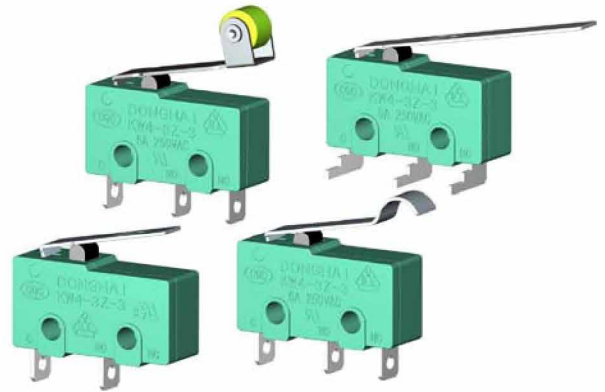


## KW4 型微動開關系列 Micro Switch KW4 Series

### ■ 性能特點 Features

- 具有微小觸點間隙，靈敏度高  
Small contact clearance, high sensitivity
- 快速動作、高精度、高重複性  
Snap action, high precision and high repeat accuracy
- 動作行程範圍可調節，動作壓力範圍寬  
Flexible operating travel, wide range of operating force
- 眾多不同的接線端子  
Wide variety of terminal types
- 各種不同形式的杠杆  
Wide variety of actuator forms
- 採用阻燃加增強的熱塑性材料  
Adopt flame-retarded and fiber enhanced thermoplastics
- 壽命長，可靠性高  
Long life cycles, high reliability
- 多種認證  
Various approvals



### ■ 應用 Application

廣泛應用於家用電器、醫療器械、辦公設備、儀錶儀器、電動工具、包裝機械、汽車電子等各種不同領域。

Widely applied in home appliances, medical devices, office facility, instrument and apparatus, electric motion tools, packing machinery, auto electronics etc.

例(examples)：電話 telephone、空調 air conditioner、電腦 computer、增濕器 humidifier、報警器 alarm、計時器 time recorder、焊槍 solder gun、傳真機 fax machine、遊戲控制杆 joystick、榨汁機 juice maker、攪拌機 mixer、玩具車 toy car、燈具 light、電熱水壺等 electric pot, etc.。

■ 產品型號規格 Ordering Information

KW4-3Z-3-         -

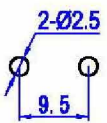
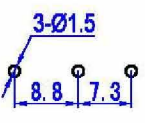
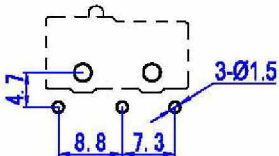
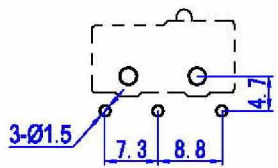
1            2            3            4            5            6            7            8

1 外形特徵 Outline characteristic	A : 塑殼外扣式 Hook up Style B : 塑殼合蓋式 Basic Style	6 額定值 Electrical ratings	1 : 5A 125/250VAC 2 : 5(2)A 250VAC 3 : 5A 250VAC
2 接觸形式 Circuit	1 : 轉換式 SPDT 2 : 常開 SPST-NO 3 : 常閉 SPST-NC	7 溫度等級 Degree of temperature	1 : T55 2 : T85 3 : T120
3 端子種類 Termination	1 : 2.8 快接端子 2.8x0.5 2.8 Quick connect 2 : 焊接端子 Solder Terminal 3 : PCB 端子 PCB terminal 4 : 右側 PCB 端子 Right side PCB terminal 5 : 左側 PCB 端子 Left side PCB terminal 0 : 非標準端子 Non-standard terminal	8 驅動形式 ( 杠杆類型 ) Actuator forms (Levers)	具體詳見說明 Refer to lever list L1 L2 .....
4 按鈕規格 Plunger category	1 : 1.3mm 2 : 1.4 mm 3 : 1.5mm 4 : 2.0 mm		
5 外殼顏色 Base colour	0 : 綠色 Green 1 : 黑色 Black		

