KT Series Reed Relays

- **Features: High Voltage THT or SMD Relay in compact housing, High Isolation Voltage, Low Leakage Current**
- **Tested in accordance with AEC-Q200, UL recognized**
- **Applications: Automotive, Battery Management Systems, Photovoltaic Inverters, Isolation Measurement**
- **Markets: E-Cars, Solar, Test & Measurement, Medical**

Part Description: KT00-0X-40L-XXX

Nominal Voltage	Contact Quantity & Contact Form	Option	Version
03, 05, 12, 24	1A	L	THT = Through Hole SMD = Surface Mount Design

5V coil recommended for automotive applications

Customer Options Contact Data (@ 20°C)	Switch Model 85 (A-Dry)	Unit
Contact Material	Rhodium	
Rated Power (max.) Any DC combination of V&A not to exceed max. rated power	100	W
Switching Voltage (max.) DC or peak AC	1000	V
Switching Current (max.) DC or peak AC	1.0	A
Carry Current (max.) DC or peak AC	2.5	A
Contact Resistance (max.) @ 0.5V & 10mA, Measured with 40% Pull-In Overdrive	150	mOhm
Breakdown Voltage (min.) (upon request)* According to EN60255-27	3 - 5*	kVDC
Operating Time (max.) Including Bouncing, Measured with 40% Pull-In Overdrive	1.1	ms
Release Time (max.) Measured without Coil Suppression	0.1	ms
Insulation Resistance (min./typ.) Rh<45%, 100V Test Voltage	$10^{10}/10^{12}$	Ohm
Capacitance (typ.) @ 10kHz across open Switch	0.5	pF

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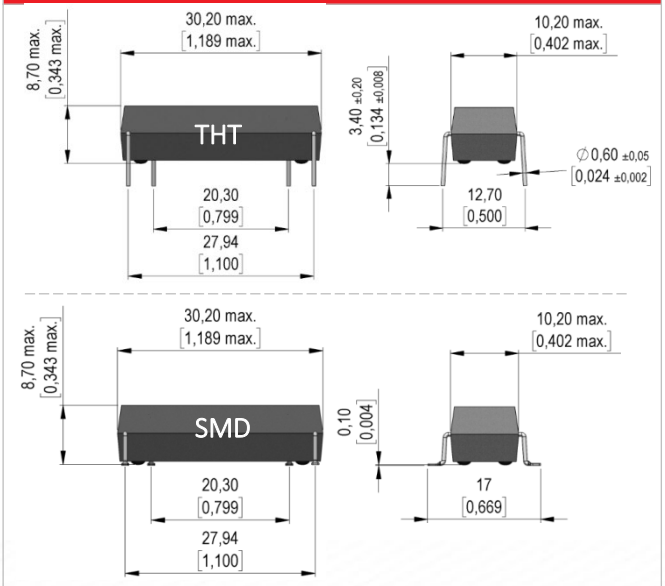
Coil Data (at 20°C)		Coil Voltage (VDC)		Coil Resistance (Ohm)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Coil Power (mW)	Coil Inductance (mH)
Contact Form	Switch Model	Nominal	Max.	Typical (± 10 %)	Max.	Min.	Nominal	Nominal
1A	85	03	05	65	2.5	0.6	138	21
		05	7.5	80	3.5	0.55	313	21
		12	16	475	8.4	1.4	303	120
		24	30	1,800	16.0	2.9	320	430
The Pull-In, Drop-Out Voltage and Coil Resistance will change at rate of 0.4% per °C								

Relay Data (@ 20°C)		Unit
Dielectric Strength Coil/Contact (min.) According to EN60255-27	7	kVDC
Insulation Resistance Coil/Contact (min./typ.) Rh<45%, 200V Test Voltage	$10^{12}/10^{13}$	Ohm
Capacitance Coil/Contact (typ.) @10 kHZ	1.2	pF
Shock Resistance (max.) 1/2 sine wave, 6md, 3-axis	100	g
Vibration Resistance (max.) 10 – 2,000 Hz	20	g
Operating Temperature (max.) Surrounding of the relay's housing	-40 to 100	°C
Storage Temperature (max.) Surrounding of the relay's housing	-40 to 125	°C
Soldering Temperature (max.) 5 sec. max.	260	°C
Washability Aqueous rinse suitable. Proper drying necessary.	Fully Sealed	
For the list of AEC-Q200 Tests, see page 3		

