

WELL BUYING INDUSTRIAL CO., LTD

APPROVAL SHEET

DESCRIPTION: DIP switch

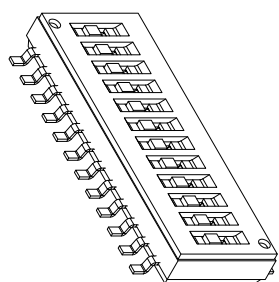
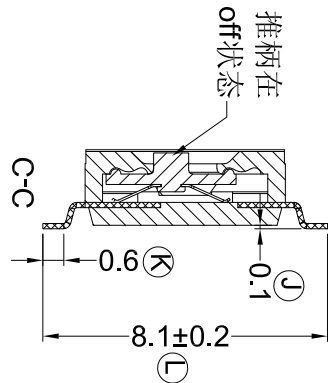
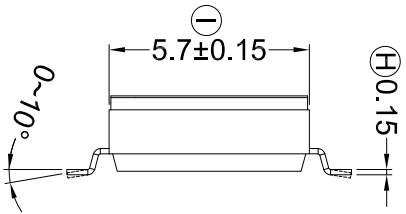
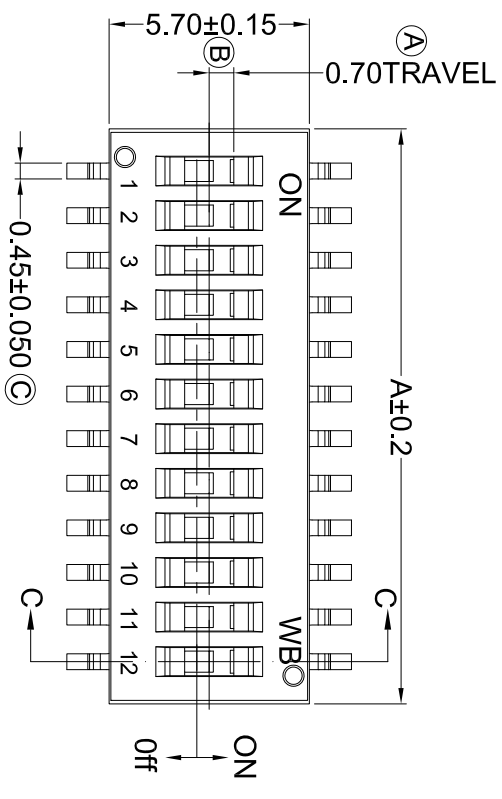
PART NO: DP001-M12-F-T-R

CUSTOMER: <u>Mouser</u>	CUSTOMER'S PART NO: _____
CUSTOMER SIGNATURE	COMMENTS

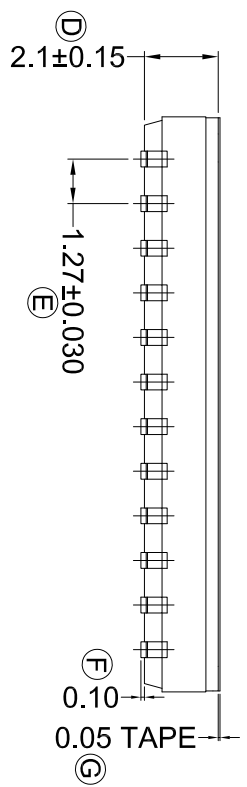
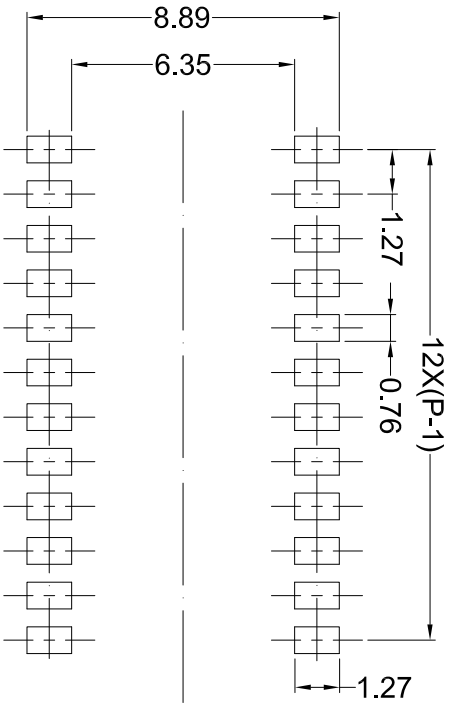


