
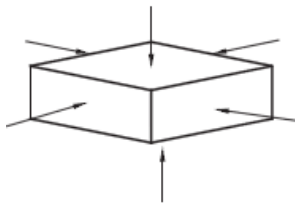



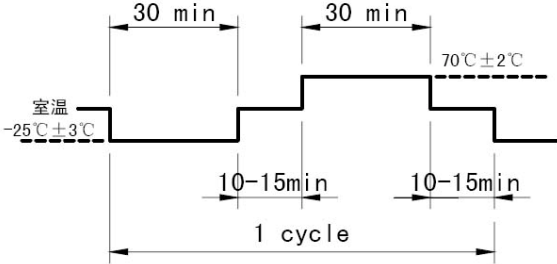


		文件编号	0080033C
		发布日期	2012 年11 月20 日
PRODUCT SPECIFICATION 产品承认书		文件版次	A 版
		页 码	共5页/第1页
SERIES 系列	Tact Switch 轻触开关	产品型号	KAN0642
1.General Characteristics 一般特性			
<p>1.1 Application: This specification is applied to the Tact Switch for general applications. 适用范围：该规格书适用于轻触开关的一般使用范围。</p> <p>1.2 Operating Temperature Range: -25℃ to +85℃ 使用温度范围： -25℃ - +85℃</p> <p>1.3 Operating Relative Humidity: ≤85% R 相对湿度： ≤85% RH</p> <p>1.4 Test Conditions: Unless otherwise specified, the atmospheric conditions for making measurements and tests are as follows: 实验条件：若没有特别说明，则试验大气条件如下： Ambient Temperature: 5-35℃ Relative Humidity: 45-85% RH Air Pressure: 86-106Kpa (860-1060mbar) 环境温度： 5-35℃ 相对湿度： 45-85% RH 大气压力： 86-106Kpa (860-1060mbar)</p>			
2. Appearance, Structure & Dimensions 外观， 结构及尺寸：			
<p>2.1 Appearance: The switch shall have good finishing, and no rust, crack or plating defects. 外观：产品外观良好，无锈蚀、裂纹和镀层缺陷。</p> <p>2.2 Structure & Dimensions: Refer to individual product drawing. 结构及尺寸：参见产品图纸</p> <p>2.3 Markings: Refer to individual product drawing. 标识：参见产品图纸</p>			
3. Ratings 额定值: 50mA. 12VDC			
4. Electrical Characteristics 电气特性			
No.	Item 项目	Criteria 标准	Test Method 实验方法
4.1	Contact Resistance 接触电阻	100mΩ Max.	Measured by a voltage drop method at 1A 5VDC . Any equipment with error not more than 5% can be used. Resistance after test is the average of 5 successive measurements. 以1A, 5V 直流电，采用电压降法测量。也可用误差不超过5%的仪表进行测量，实验后的电阻取5 次测量的平均值。
4.2	Insulation Resistance 绝缘电阻	100MΩ Min.	250VDC voltage is applied between each pair of terminals and between the terminal and the metal frame for 60±5s. 在相互绝缘的所有端子之间及各接线端子与外露的非载流金属零件之间加载250V 直流电，持续时间60±5S。
4.3	Dielectric Voltage 抗电强度	No dielectric breakdown shall occur. 无击穿现象发生。	250VAC (50~60Hz,cut-off current 2mA) is applied between non-connected terminals and between terminals and the metal frame for 60 ±5s. 在相互绝缘的所有接线端子之间 250V (50-60Hz) 交流电，各接线端子与外壳或非载流金属零件之间加载500V (50-60Hz) 交流电，持续时间 60±5S。

