



PRODUCT SPECIFICATION

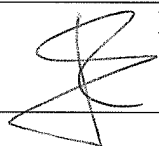
KMT 0 NGJ LHS

Ref. / PS-KMT-281

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ISSUE 1: MARCH 2010

Approvals:

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Note

This specification, attached documents and attached drawings cannot be communicated to anybody without written agreement of C&K.



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Revision record :

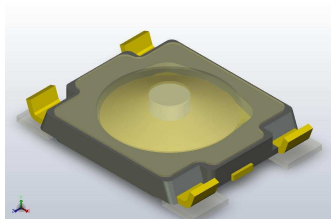
Revision	Date	Comments
Issue 1	March 22 nd 2010	Creation

Summary:

1. Description / Main Features
2. Construction
3. Electrical data
4. Mechanical data
5. Physical data
6. Operating environment
7. Additional data : storage and handling environment
8. Additional data : process environment
9. Applicable norms
10. KMT Switch integration recommendation

Appendix:

- 1: Reflow profile characteristics
- 2: Packaging

KMT 0 NGJ LHS**Issue 1****Ref. / PS-KMT-281****Page 3 of 8****1 - Description**

The KMT 0 NGJ LHS is a Halogen Free, ultra-low profile tact switch, single pole, normally open, momentary action designed for SMT mounting.

Main Features

- 0.63 (KMT 011, 021 & 071 versions) or 0.65 mm (KMT 031 versions) height with actuator
- 3.6 x 2.6 mm footprint
- Without ground
- Good tactile feed-back
- Terminal plating : LFS (Lead Free Silver)
- **ROHS compliance**
- **Halogen Free compliance**
 - Bromine (Br) ≤ 900 ppm
 - Chlorine (Cl) ≤ 900 ppm
 - Total concentration of Br & Cl ≤ 1500 ppm
- Compatible with lead free reflow soldering process
- Delivered on plastic reels
- Compatible with Pick & Place machines

2 - Construction

Function	Momentary action
Contact type	Normally Open
Terminals	SMT

3 - Electrical data

	Contact plating : Ag
Maximum power	0.5 VA
Min/max voltage	20 mV – 32 Vdc
Min/max current	1 mA – 50 mA
Dielectric strength	≥ 250 Vrms (1 mn)
Contact resistance	≤ 300 m Ω
Insulation resistance	≥ 50 M Ω
Bounce time	≤ 6 ms

4 - Mechanical data

Operating force (Fa)	<ul style="list-style-type: none">• KMT 011 NGJ LHS: Fa = 1.0 N \pm 25%• KMT 021 NGJ LHS: Fa = 1.6 N \pm 25%• KMT 031 NGJ LHS: Fa = 3.4 N \pm 25%• KMT 071 NGJ LHS: Fa = 2.3 N \pm 25%
Tactile feeling ($\Delta\%$)	<ul style="list-style-type: none">• KMT 011 NGJ LHS: $\Delta \geq 10\%$• KMT 021 NGJ LHS: $\Delta \geq 30\%$• KMT 031 NGJ LHS: $\Delta \geq 30\%$• KMT 071 NGJ LHS: $\Delta \geq 30\%$ ($\Delta\%$ after 2 reflow cycles)
Return force (Frr)	Frr ≥ 0.25 N
Electrical travel (Te)	Te = 0.15 mm \pm 0.1
Mechanical travel (Tm)	Tm = 0.15 mm \pm 0.1
Simultaneity	≤ 0.05 mm
Actuation condition limits	According to § 10
5 – Physical data	
Dimensions & layout	According to drawing:: CU34MH2005FP
Mass	0.02 g \pm 0.01
6 - Operating environment	
Operating temperatures	- 40 °C / + 85 °C
Relative humidity	90 to 96 % According to IEC 60068-2-78
Operating life	$\geq 300\,000$ cycles Contact resistance measurements after life test : ≤ 5 Ω
Vibrations	10-500 Hz / 10 g / 3 axis No discontinuity $> 1\mu$ s According to NF EN 60068-2-6