APPROVAL	REVIEW	PREPARE
<i>Kaven</i>	<i>EASON</i>	<i>Gina</i>

DIMENSION	TOLERANCE
X.	±0.3
X.X	±0.2
X.XX	±0.15
X.XXX	±0.1
ANGLES	±3°



P.B.C LAYOUT



PART NO.	NO.OF POS	DIM A
DP001-M02	2	3.67
DP001-M04	4	6.21
DP001-M06	6	8.75
DP001-M08	8	11.29
DP001-M10	10	13.83
DP001-M12	12	16.37

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. CRITICAL DIMENSIONS : 'A' ~ 'L'

DATA	APPROVAL	DESIGN	ENGINEERING CHANGE DESCRIPTION
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DATA	UNIT	MODE
2022/06/22	mm	PART
KAVEN	SCALE	2D FILE NAME
EASON	VIEW	DP001-M12-F-T-R
TYJ	VER.	3D FILE NAME
		DP001-M12-N-T-R

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1. Ratings (标准规格)

- 1.1 Mechanical Life 机械寿命 : 3000cycles minimum 最低 1000 次
- 1.2 Electrical Life 电器寿命 : 1000 cycles/1000 次
- 1.3 Contact Rating 接触电压 :
- 100mA at 50V DC Non-switching , 100 毫安 , 在 50 伏的非交流
- 25mA at 24V DC , 10mA at 50Vdc Switching 25 毫安在 24 伏 , 10 毫安 50 伏开关
- 1.4 Contact Resistance 接触电阻 :
- 50mohms maximum (initial) 50mohms 最高 (初次)
- 100mohms maximum (after life) 100mohms 最高 (寿命后)
- 1.5 Insulation Resistance 绝缘电阻 :
- Minimum at 100V DC between adjacent closed 最少在 100 伏关闭状态
- Contacts and also across open switch contacts. 接触也是导通时接触
- Initially 最初 : 200megaohms
- After life 最后寿命 : 100megaohms
- 1.6 Dielectric Strength 绝缘强度 :
- 300V AC , RMS, minimum voltage measured between adjacent closed contacts
- and also across open switch contacts (300 伏.有效值的.最低限度的电压
- 测量之间毗邻的封闭接触, 也导通接触)
- 1.7 Switch Capacitance 开关电容 : 5pf at 1 megahertz. 5pf 在 1 兆赫.
- 1.8 Operating Temperature 操作温度 : -40°C to +85°C
- 1.9 Storage Temperature 储存温度 : -40°C to +85°C
- 2.0 Test Condition 试验条件 : The standard test shall be 5~35°C temperature
- and 45~85% relative humidity 860~1060Hpa atmospheric pressure unless otherwise
- specified in case of any question happen retest condition shall specify by
- temperature 20±2°C , 65±5%RH and 860~1060Hpa (标准测试应为 5-35°C 的温度和 45-85%
- 相对湿度 860-1060Hpa 大气压力除非另有注明。如有任何问题发生, 在试验条件, 应
- 明确规定由温度 : 20±2°C , 湿度 65±5% 和 860-1060Hpa)

2. Materials 材料 :

- 2.1 Terminals Contact 接触面 : copper alloy , gold plated , over nickel 铜合金 , 底镍镀金
- 2.2 Terminals 端子 : Copper alloy , gold plated , over nickel 铜合金 , 底镍镀金
- 2.3 Base 本体 : HTN grade thermoplastic/black color 黑色塑胶
- 2.4 Cover 上盖 : HTN grade thermoplastic/black color 黑色塑胶
- 2.5 Actuator 推钮 : LCP grade thermoplastic/white color 白色塑胶
- 2.6 PI Film 黄膜 : polyimide film/yellow color 黄色 PI 薄膜

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3. Processing 配置操作:

