

DIP Switch

KSP Series

DIP Piano

Through Hole • SMD

2 ~ 10P

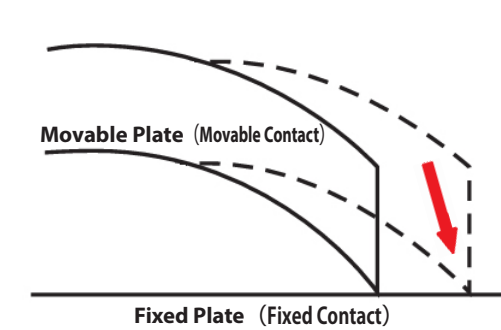
PianoType/
Through Hole Mounting



PianoType/SMD



Knife-edge High-pressure Contact



The knife-shaped tip of the movable contact penetrates into the fixed contact, providing a contact structure that is highly resistant to surface contamination and foreign particles.

Outline of the Series

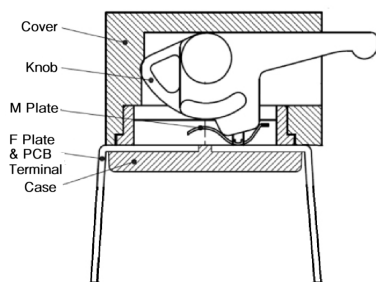
This is the flagship DIP switch series from OTAX Corporation, a global leader in DIP switch production.

Features of the Series

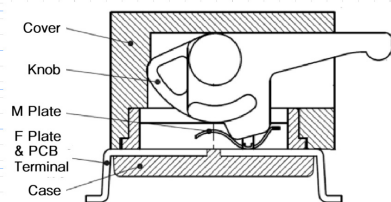
1. The knife-edge, high-pressure contact mechanism ensures stable connection even at micro-currents.
2. The high contact pressure prevents malfunctions caused by vibration and shock.
3. The terminal shape and external dimensions are equivalent to those of DIP-type semiconductor packages, allowing for easy automatic mounting.

Structure

Through Hole Type



SMDType



Common Specifications

Ratings	DC5V 10mA
Contact Resistance	50 mΩ Max. (Initial value)
Withstanding Voltage	AC300V 1 Minute
Insulating Resistance	100MΩMin.
Electrical Life	1,000 times
Operating Temperature Range	-40°C ~ +85°C
Storing Temperature Range	-40°C ~ +85°C
Storage Humidity Range	85%RHMax., Non-condensing
Operating Force	7.9N Max.
Number of Re-flow	2 回 Max.

Specifications of Materials

Part Name	Materials	Finish
Knob	Heat-resistant Polyamide	White
Cover	PPS	Black
Case	PPS	Black
Movable Plate (Movable Contact)	Copper Alloy	Gold Plating
Fixed Plate (Fixed Contact)	Copper Alloy	Gold Plating (Contact only)

* For products other than those listed above or for custom items, please contact us.

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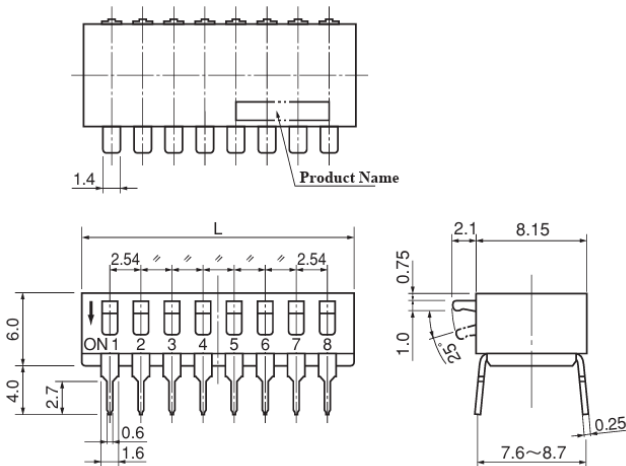
2 ~ 10P