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Mechanical shocks	$\frac{1}{2}$ sinusoidal / 50 g / 11 ms 3 shocks in each direction of the 3 axis No discontinuity > 1 μ s According to NF EN 60068-2-27
Overload	Static Overload : 30 N Overload life test : 10 N – 1000 cycles
7 - <u>Additional data : storage and handling environment</u>	
Packaging conditions	According to drawings in appendix 2 Tape and reel per EIA 481-B. <i>Number of pieces per reel: 4000</i> Dry pack with desiccant. Once dry pack is opened and a part of the reel unused for more one week, baking, prior to SMT 4 hour/60°C is recommended.
Transport conditions	According to specification NF H00-060
Storage temperatures	- 55 °C (10 days)/+85°C (10 days)
8 - <u>Additional data : process environment</u>	
Lead free reflow soldering process	According to C&K Procedure : PS-LF-001 (reflow profile characteristics described in appendix 1) <i>Recommendation for solder paste thickness : 100 μm \pm 20 μm</i>
Re-work process by iron	N.A.
Washing process	NA
Sealing	IP 57
Chemical agent	NA
Shear test (switch/PCB)	> 30 N
9 - <u>Applicable norms</u>	
Testing procedure (C&K spec)	Proc-essai 16
Legal norm (EHS)	C&K procedure
10 - <u>KMT Switch integration recommendation</u>	
According to page 5	

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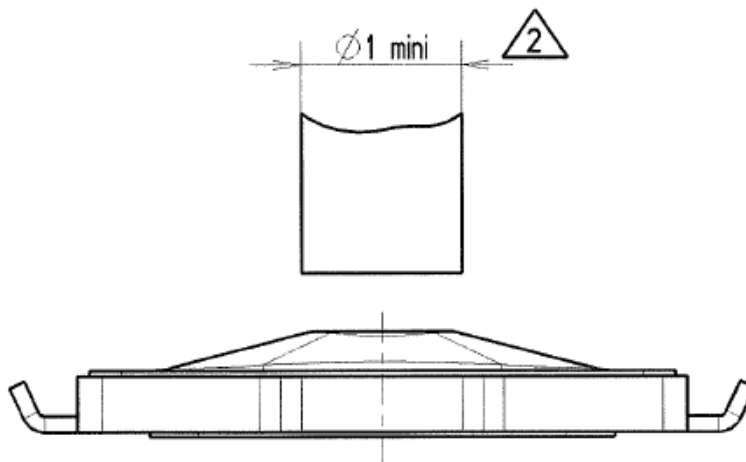
10. KMT Switch integration recommendation**1. KMT extreme area for actuation**

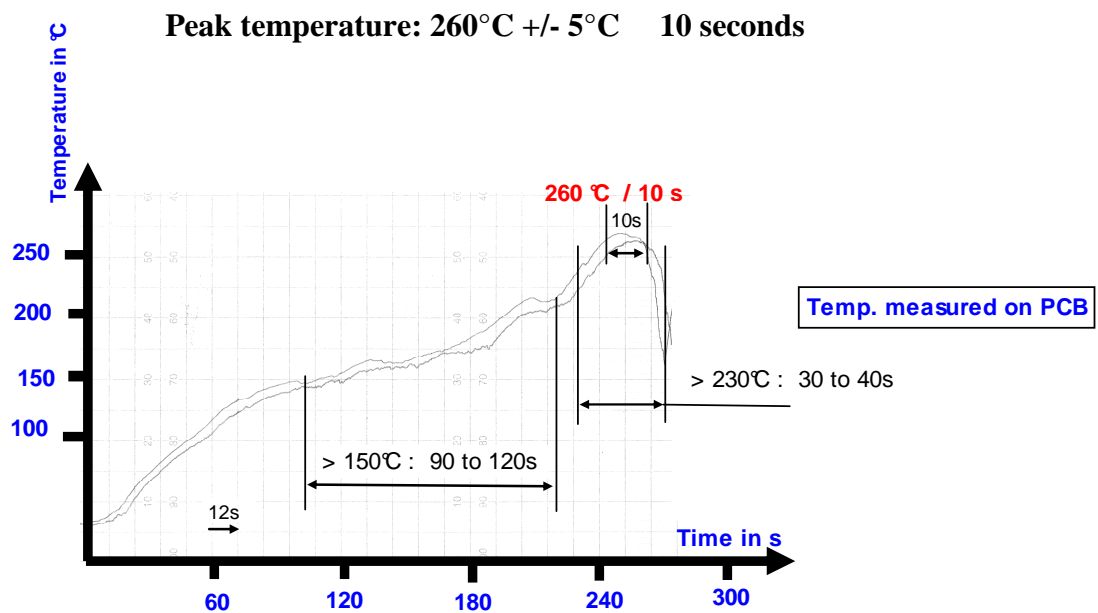
This area illustrates the optimal actuation surface.
Application key or button has to remain inside Ø1.8mm.

Outside this recommended area, KMT will not perform properly.