- 3.1: Switch operation and taping 开关操作及贴防水胶
 - 3.1-1 Use tweezers or ball point pen for operation(使用镊子或圆珠笔操作)
 - 3.1-2 Flux cleaning should be done without removing the tape 用焊剂时应不除去防水胶.
 - 3.1-3 If the tape is removed, it adhered less than before when it is placed back on, possibly causing flux inflow. (如果除去防水胶, 他的持久性比之前更少, 且可能引起焊剂的流入)
 - 3.1-4 Sealed switches withstand aqueous, detergent and isopropyl alcohol washing (密封式开关侵入到水溶液中, 用洗调剂和异丙醇清洗)

4. Electrical characteristic 电器特性:

ITEM 项目	TEST DESCRIPTION 测试描述	TEST CONDITIONS SPECIFICATION 测试条件说明	SPECIFICATION 说明
4.1	Contact resistance 接触电阻	To be measure with AC 1kHz ± 200Hz(Max20mV.Max50mA) or 10mA.5V DC 1 千赫±200Hz (在最大电压 20mV.最大电流 50mA) 或 10mA, 5V 直流测试	Max50m 最大 50 毫欧
4.2	Insulation resistance 绝缘电阻	To be measure with an insulation measuring device of 500V DC between all the terminals and between the terminals and the frame for 1minute ±5 seconds (在接触端子或排脚之间输入 500V 直流电压端分钟±5 秒)	Min 100M 最小 100 兆欧
4.3	Dielectric breakdown voltage (耐电压强度)	AC 500V(50-60Hz, 2mAcurrent)being applied between all the adjacent terminals and between the terminal and frame for 1 minute(在接触端子或排脚之间输入 AC 500V (50-60 赫磁) 电压.一分钟感应电流为 2mA.按以上方法进行测试)	No breakdown insulation 没有绝缘破损异常

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ITEM 项目	TESEDESCRIPTION 测试描述	TEST CONDITIONSSPECIFICATION 测试条件说明			SPECIFICATION 说明
4.4	Switch capacitance 电容测量	To be measured with frequency 1 Mhz±10kHz applied between adjacent terminal and circuit (频率为 1Mhz±10kHz. 适用于相邻排脚和电路)			Max 5pf 最大 5pf
5.Mechanical characteristic 机械特性:					
ITEM 项目	TESEDESCRIPTION 测试描述	TEST CONDITIONSSPECIFICATION 测试条件说明			SPECIFICATION 说明
5.1	Operation force 操作力	Applied in the direction of operation (在同一方向)			Max 500gf (最大 500gf 可正常推动)
5.2	Terminal strength 端子强度	Measurement in made with A static load applied to the foot of the control unit the operating direction a static force of 500gf being applied in one direction on the tip of the terminal for 1 minute one time each terminal (在同一个方向加上 500gf 的力度测试, 时间为一分钟)			Nobendingordefl ectionexperience dtheterminalmay be bent. but shall notbreakordama ge theinsulation material (同一时间内, 每个端子没有经过弯曲或偏转, 等异常满足于机械电器性能)
5.3	Control unit strength 控制强度	A load of 1kgf is applied in the operating direction and pulling direction of the control unit for 15 seconds (负重 1kgf 朝操作方向和牵引方向测试 15 秒)			Electricalcharact eristic ofthe (4) above shall be assured 电气特性符合上面 (4) 要求