Product Designations

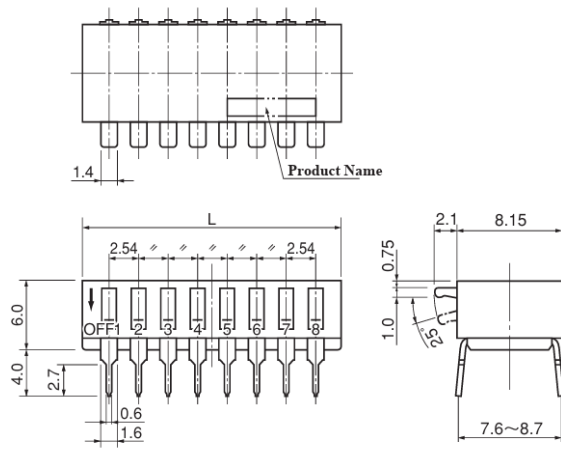
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Standard Dimensions (Through Hole Mountin Type)

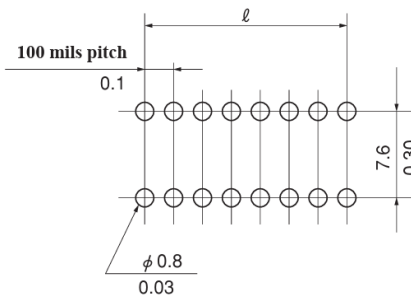
PianoType KSP □□□□



Piano (Down OFF) TypeKSPA □□□□



Mounting Hole Dimensions



Product Names and Dimensions

Product Name	Poles	L (mm)	ℓ (mm)
KSP22	2	7.0	2.54
KSPA22	2	7.0	2.54
KSP32	3	9.6	5.08
KSPA32	3	9.6	5.08
KSP42	4	12.1	7.62
KSPA42	4	12.1	7.62
KSP52	5	14.6	10.16
KSPA52	5	14.6	10.16
KSP62	6	17.2	12.70
KSPA62	6	17.2	12.70

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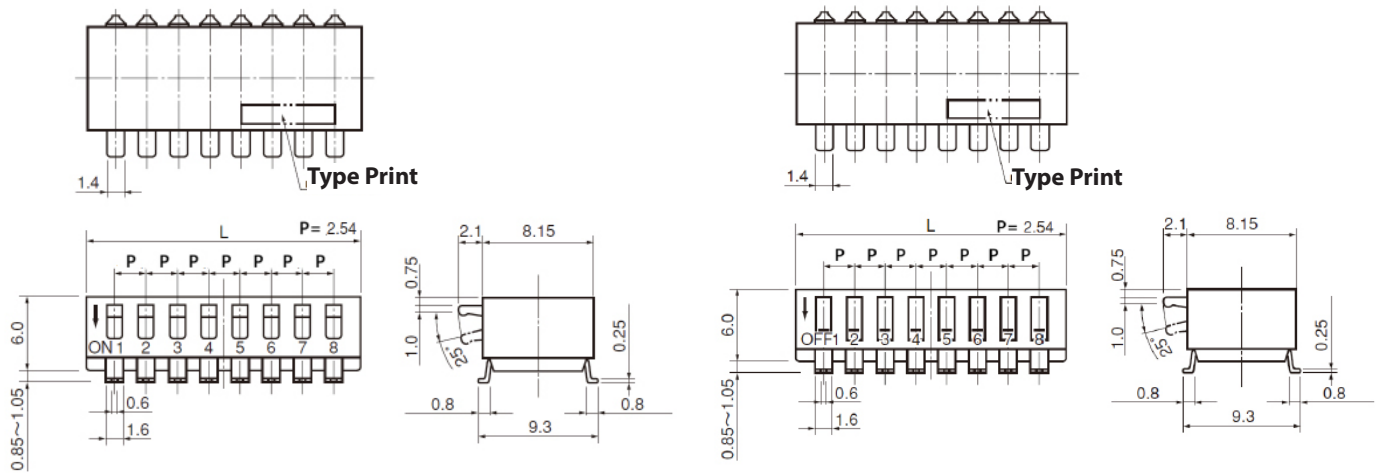
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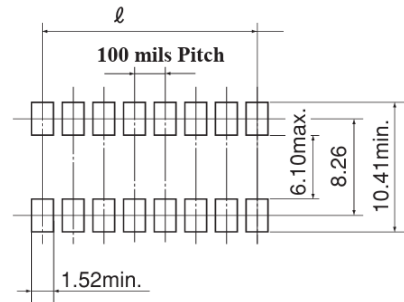
PianoType KSP □ □ S

