

# KT Series Reed Relays



- Features: High Voltage THT or SMD Relay in compact housing, High Isolation Voltage, Low Leakage Currents
- Tested in accordance with AEC-Q200 (see page 3), UL listed
- Applications: Automotive, Battery Management Systems, Photovoltaic Inverters, Isolation Measurement
- Markets: E-Cars, Solar, Test & Measurement, Medical

Part Description: **KT00-1A-40L-XXX**



Nominal Voltage	Contact Quantity	Contact Form	Pin Out	Option	Version
03, 05, 12, 24	1	A	40	L	THT, SMD

See page 3 for Glossary

Contact Data (at 20°C)	Switch Model	Unit
	85 (A-Dry)	
<b>Contact Material</b>	Rhodium	
<b>Rated Power (max.)</b> Any DC combination of V&A not to exceed max rated power	100	W
<b>Switching Voltage (max.)</b> DC or peak AC	1,000	V
<b>Switching Current (max.)</b> DC or peak AC	1.0	A
<b>Carry Current (max.)</b> DC or peak AC	2.5	A
<b>Contact Resistance (max.)</b> @ 0.5V & 10mA, Measured with 40% Pull-In Overdrive	150	mOhm
<b>Breakdown Voltage (min.)</b> (on request)* According to IEC 60255-27	3 – 4.5*	kVDC
<b>Operating Time (max.)</b> Including Bounce, Measured with 40% Pull-In Overdrive	1.1	ms
<b>Release Time (max.)</b> Measured without Coil Suppression	0.1	ms
<b>Insulation Resistance (min. / typ.)</b> Rh<45%, 100V Test Voltage	10 <sup>10</sup> / 10 <sup>12</sup>	Ohm
<b>Capacitance (typ.)</b> @ 10kHz across Open Switch	0.5	pF

Coil Data (at 20°C)		Coil Voltage (VDC)		Coil Resistance (Ohm)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Coil Power (mW)	Coil Inductance (mH)
Contact Form	Switch Model	Nominal	Maximal	Typical (± 10 %)	Maximal	Minimal	Nominal	Typical
1A	85	03	05	65	2.5	0.6	138	21
		05	7.5	80	3.5	0.55	313	21
		12	16	475	8.4	1.4	303	120
		24	30	1,800	16	2.9	320	430

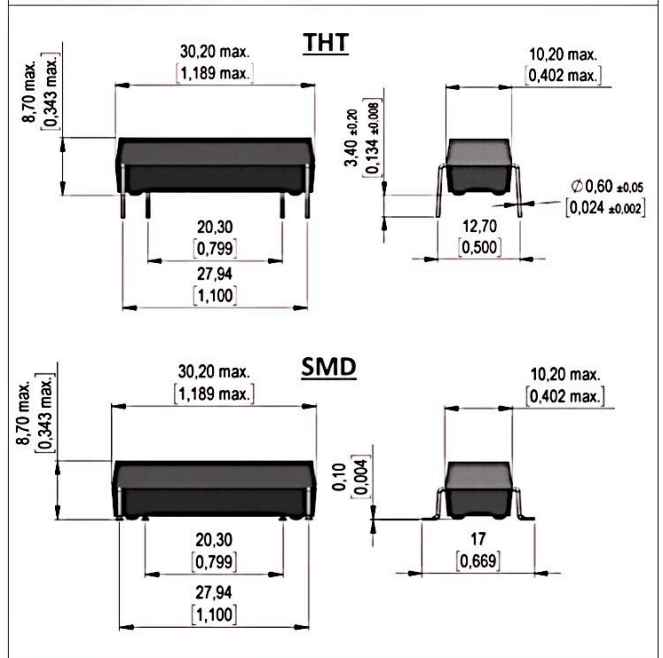
The Pull-In, Drop-Out Voltage and Coil Resistance will change at rate of 0.4% per °C

Relay Data (at 20°C)	Unit
<b>Dielectric Strength Coil/Contact (min.)</b> According to IEC 60255-27	7 kVDC
<b>Insulation Resistance Coil/Contact (min./typ.)</b> Rh<45%, 200V Test Voltage	10 <sup>12</sup> / 10 <sup>13</sup> Ohm
<b>Capacitance Coil/Contact (typ.)</b> @ 10 kHz	1.2 pF
<b>Shock Resistance (max.)</b> 1/2 sine wave, 6 ms, 3-axis	100 g
<b>Vibration Resistance (max.)</b> 10 - 2,000 Hz, 0.76 Oct/min, 3-axis	20 g
<b>Operating Temperature (max.)</b> Surrounding of the relay's housing	-40 to 100 °C
<b>Storage Temperature (max.)</b> Surrounding of the relay's housing	-40 to 125 °C
<b>Soldering Temperature (max.)</b> 5 seconds max.	260 °C
<b>Washability</b> Aqueous rinsing suitable. Proper drying necessary.	Fully Sealed