## ■ 技術特性 Specifications

項目 Items	參數值 Value	
工作速度 Operating speed	0.1mm~1m/S	
工作頻率 Operating Frequency	機械頻率 60 次/分鐘 Mechanical 60cycles/min; 電氣頻率 25 次/分鐘 Electrical 25cycles/min	
絕緣電阻 Insulation resistance	≥100MΩ (DC500V)	
接觸電阻 Contact resistance	≤30mΩ (初始值) (Initial value)	
介電 強度 Test voltage	同極不相接端子之間(Between terminals of same polarity)	AC1000V 50/60HZ
	帶電金屬零件與地(外殼)之間 Between current-carrying metal parts and ground(case)	AC1500V 50/60HZ
抗震動性 Vibration resistance	10~55 HZ 1.5mm 雙振幅 Double amplitude	
抗衝擊 Shock resistance	破壞(Destruction)：動作力(OFF) > 0.5N：1000m/S <sup>2</sup> (approx. 100G) Max 動作力(OFF) ≤ 0.5N：500m/S <sup>2</sup> (approx. 50G) Max 故障(Malfunction)：動作力(OFF) > 0.5N：300m/S <sup>2</sup> (approx. 30G) Max 動作力(OFF) ≤ 0.5N：200m/S <sup>2</sup> (approx. 20G) Max	
壽命 Life expectancy	1. 機械壽命 ≥ 1000000 次 Mechanical ≥ 1000000cycles 2. 電氣壽命 ≥ 50000 次 Electrical ≥ 50000cycles	
觸電保護等級 Degree of protection against electric shock	Class I /Class II	
PTI (漏電起痕指數)	175	
安規認證 Approvals	UL CUL VDE TUV CE CQC	

## ■ 安裝孔尺寸 Mounting Hole Dimensions

	PCB端子 PCB terminal	左側PCB端子 Left side PCB terminal	右側PCB端子 Right side PCB terminal
			

■ 接觸形式說明圖 Circuit Illustration

转换式 SPDT	常开式 SPST-NO	常闭式 SPST-NC
1 转换型 SP change-over	2 常开型 Normally Open	3 常闭型 Normally Closed

■ 外形特徵 Outline Characteristic

外扣式 Hook up Style	合盖式 Basic Style
A	B

■ 標準端子規格 Termination

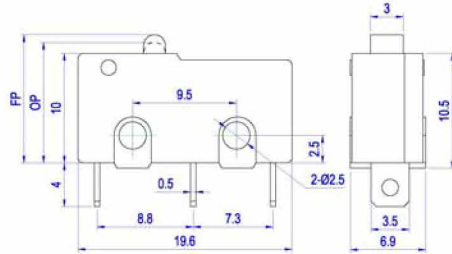
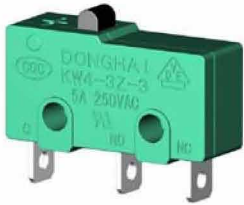
<p>焊接端子 Solder terminal</p> <p>2</p>	<p>快接端子 Quick connect terminal</p> <p>1</p>	<p>PCB端子 PCB terminal</p> <p>3</p>
<p>左側PCB端子 Left side PCB terminal</p> <p>4</p>	<p>右側PCB端子 Right side PCB terminal</p> <p>5</p>	

■ 驅動形式（杠桿類型） Actuator Forms (Levers)

L 杠桿規格種類		
<p>L1</p>	<p>L9</p>	<p>L17</p>
<p>L2</p>	<p>L10</p>	<p>L18</p>
<p>L3</p>	<p>L11</p>	<p>L19</p>
<p>L4</p>	<p>L12</p>	<p>L20</p>
<p>L5</p>	<p>L13</p>	<p>L21</p>
<p>L6</p>	<p>L14</p>	<p>L22</p>
<p>L7</p>	<p>L15</p>	<p>L23</p>
<p>L8</p>	<p>L16</p>	<p>L24</p>