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Mounting Land Dimensions

Product Names and Dimensions



Product Name	Poles	L (mm)	ℓ (mm)
KSP22S □	2	7.0	2.54
KSPA22S □			
KSP32S □	3	9.6	5.08
KSPA32S □			
KSP42S □	4	12.1	7.62
KSPA42S □			
KSP52S □	5	14.6	10.16
KSPA52S □			
KSP62S □	6	17.2	12.70
KSPA62S □			

Product Name	Poles	L (mm)	ℓ (mm)
KSP72S □	7	19.7	15.24
KSPA72S □			
KSP82S □	8	22.3	17.78
KSPA82S □			
KSP92S □	9	24.8	20.32
KSPA92S □			
KSP102S □	10	27.3	22.86
KSPA102S □			

Soldering Conditions

* Regarding the Soldering Conditions, please refer to [the separate data sheet](#). (Hand Soldering Condition is A.)

Cautions on Handling Products

- Cleaning agents such as alcohol-based, petroleum-based, ketone-based, and chlorine-based solvents can be used.
- The conditions for reflow soldering may vary depending on the dimensions of the printed circuit board and the assembly density in the actual production process. Please refer to the temperature profile in the separate datasheet in advance, and confirm the surface temperature and soldering condition of the mounted product before use.
- The knob is set to the OFF position upon delivery. Please keep it in this position through mounting, soldering, and cleaning processes.

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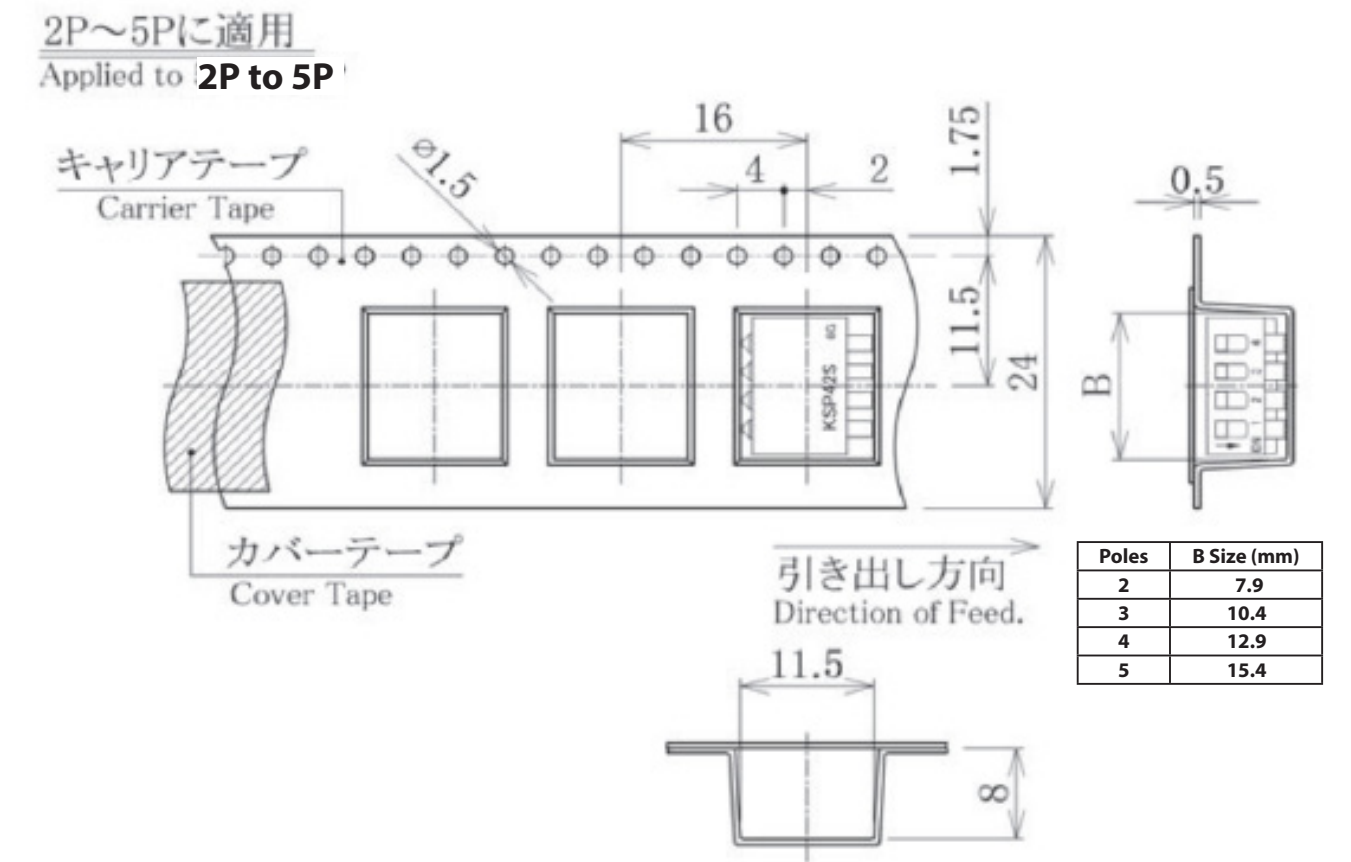
2 ~ 10P

