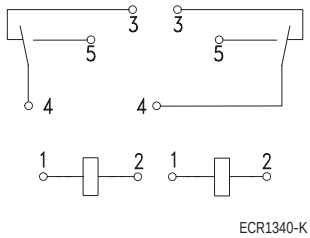
Load limit curve



Load limit curve ≙ arc extinguishes during transit time

Pin assignment

2 changeover contacts/
2 form C



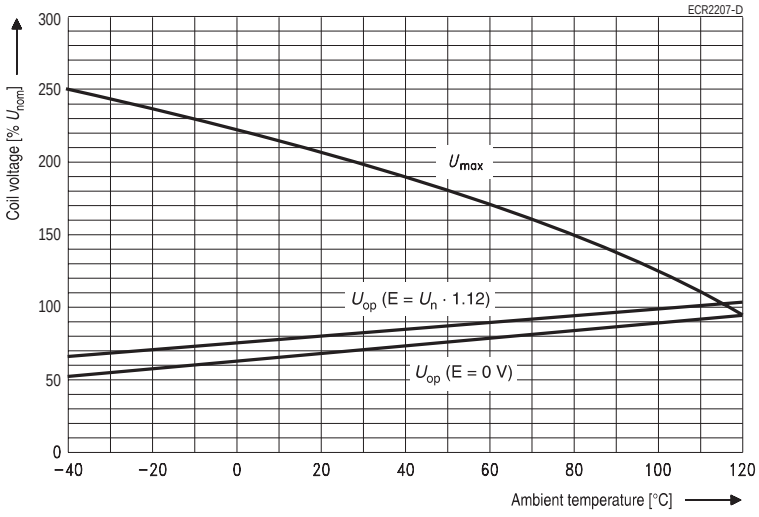
ECR1340-K

Coil data	
Available for nominal voltages	9 V, 12 V
Nominal power consumption of the unsuppressed coil at nominal voltage	0.45 W
Test voltage winding/contact	500 VAC_{rms}
Upper limit temperature for the coil	130 °C
Maximum ambient temperature range[1)]	– 40 to + 85 °C
Max. switching rate without contact loading	5 Hz
Operate time	Typ. 3 msec[2)]
Release time	Typ. 1.7 msec[2)]

1) See also operating voltage diagram
2) Measured at nominal voltage without coil suppression unit

N.B.
A low resistive device in parallel to the relay coil slows the armature movement down and reduces the lifetime caused by increased erosion and/or higher risk of contact tack welding.

Operating voltage range



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

Mechanical data	
Enclosures	
Flow solder type	Suitable for processing on soldering lines.
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
Vibration resistance	IEC 60 068-2-6 (sine pulse form) acceleration		10 … 55 Hz > 5 *g*	No change in the switching state > 10 µsec
Shock resistance	IEC 60 068-2-27 (half-sine pulse form) acceleration		11 msec > 10*g*	No change in the switching state > 10 µsec
Drop test	Capable of meeting specifications after 1.0 m (3.28 foot) drop onto concrete			
Flammability	UL94-HB			
Solderability	IEC 60 068-2-20	Ta, Method 1		Aging 3 (4 h/155 °C) Dewetting
Resistance to soldering heat	IEC 60 068-2-20	Tb, Method 1A		10 sec ± 1 sec with thermal screen
Sealing	IEC 60 068-2-17	Qc, Method 2		1 min / 70 °C

Ordering information

Part number (Replace * with "Coil designator") Mini UT	Contact arrangement	Contact material	Enclosure	Terminals
V23083-G1*-A203	2 Form C	$AgSnO_2$	suitable for processing on soldering lines	printed circuit
V23083-G1*-A303	2 Form C	AgNi0.15	suitable for processing on soldering lines	printed circuit
V23083-H1*-A203	2 Form C	$AgSnO_2$	sealed	printed circuit
V23083-H1*-A303	2 Form C	AgNi0.15	sealed	printed circuit

Coil versions

Coil designator Mini UT	Rated coil voltage (V)	Coil resistance +/- 10% (Ω)	Must operate voltage (VDC)	Must release voltage (VDC)	Allowable overdrive (VDC)	
					at 23 °C[1)]	at 85 °C[1)]
001	12	320	8	1.2	24.8	17.5
002	9	180	6	1	18.3	12.5

[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)

Mini UT: 1000 pieces