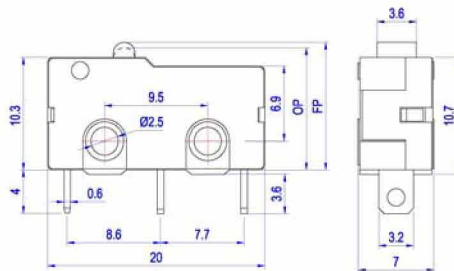
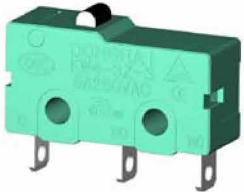


## ■ 外形尺寸和動作特性 Dimensions and Operating Characteristics



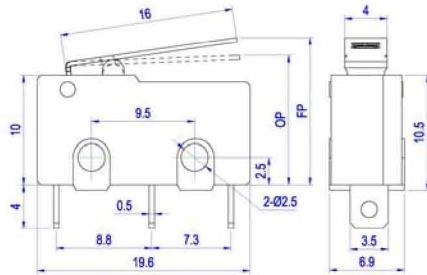
型號 Model	KW4-0Z-B123013L
OF (N)	0.2 ~ 3.0
MD Max (mm)	0.2
FP Max (mm)	12.0
OP Min (mm)	11.0

Item No: B123013L



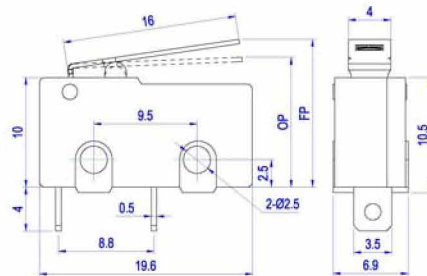
型號 Model	KW4-0Z-A123013L
OF (N)	0.2 ~ 3.0
MD Max (mm)	0.2
FP Max (mm)	12.2
OP Min (mm)	11.0

Item No: A123013L



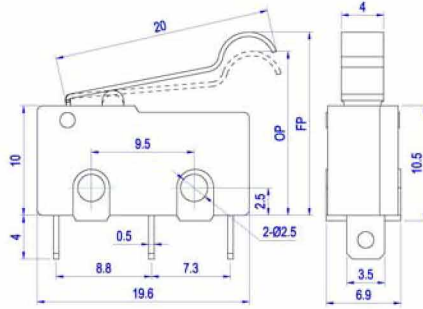
型號 Model	KW4-0Z-B123013L1
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.2
FP Max (mm)	14.5
OP Min (mm)	10.5

Item No: B123013L1



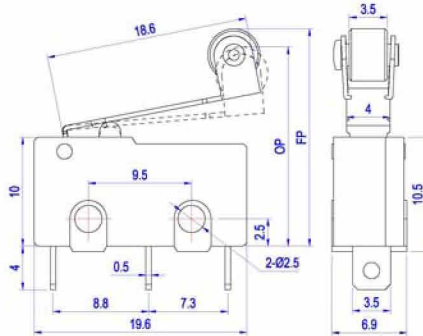
型號 Model	KW4-0Z-B223013L1
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.2
FP Max (mm)	14.5
OP Min (mm)	10.5

Item No: B223013L1



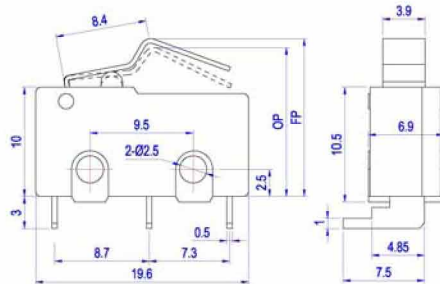
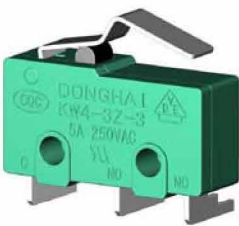
型號 Model	KW4-OZ-B123013L2
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.2
FP Max (mm)	17.0
OP Min (mm)	13.0