For the list of AEC-Q200 Tests, see page 3

**KT Reed Relay Dimensions (in mm [inch])**

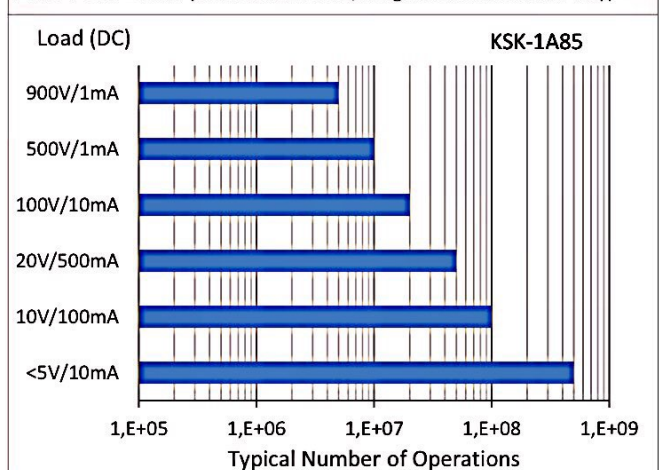
Tolerances acc. to ISO 2768-m



**Handing & Assembly Instructions**

- Switching inductive and/or capacitive loads create voltage and/or current peaks, which may damage the relay. Protective circuits need to be used - see our website.
- External magnetic fields and magnetic effects, due to adjacent relays in high density matrices that may influence the relays' electrical characteristics, must be taken into consideration.
- Mechanical shock impacts, e.g. dropping the relays, may cause immediate or post-installation failure.
- Suppressing coil diode can have a negative influence on total number of switching cycles, especially by switching high voltage
- Wave soldering: maximum 260°C / 5 seconds.
- Reflow soldering: See the page 4. Recommendations given by the soldering paste manufacturer need to be considered as well as the temperature limits of other components/processes.

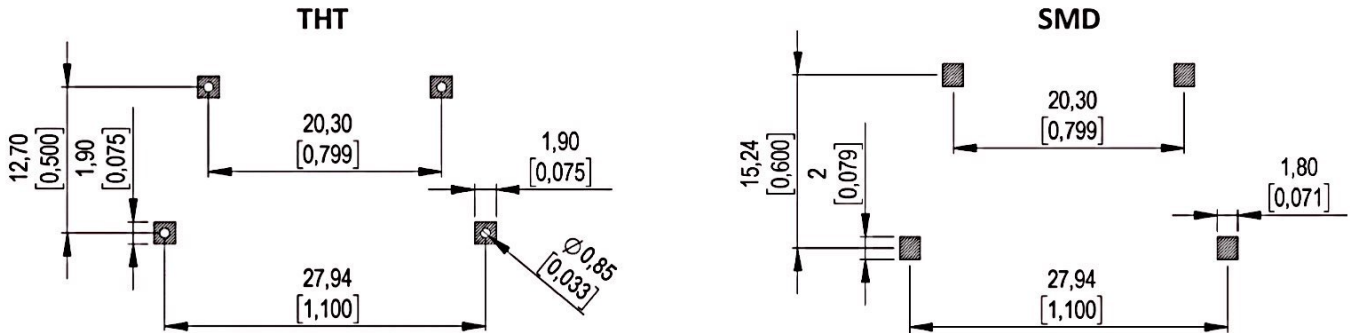
**Life Test Data (with resistive load, for general information only)**



Pin Out Top View



Recommended PCB Pad Layout Top View  
(in mm [inch]) Tolerances acc. to ISO 2768-m



Tested according to the following AEC-Q200 standards

Temperature cycle, 1000 cycles at +125°C / -40°C	JESD22 Method JA-104
Temperature test 1000 hours at +85°C and 85% RH	MIL-STD-202 Method 108
Temperature test 10 cycles 24h +25°C ~ 65°C, 80% - 90% RH	MIL-STD-202 Method 106
Mechanical Shock, halve-sine, 100 g	MIL-STD-202 Method 213
Mechanical Vibration, sinusoidal, 10–2000 Hz, 5 g	MIL-STD-202 Method 204
Temperature change, fast, 300 cycles, +105°C and -40°C	MIL-STD-202 Method 107 IEC60068-2-14
Terminal Strength	MIL-STD-202 Method 211 Test A & C
Resistance to Soldering Heat	MIL-STD-202 Method 210
Solderability	JESD22-B102E