Specifications of Box, Magaine and Reel

Q'ty in Box, Magazine

Poles	Q'ty per 1 Magazine (pcs)	Q'ty of Magagines per 1 Box (pcs)	Total Q'ty per 1 Box (pcs)
2	60	30	1,800
3	45	30	1,350
4	35	30	1,050
5	30	30	900
6	25	30	750
7	20	30	600
8	20	30	600
9	15	30	450
10	15	30	450

Tape-reel Dimension (DP ~ 5P)



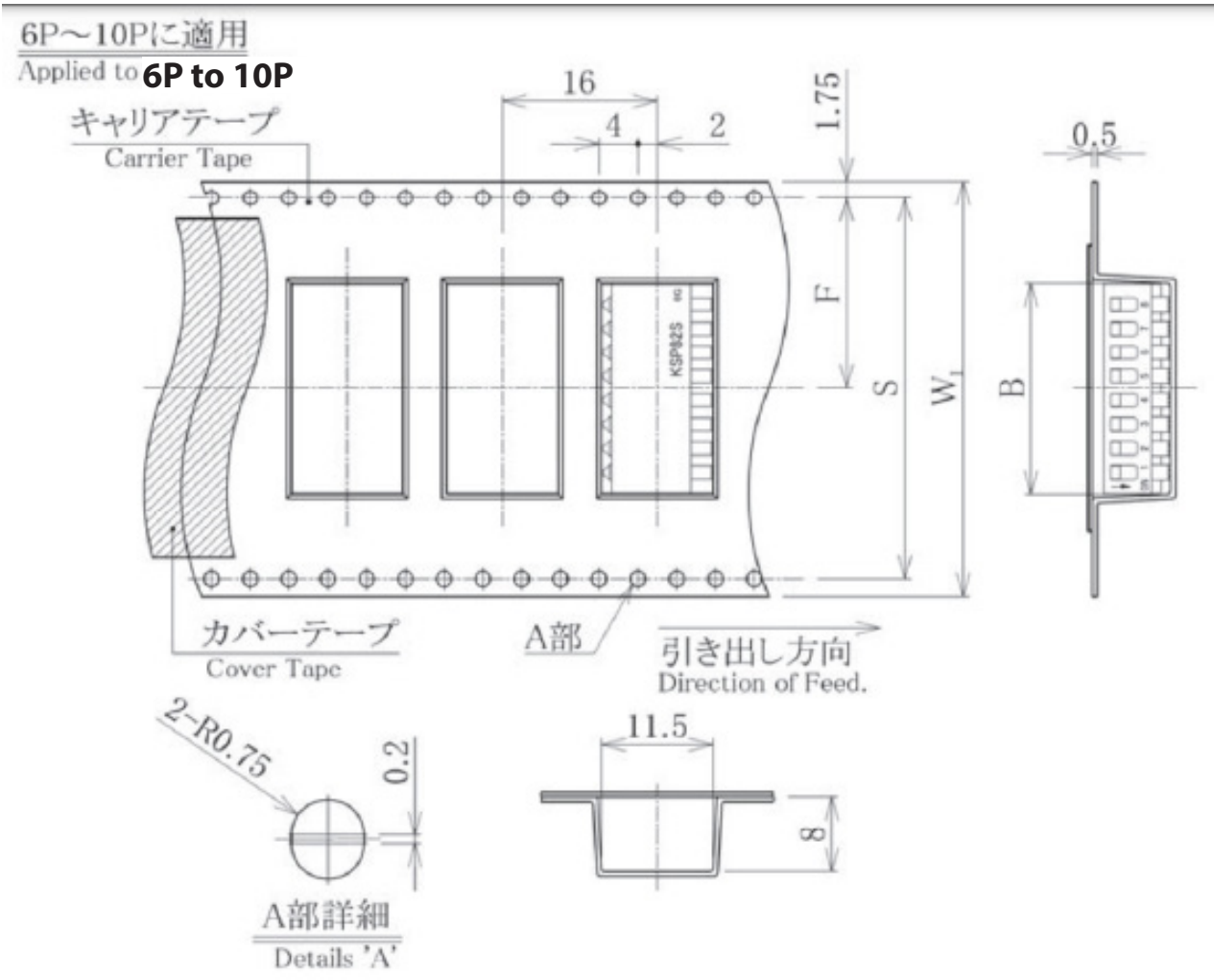
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Tape-reel Dimensions (6P ~ 10P)