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6.Reliability 可靠性					
ITEM 项目	TESEDESCRIPTION 测试描述	TEST CONDITIONSSPECIFICATION 测试条件说明		SPECIFICATION 说明	
6.1	Cold resistance 耐寒性	Switch for testing being kept in the conditions at $-40 \pm 2^{\circ}\text{C}$ in temperature for 96 hours and in a normal ambient condition for one hour then to be measured within one hour (drops of water being taken away) (开关测试条件保持在 $-40 \pm 2^{\circ}\text{C}$ 的温度下, 为 96 小时。放置在一个正常的环境条件下一小时后测试)		Contact resistance (4.1) Max 100m Ω insulation resistance (4.2) Min 100M Ω dielectric breakdown voltage ac 500V 1 minute no breakdown insulation operating force (5.1) $\pm 30\%$ gf before test there shall be	
6.2	Dry heat resistance 耐热性	Switch for testing being kept in the conditions at $85 \pm 2^{\circ}\text{C}$ in temperature for 96 hours and in a normal ambient condition for one hour then to be measured within one hour (开关测试被放在条件为 $85 \pm 2^{\circ}\text{C}$ 的温度下为 96 小时, 放置一个在正常的环境条件下一小时后测试.		no defects in appearance or in the mechanical functions 接触电阻: (4.1 max 100m Ω 绝缘电阻) 绝缘电阻: (4.2) Min100M Ω 电压, 交流 500v) 一分钟无击穿绝缘控制力 (5.1) $\pm 30\%$ gf, 然后测试不得有任何缺陷, 在外部, 还是存在机械功能.	
6.3	Humidity resistance 防潮湿度	Switch for testing being kept in the conditions at $40 \pm 2^{\circ}\text{C}$ in temperature and 90~95% RH for 96 hours and in a normal ambient condition for one hour then measured within one hour.		Contact resistance (4.1) Max100m Ω insulationresistance (4.2) Min 100M Ω dielectricbreakdownvoltageAC500V1minutenobreakdown insulationoperating force (5.1) $\pm 30\%$ gf before test there shall benodefects inappearanceorinthemechanical functions	

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6.3	Humidity resistance 防潮湿度	(放置 40±2℃ 试验的相对湿度为 90~95% 环境中测试 96 小时后, 再将其放置正常环境 1 小时后在测.)		(接触电阻: (4.1)Max 100m 绝缘电阻: (4.2)Min100M 电压:AC 500v 1 分钟无击穿绝缘.操作步骤应在 (5.1)±30%gf 测试, 不应有任何缺陷, 在外部。还是存在机械性能.)	
6.4	Salt-spray test 盐雾试验	The sample is allowed to stand the test chamber controlled to 35±2℃ in temperature and 5±1% (weight ratio)salt-water concentration for 24±1 hour and is subjected to test then, salt deposits attached to the sample are washed away with water. 【样品经受在试验控制温度 35±2℃, 在高温和 5±1%(重量比)盐水浓度为 24±1 小时, 并因此而遭受的试验, 然后, 把试验品上的盐层冲洗。】		Shall be free from functionally harmful fust (不影响功能)	
6.5	Vibration test 振动试验	<p>The range of vibration: 10~55Hz total width</p> <p>Of vibration: 1.5mm the proportion of vibration: 10~55~10(Hz)</p> <p>Approx:1 Minute the variation</p> <p>Of the number of vibration: logarithmic or approx straight line</p> <p>He directions: 3 vertical directions including operation</p> <p>Direction duration: 2 hours each (total 6 hours)</p> <p>射程振动: 10~55Hz</p> <p>总宽度的振动: 1.5 毫米</p> <p>比例振动: 10-55-10 (赫兹)</p> <p>大约: 1 分钟变异的数目振动: 对数或约数 直线方向: 顶点垂直方向包括操作方向时间: 每 2 小时共计 6 小时.</p>		<p>Contact resistance (4.1) Max 50m insulation resistance (4.2) Min 100M dielectric breakdownvoltage (4.3) AC 500V 1minute no breakdowninsulationoperating force (5.1) ± 30 % gf before test asperindividualspecificationsno apparent effect onphysical appearance ormechanical functions</p> <p>接触电阻: (4.1) Max 50m 绝缘电阻:(4.2) Min 100M 电压(4.3)AC 500 V 1 分钟无击穿绝缘 控制力(5.1)±30 % gf 然后测试, 规格没有明显的影响外表和机械性能</p>	