Item No: B123013L2



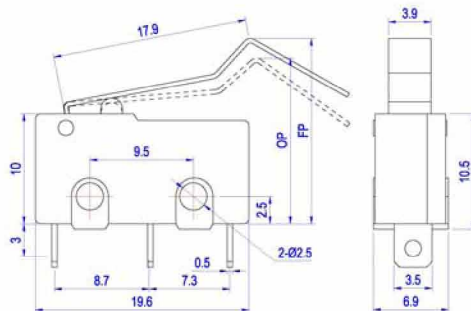
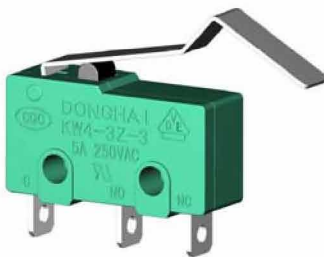
型號 Model	KW4-OZ-B123013L3
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.2
FP Max (mm)	19.5
OP Min (mm)	16.0

Item No: B123013L3



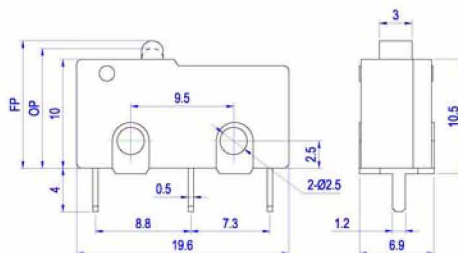
型號 Model	KW4-OZ-B143013L5
OF (N)	0.2 ~ 3.0
MD Max (mm)	0.6
FP Max (mm)	15.5
OP Min (mm)	14.1

Item No: B143013L5



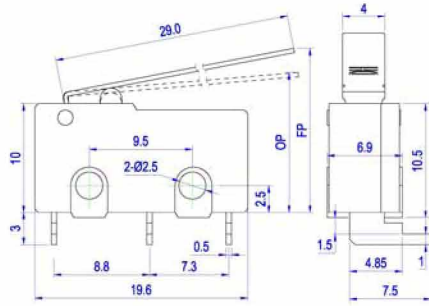
型號 Model	KW4-OZ-B123013L8
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.0
FP Max (mm)	18.0
OP Min (mm)	13.5

Item No: B123013L8



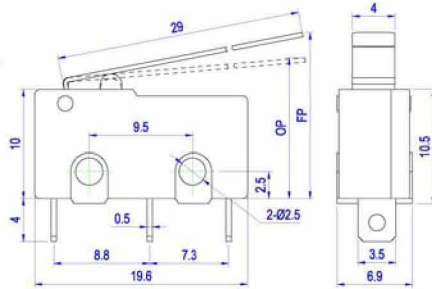
型號 Model	KW4-OZ-B133013L
OF (N)	0.2 ~ 3.0
MD Max (mm)	0.2
FP Max (mm)	12.0
OP Min (mm)	11.0

Item No: B133013L



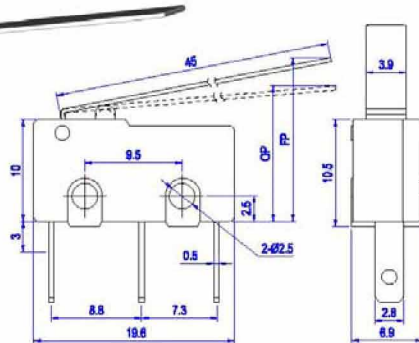
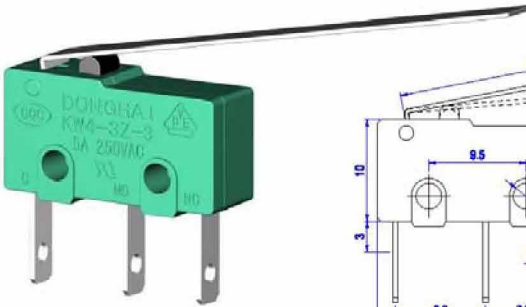
型號 Model	KW4-0Z-B153013L4
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.5
FP Max (mm)	18.0
OP Min (mm)	14.5