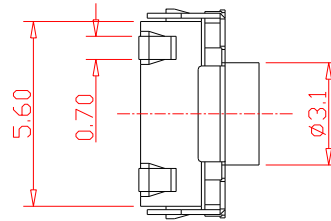
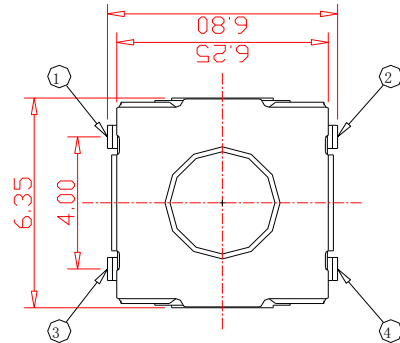
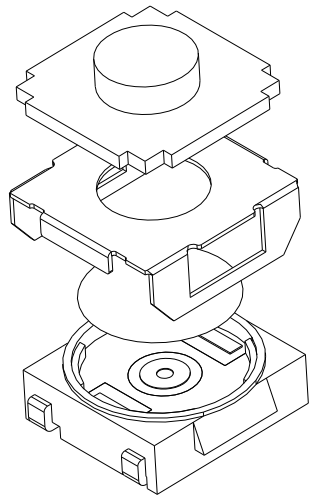
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5.Mechanical Characteristics 机械特性:			
No.	Item 项目	Criteria 标准	Test Method 实验方法
5.1	Operating Force 操作力	21 0±1 0gf	Apply a tension meter on the midpoint of the actuator (or tip of the shaft) to supply a pressure vertically from its free position to operating position. 在操作元件末端沿操作方向均匀施加静载荷,使操作元件转换到动作位置。
5.2	Vibration Proof 振动	After test, Contact resistance:100mΩ Max. Insulation resistance:100MΩ Min No abnormalities shall be recognized in appearance and construction. 实验后: 接触电阻:100mΩ Max. 绝缘电阻:100MΩ Min. 表面及结构无明显变形。	Switch shall be secured to a testing machine by a normal mounting device and method. Encoder shall be measured after following test. (1) Vibration frequency range = 10~55 Hz (2) Total amplitude =1.5mm (3) Sweep ratio: 10~55~10Hz Approx. 1 min (4) Method of changing the sweep vibration frequency: logarithmic or linear (5) Direction of vibration: Three perpendicular directions including actuating direction. (6) Duration: 2 hours (6 hours in total) 开关采用常规的安装方法牢固地安装在试验设备上,并在下述参数条件下进行试验: (1) 振频=10~55Hz (2) 振幅1.5mm (3) 振动变化速率: 10~55~10Hz 大约1 分钟 (4) 变频方法: 对数或线性型式 (5) 振动方向: 三个相互垂直的方向,其中一个方向应是促动元件运动的方向。 (6) 时间: 每个方向2 小时(共6 小时)。
5.3	Mechanical Shock 冲击	Shall be free from mechanical abnormalities. 表面及结构无明显变形。	Switch shall be measured after following test: (1) Mounting Method: Normal (2) Acceleration: 490m/s ² (50G) (3) Duration: 11ms (4) Test Direction: 6 directions (5) Number of shocks: 3 times per direction (18 times in total) 试件在下述参数条件下进行试验: (1)安装方法: 常规方法 (2)加速度: 490m/ s ² (50G) (3)时间: 11ms (4)实验方向: 图示 6方向 (5)冲击次数: 每个方向 3 次(总共 18次) 

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5.4	Solder Ability 可焊性	More than 90% of immersed part shall be covered with solder. 超过90%的浸锡面积被焊料所覆盖。	<p>Switch shall be checked after following test:</p> <p>(1) Solder:H63A (JIS Z3282)</p> <p>(2) Flux:Rosin Flux (JIS K 5902) having a nominal composition of 25% solids by mass of water white rosin in methyl alcohol (JIS K 1501) solution.</p> <p>(3) Soldering Temperature:260 ± 5°C Immersing Time:3±1s Flux immersing time shall be 5 ~10s in normal room temperature.</p> <p>(4) Immersion Depth: Immersion depth shall be at copper plating portion of PCB after mounting. (Thickness of PCB=1.6mm)</p> <p>试件在下述参数条件下进行试验:</p> <p>(1) 焊料: H63A (JIS Z 3282)</p> <p>(2) 焊剂: 焊剂 (JIS K 5902), 质量百分比为25%松香, 75%甲醇的无色透明溶液。</p> <p>(3) 焊接温度: 260 ± 5°C 浸渍时间: 3 ± 1s 焊剂浸渍时间: 5~10s</p> <p>(4) 浸渍深度: 接线端应浸到离开开关根部1.6mm 处。</p>
5.5	Solder Heat Resistance 耐焊接热	No abnormalities shall be observed in appearance and operation. 无外观及功能损坏。	<p>Switch shall be measured after following test:</p> <p>(1) Solder: H63A (JIS Z3282)</p> <p>(2)Flux: Rosin Flux (JIS K 5902) having a nominal composition of 25% solids by mass of water white rosin in methyl alcohol (JIS K 1501) solution.</p> <p>(3) Soldering Temperature & Immersing Time Dip Soldering 260±5°C 5±1s Manual Soldering 360±10°C 2~3s</p> <p>(4)Immersion Depth: (For Dip Soldering) Immersion depth shall be at copper plating portion of PCB after mounting. (Thickness of PCB=1.6mm)</p> <p>试件在下述参数条件下进行试验:</p> <p>(1) 焊料: H63A (JIS Z 3282)</p> <p>(2) 焊剂: 焊剂 (JIS K 5902), 质量百分比为25%松香, 75%甲醇的无色透明溶液。</p> <p>(3) 焊接温度及浸渍时间: 自动焊接260 ± 5°C 5 ± 1s 手工焊接360 ± 10°C 2 ~ 3s</p> <p>(4) 浸渍深度: (对于手动焊接) 接线端应浸到离开1.6mm 处。</p>