Glossary Option

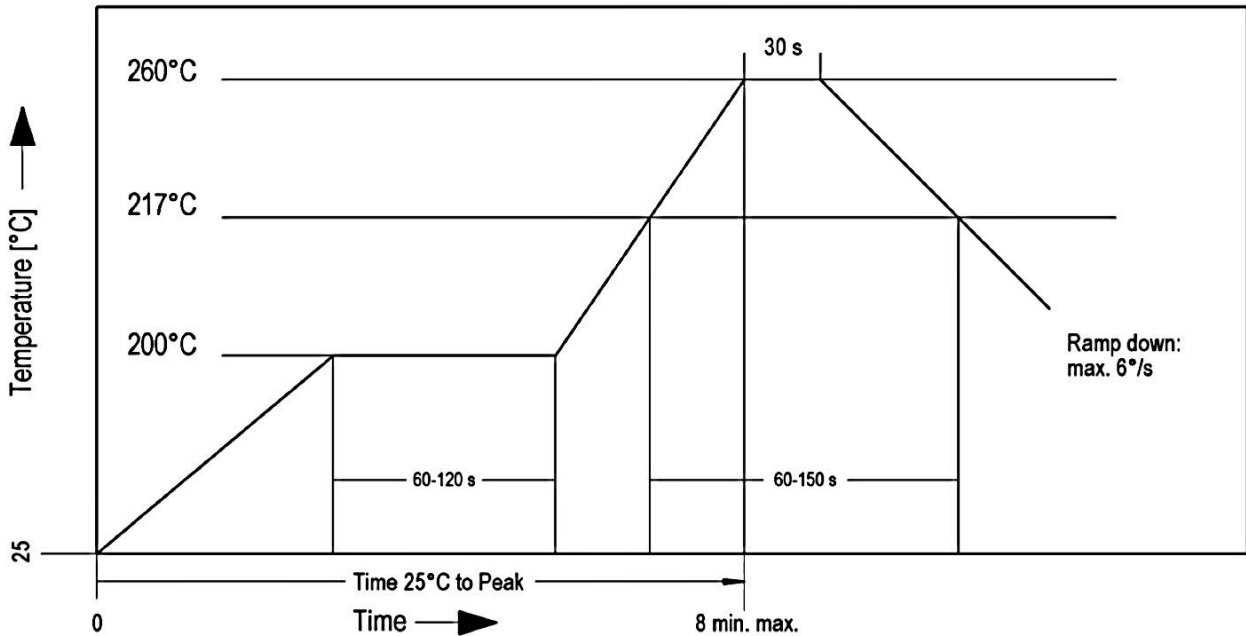
L	Standard, without Diode
D	with Diode
M	with Magnetic Shield, without Diode
Q	with Diode and Magnetic Shield
HR	High Resistance Coil
KT Relays are available only with "L" Option	

Glossary Contact Form

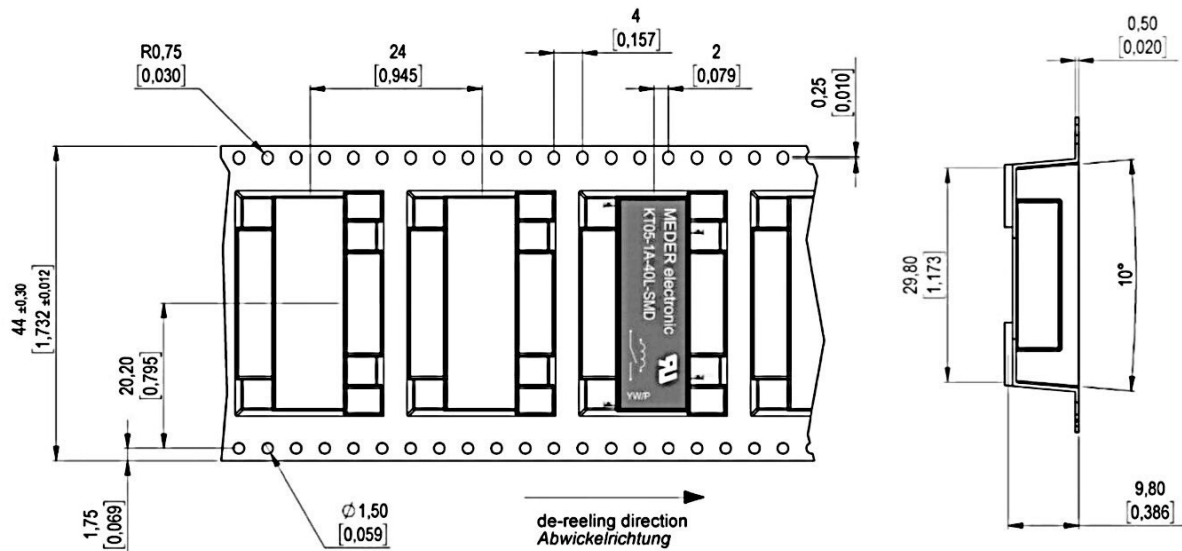
Form A	NO = Normally Open Contacts SPST = Single Pole Single Throw
Form B	NC = Normally Closed Contacts SPST = Single Pole Single Throw
Form C	Changeover SPDT = Single Pole Double Throw
Form E	Latching unchanged until an opposite impulse is present
KT Relays are available only in "Form A" configuration	

**Recommended Reflow Lead-free Profile** (acc. to JEDEC J-STD 020D.1)

For usage with tin Sn96.5/Ag3/Cu0.5



**THT Packaging (in Tubes per 15 pcs.) / SMD Packaging (Tape&Reel per 250 pcs.)**



**Please note:** All technical specifications on this series datasheet refer to the standard product range. Modifications in the sense of technical progress are reserved. For general information only. For more specific information, please consult the product datasheet, available upon request.

This series datasheet could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These changes will be incorporated in future revisions.

For deviating values, latest specifications and product details, please contact your nearest sales office.

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