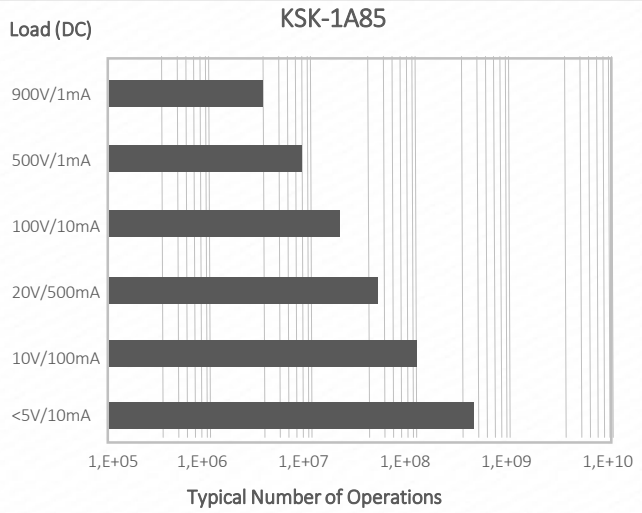
Dimensions (in mm [inch]) Tolerances acc. to ISO 2768-m



Handling & 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 or contact our sales office.
- 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. Zener diode in series with the suppression diode is recommended.
- 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)



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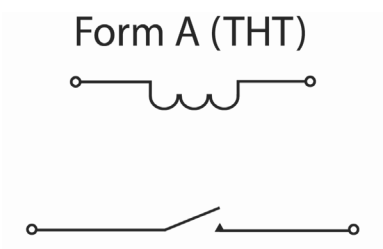
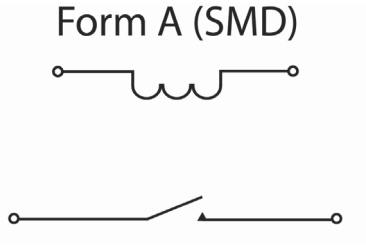
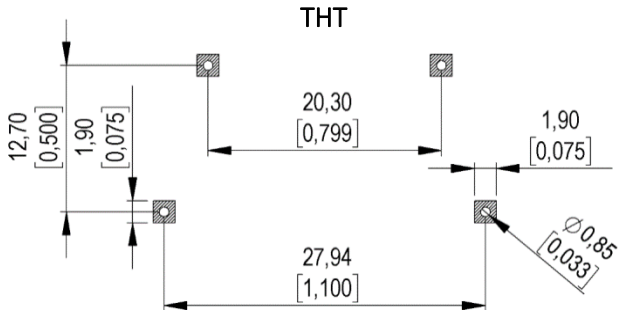
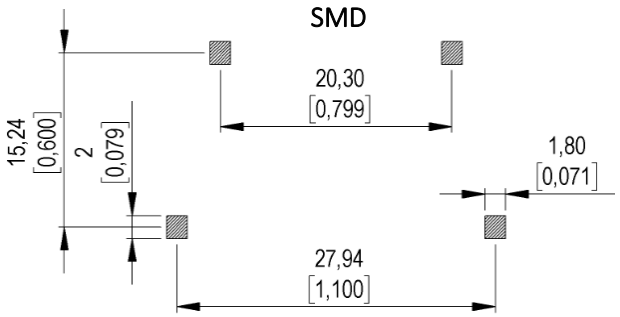
Pin-Out (Top View)





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





AEC-Q200

Tested according to the following AEC-Q200 standards	
High Temperature exposure 1000 hrs. @+125°C, unpowered	MIL-STD-202 Method 108
Temperature cycling 1000 cycles @+125°C / -40°C	JESD22 Method JA-104
Biased humidity 1000 hrs. @+85°C @85%RH, unpowered	MIL-STD-202 Method 103
Operational Life 1000 hrs. @+85°C, powered	MIL-PRF-27
Terminal Strength (THT Leads)	MIL-STD-202 Method 211
Mechanical Shock 100 g Half sine, 6ms, 10 times, 3 axis, 6 directions	MIL-STD-202 Method 213
Mechanical Vibration 20g 10-2000 Hz, 3 axes, 12 cycles per axis	MIL-STD-202 Method 204
Resistance to Soldering Heat	MIL-STD-202 Method 210
Solderability	JESD22-B102 E
Board Flex 60 sec. minimum holding time	AEC-Q200-005 (Attach. 5)
Terminal Strength (SMD)	AEC-Q200-006 (Attach. 6)