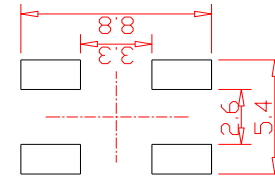
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6. Durability characteristics 耐久性能			
No.	Item 项目	Criteria 标准	Test Method 实验方法
6.1	Mechanical Life 机械寿命	After test, Contact resistance: 10Ω Max. Insulation resistance: 10MΩ Min. Tolerance of operating force disintegration shall be within 30% of specified value No functional defective occur .The switch shall be free from abnormalities in appearance construction.	1,00,000 cycles of operation shall be performed continuously at a rate of 2-3 cycles/sec without load. 在不带负荷的条件下, 速度为2-3次/秒, 在寿命试验设备上连续转换2, 00, 000次。
	Electronics Life 电气寿命	实验后: 接触电阻: 5Ω Max. 绝缘电阻: 100MΩ Min. 操作力衰变应在±30%以内。无功能性不良开关外观及结构应无损坏。	1,00,000 cycles of operation shall be performed continuously at a rate of 2-3 cycles/sec with load as follow 50mA 12VDC 在带50mA 12VDC负荷的条件下, 速度为2-3次/秒, 在寿命试验设备上连续转换 2, 00, 000次。
7. Weather Proof Characteristics 耐候性能:			
No.	Item 项目	Criteria 标准	Test Method 实验方法
7.1	Cold Proof 低温	After test, Contact resistance: 100mΩ Max. Insulation resistance: 10MΩ Min. The switch shall be free from abnormalities in appearance and construction.	After testing at -20 ± 2°C for 96 hours, the encoder shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated. 试件在-20±2°C的温控箱内保持96小时, 然后在正常温度和湿度下恢复1小时, 并在此后1小时内对试品进行测量, 水滴应消失。
7.2	Hot Proof 高温	实验后: 接触电阻: 100mΩ Max. 绝缘电阻: 100MΩ Min. 开关外观及结构应无损坏。	After testing at 85 ± 2°C for 96 hours, the encoder shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. 试件在85±2°C的温控箱内保持96小时, 然后在正常温度和湿度下恢复1小时, 并在此后1小时内对试品进行测量, 水滴应消失。
7.3	Moisture Resistance 恒定湿热	After test, Contact resistance: 500mΩ Max. Insulation resistance: 10MΩ Min. The switch shall be free from abnormalities in appearance and construction.	After testing at 40± 2°C ,90~95% RH for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated. 试件在40±2°C, 90-95%RH 的温控箱内保持96小时, 然后在正常温度和湿度下恢复1小时, 并在此后1小时内对试品进行测量, 水滴应消失。