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ITEM 项目	TESEDESCRIPTION 测试描述	TEST CONDITIONSSPECIFICATION 测试条件说明		SPECIFICATION 说明	
6.6	Thermal shock 温度循环	<p>After 5 cycle testing under the following conditions. the sample is allowed to stand under normal temperature and humidity condition for 2 hour. then measuring water drops should be eliminated【无负荷时辰-25±2℃（15 分钟）常温常湿 20±2℃（30 分 钟）85±2℃（30 分钟）循环放置重复做 5 次后，在常温常湿 的室内，无负荷放置一小时以上.】</p>		<p>Contact resistance(4.1) Max100mΩinsulationresistance(4.2)Min 100MΩ dielectricbreakdownvoltage: ac500v 1 minute no breakdowninsulationoperating force(5.1)±30% gf before test there shall benodefctsinappearance or in the mechanical接 functions 触电阻 :(4.1)Max100mΩ. 绝缘电阻 :(4.2)Min 100MΩ. 介电击穿电压:AC 500V. 1 分钟无击穿 绝缘控制力 (5.1)±30 % gf 然后测试，无论是外观还是机械性能上，都不得有任何缺陷.</p>	
6.7	Solder ability 焊接能力	<p>Reflow soldering: soldering temperature: 260 ± 5 °C , immersing time:3 ± 0.5 second Iron tip: 30w iron/ceramic tip temp: 320 ± 5 °C /3 sec per pin 波峰焊, 焊接温度: 260 ± 5 °C, 焊 接时间: 3 ± 0.5 , 烙铁焊接温度: 320 ± 5 °C, 焊接时间: 3 ± 0.5</p>		<p>More than 75% of the part immersedcan be covered with solder. 焊锡面积超过 75%</p>	

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(1) Reflow soldering:

device: In-line or batch system

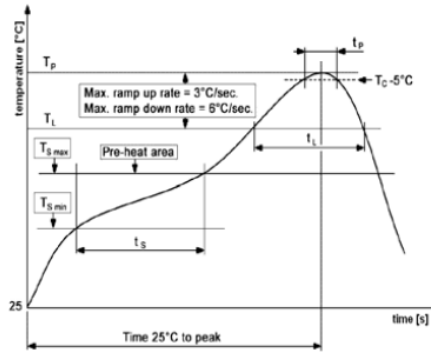
apply reflow soldering only once

(2) When soldering two or more terminals to the common land, use solder resist to solder them independently.

(1) 回流焊:

装置: 适用于回流焊只有一次。

(2) 当焊 2 个或 2 个以上的端子于同一个地方时, 应分开焊接。



$T_p = 260^{\circ}\text{C}$
 $t_p = 10\text{sec. max.}$

$T_l = 217^{\circ}\text{C}$
 $t_l = 90\text{sec. max.}$

$T_{S\max} = 200^{\circ}\text{C}$
 $T_{S\min} = 150^{\circ}\text{C}$
 $t_s = 120\text{sec. max.}$

7. Durability 耐久性

ITEM 项目	TEST DESCRIPTION 测试描述	TEST CONDITION SPECIFICATION 测试条件说明	SPECIFICATION 说明
7.1	Operation life with no load 无负荷下的运行寿命	2000 cycle operation at a rate of 15~20 cycle/minute 15-20 回/分钟 寿命最小 2000 次	Contact resistance: (4.1) Max 100m Ω Insulation resistance: (4.2) Min 100M Ω dielectric breakdown voltage: ac 500V.1 minute no breakdown insulation operating force (5.1) $\pm 30\%$ gf before test. there shall be no defects in appearance or in the mechanical functions. 接触电阻: (4.1) Max 100m Ω 绝缘电阻: (4.2) Min 100M Ω 介电击穿电压: AC 500V.1 分钟无击穿 绝缘控制力 (5.1) $\pm 30\%$ gf 然后测试无论是外观上, 还是在机械性能上都不得有任何缺陷
7.2	Operation life with load 载负荷下的运行寿命	DC 24V 25mA 1000 cycle operation at a rate of 15~20 cycle/minute 在 DC 24V 25mA 的条件下, 以 15-20 回/分钟, 寿命最小 1000 次.	