Glossary Options	
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	

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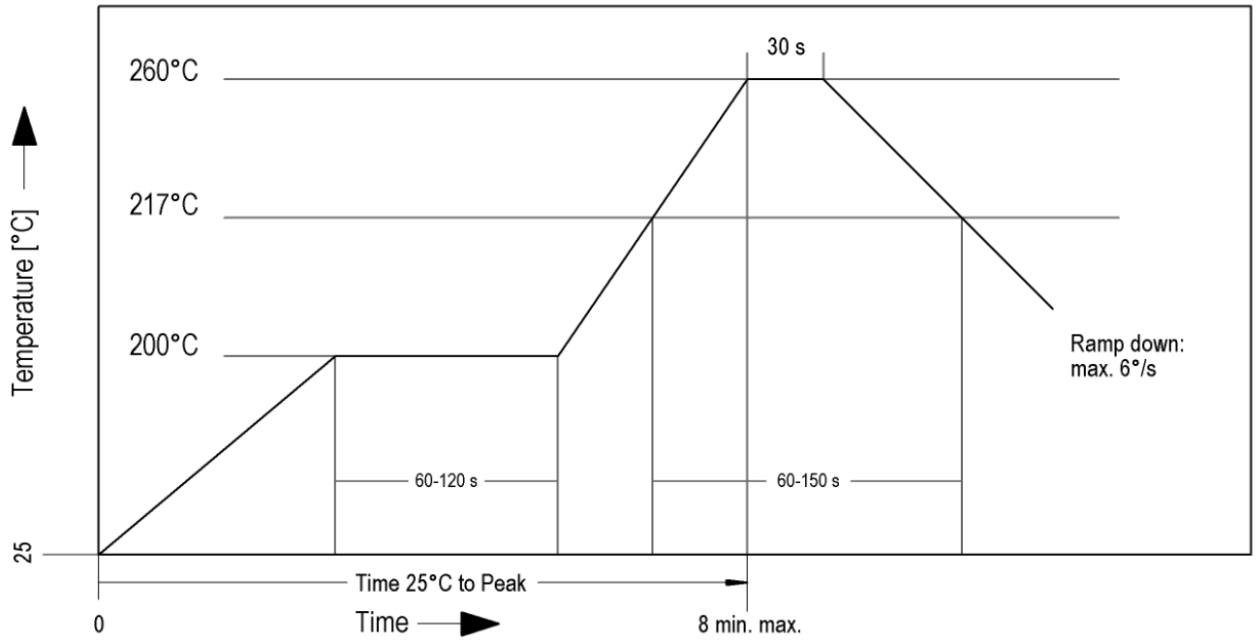
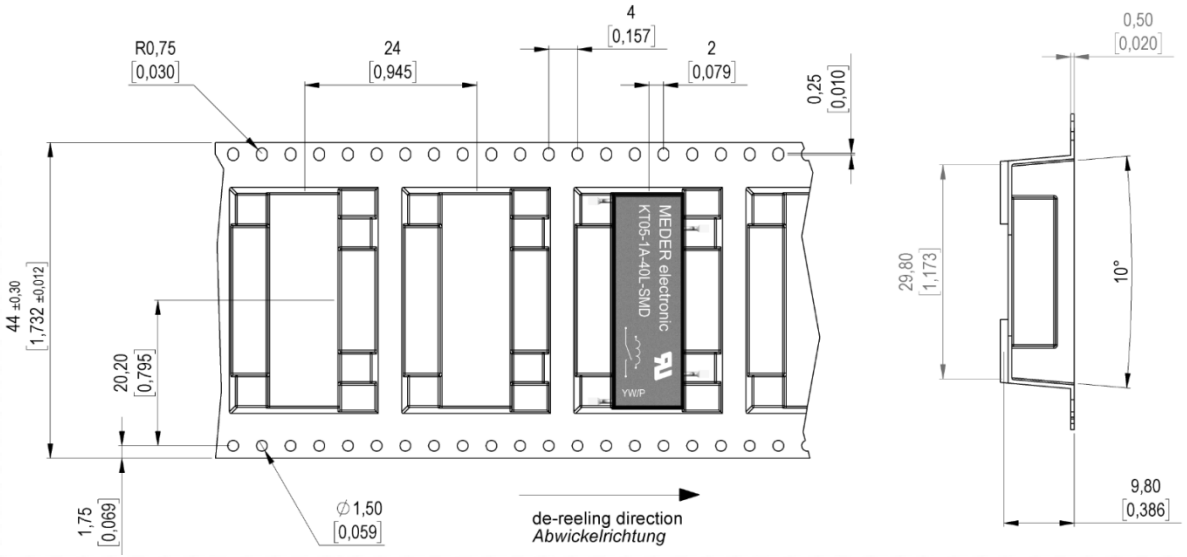
Recommended Reflow Lead-free Profile (acc. to JEDEC J-STD 020D.1) For usage with tin Sn96.5/Ag3/Cu0.5



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 change will be incorporated in future revisions.

For deviating values, most current specifications and products please contact your nearest sales office.

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