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7.4	Temperature Cycling 温度转换	<p>After test, Contact resistance: 500m Ω Max. Insulation resistance:10M Ω Min. The switch shall be free from abnormalities in appearance and construction.</p> <p>实验后: 接触电阻: 100m Ω Max. 绝缘电阻: 100M Ω Min. 开关外观及结构应无损坏。</p>	<p>After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.</p> <p>试件按下述实验条件试验5 次,然后在正常温度和湿度下恢复1小时,并在此后1小时内对试品进行测量,水滴应消失。</p> 
7.5	Salt Mist 盐雾实验	<p>After test, Contact resistance: 500mΩ Max. Insulation resistance:10MΩ Min. The switch shall be free from abnormalities in appearance and construction. No remarkable corrosion shall be recognized in metal part.</p> <p>实验后: 接触电阻: 100m Ω Max. 绝缘电阻: 100M Ω Min. 开关外观及结构应无损坏,金属件上没有腐蚀斑点。</p>	<p>The switch shall be checked after following test:</p> <ol style="list-style-type: none"> (1) Temperature: 35± 2°C (2) Salt Solution:5±1% (Solids by mass) (3) Duration: 24hours (4) After test ,the switch shall be removed by running water and allowed to stand under normal temperature and humidity conditions for 0.5 hour. <p>试件在下述实验后测量:</p> <ol style="list-style-type: none"> (1) 温度: 35 ± 2°C (2) 盐溶液浓度: 5 ± 1% (质量百分比) (3) 时间: 24小时 (4) 测试后, 试件用水冲干净并放置于常温下0.5 小时
7.6	Sulfuration 硫化实验	<p>实验后: 接触电阻: 100m Ω Max. 绝缘电阻: 100M Ω Min. 开关外观及结构应无损坏,金属件上没有腐蚀斑点。</p>	<p>The switch shall be checked after following test:</p> <ol style="list-style-type: none"> (1) Temperature: 35± 2°C (2) Na₂S Concentration: 2% (Solids by mass) (3) Duration:2 min (4) After test ,the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour. <p>试件在下述实验后测量:</p> <ol style="list-style-type: none"> (1) 温度: 35 ± 2°C (2) Na₂S溶液浓度: 2% (质量百分比) (3) 时间: 2分钟 (4) 测试后, 试件放置于常温下1小时

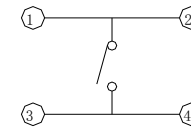
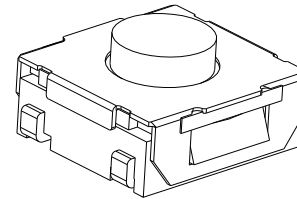
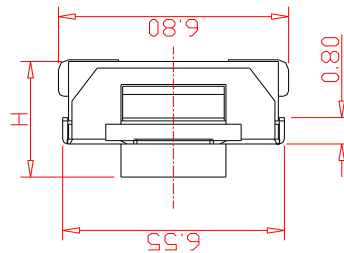
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7.7	防水等级 Waterproof grade	After test, Contact resistance: 500mΩ Max. Insulation resistance:10MΩ Min. 实验后: 接触电阻: 100mΩ Max. 绝缘电阻: 100MΩ Min.	1、IP6X:产品需抽负压, 放置沙尘箱中 2、IP67: 产品过回流焊后测试, 浸入规定压力的水中经规定的时间后外壳浸水量不至于达到有害程度,放置于一个潜水箱中,一般深度1米,试验时间为 30min; 试验后观察无漏水现象。



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3.1	3.5
4.3	4.5
5.0	



PCB. 焊接图



电路图

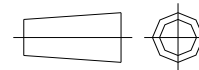
主要技术规格:

1. 额定值: 50mA DC12V
2. 接触电阻: $\leq 100m\Omega$
3. 操作力: 160/260/380gf
4. 行程: $0.25 \pm 0.1mm$
5. 绝缘电阻: $\geq 100M\Omega$
6. 抗电强度: 250V 50HZ 1Min.
7. 寿命: 200000 Cycles

材料:

- 本体: PPA (黑色)
- 按钮: 硅胶
- 卡件: 黄铜 (镀银)
- 弹片: 不锈钢 (镀银)
- 盖板: 不锈钢

第一视角



名称:

轻触开关

标记	处数	更改文件号	签名	日期	比例	一般公差	
设计		周炎		2016.05.08	单位 mm	>0.5~2	± 0.10
审核		石习军		2016.05.10	重量	>2~5	± 0.25
批准		王金刚		2016.05.12		>5~10	± 0.30
						角度	$\pm 0.5^\circ$

型号:

6.2*6.2包脚