包装流程：图1 图2 图3 图4

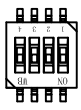


图1

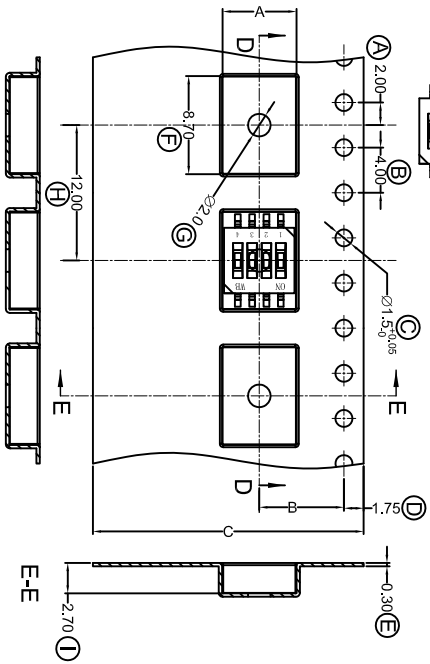


图2 成品载带

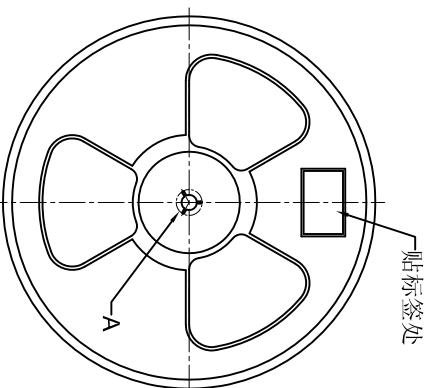


图3 盘装料盘

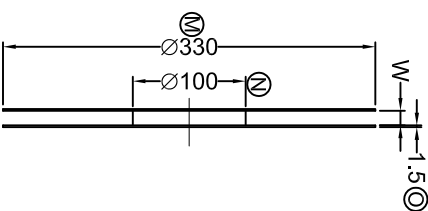


图4 (DP001-M02)每箱 (430X345X345) 包装数量25盘,共50000PCS/
(DP001-M04/M12)每箱包装数量12盘,共24000PCS。

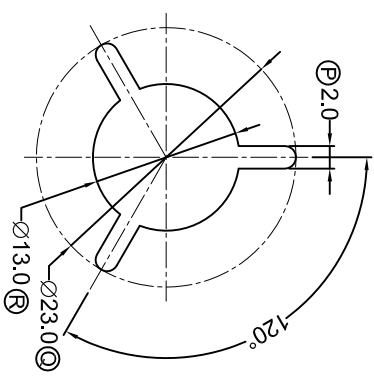


图5 盘装料盘

PART NO.	NO. OF POS	A	B	C	W	
DP001-M02	2	4.10	5.5	12	13	2000PCS
DP001-M04	4	6.60	7.5	24	25	2000PCS
DP001-M06	6	9.20	7.5	24	25	2000PCS
DP001-M08	8	11.70	11.5	24	25	2000PCS
DP001-M10	10	14.30	11.5	24	25	2000PCS
DP001-M12	12	16.80	11.5	24	25	2000PCS

备注：

图3 盘装料盘 每盘包装数量2000PCS/盘。

图4 (DP001-M02)每箱 (430X345X345) 包装数量25盘,共50000PCS/
(DP001-M04/M12)每箱包装数量12盘,共24000PCS。

1. CRITICAL DIMENSIONS : 'A' ~ 'R'

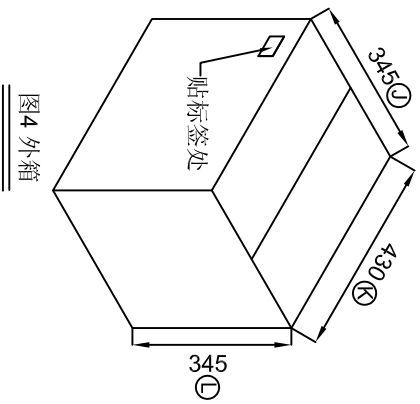


图4 外箱

DATA	APPROVAL	DESIGN	ENGINEERING CHANGE DESCRIPTION
2022/06/17	KAVEN	TYJ	
UNIT	SCALE	MODE	
mm	1:1	PART	DP001料带图
VIEW	VIEW	2D FILE NAME	DP001料带图
TYJ	VER.	3D FILE NAME	
01			