Item No: B153013L4



型號 Model	KW4-0Z-B123013L4
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.5
FP Max (mm)	18.0
OP Min (mm)	14.5

Item No: B123013L4



型號 Model	KW4-0Z-B123013L4
OF (N)	0.2 ~ 3.0
MD Max (mm)	1.5
FP Max (mm)	18.0
OP Min (mm)	14.5

Item No: B123013L4



## ■ 請正確使用開關 **Please Use the Switches Correctly**

### ● 關於和端子的鏈接 **Concerning the connection with terminals**

1. 將導線銲接到端子上時，請先將導線穿過端子孔後再進行銲接。  
**Please thread through the wire to the hole of the terminal first when joining the wire to the terminal.**
2. 烙鐵的容量應為 60W 以下，銲接時間在 3S 之內。若操作溫度過高或時間過長，可能導致開關特性劣化。  
**The iron capacity shall be below 60W, joint time within 3S. If operate temperature is too high or the joint time is too long, switch malfunction may happen.**
3. 請採用手工銲接。因為如果採用銲槽銲接，銲錫可能進入開關內部而導致接觸不良。  
**Please joint by hands. If jointing with wave soldering, soldering tin may enter the switch to cause the contact malfunction.**
4. 對於快接式端子，插套插入插片時，應避免在端子的橫向加力，以免引起端子變形和外殼破損。  
**Regarding the quick connect terminal, when inserting the slipcover, please do not exert transverse press to the terminal, in order to avoid terminal distort and cover breakage.**

### ● 關於安裝 **Concerning the installation**

1. 開關的安裝、拆卸和配線作業以及維護檢驗時，請務必斷開電源，否則會引起觸電和燒毀。  
**Please turn off the power when installing, disassembling, wiring work and maintenance check, other wise, electric shock and burn may happen.**
2. 安裝時，使用 2 個 M2.3 螺釘，用平墊圈、彈簧墊圈等緊固，並請使用 0.23~0.26N·m 的緊固轉矩。  
**When installing, please use 2 M2.3 screws, then tight it with flat washer, spring washer, and also tight with 0.23~0.26N·m torque.**
3. 開關請安裝在平面上。如果安裝面凹凸不平，可能導致開關歪斜、動作失常和外殼破損。  
**Please install switch on flat surface. If it is installed in uneven surface, switch deflection, malfunction and cover breakage may happen.**

### ● 關於絕緣距離 **Concerning insulation distance**

根據 IEC61058-1/EN 61058-1/GB15092.1 規定，本開關的最小絕緣層厚度為 1.1mm，端子和安裝板之間的最小空間距離為 1.6mm。如果無法確保零部件所要求的絕緣距離，請使用絕緣護罩或隔板來保證絕緣距離。  
**According to IEC61058-1/EN61058-1/GB15092.1, the least thickness insulation layer should be 1.1mm, the smallest space distance between the terminal and install board is 1.6mm. If the parts insulation distance cannot be guaranteed, please apply insulate cover or guard board to guarantee the insulation distance.**

### ● 關於微小負載電路中的使用 **Concerning the use in small load circuit**

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。  
**Use general load switch in small load circuit, bad contact may happen.**  
請參考下面在使用區域的範圍內使用開關，並根據需要插入觸電保護電路。  
**Please refer to the chart below. Use switch within using region, and apply contact protection circuit when necessary.**