2. Key size

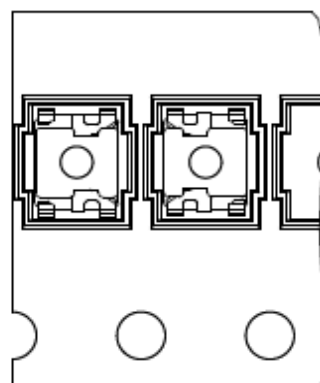
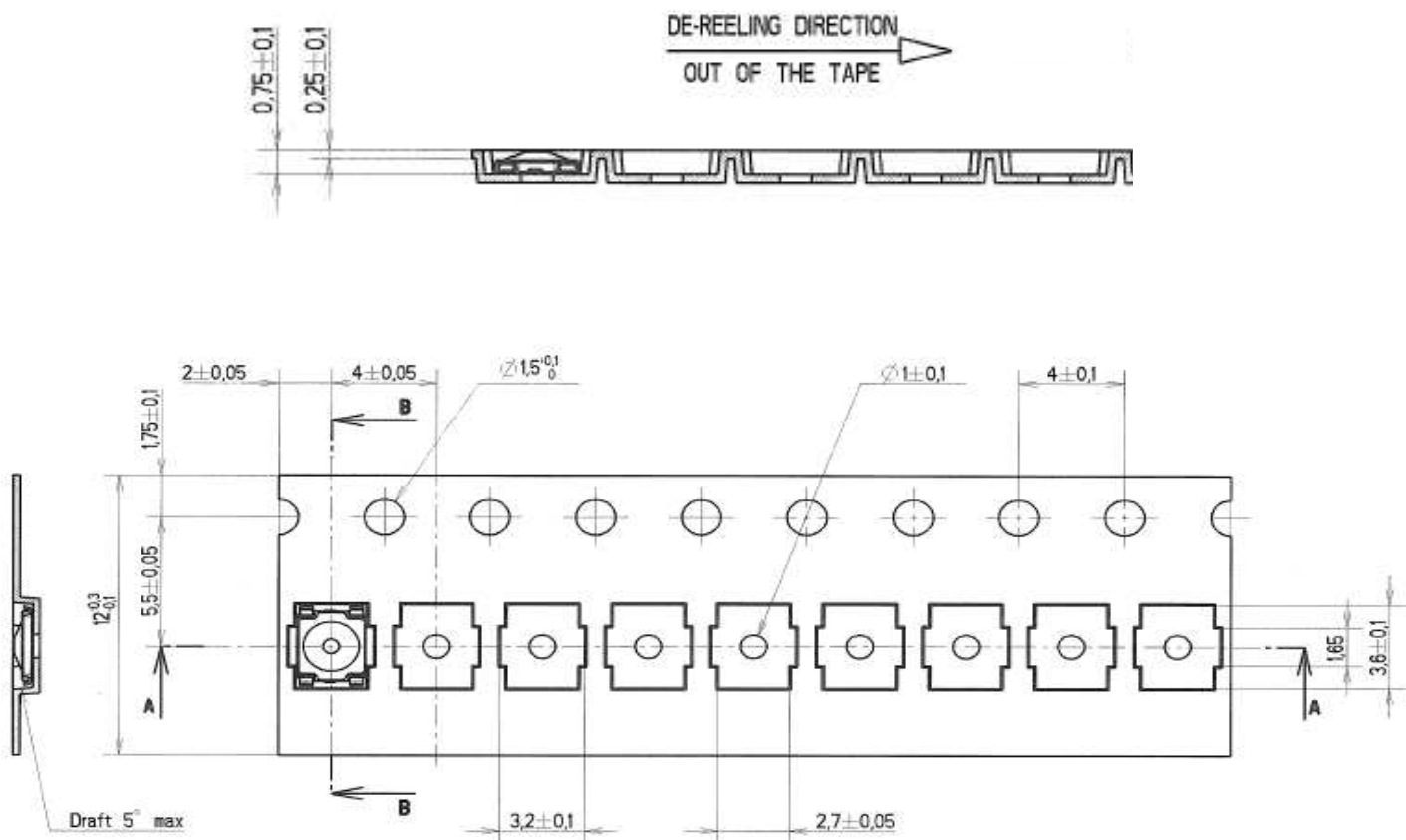
Key size should be over (or equal) to Ø1mm. We recommend 0.2mm off-centred max.



Appendix 1**Reflow profile test characteristics**

Appendix 2

Packaging (1/2)



Product are symmetrical
but can be presented
in any 180° direction
as shown on the left

Be careful! Bottom view

Appendix 2**Packaging (2/2)**