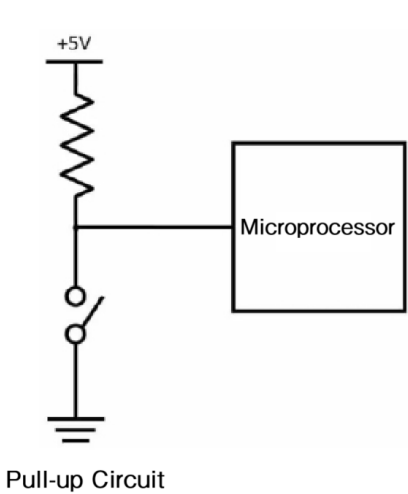


The Dimension of each part (mm)

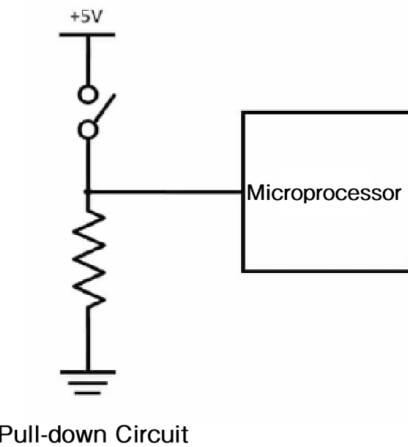
Poles	W ₁	S	F	B
6	32.0	28.4	14.2	18.0
7				20.5
8				22.7
9	44.0	40.4	20.2	25.5
10				28.1

Tips for Switches

Pull-up and Pull-down of a microprocessor



As a fundamental concept of microprocessors, one of the common stumbling blocks when first creating circuits using a microprocessor is understanding pull-up and pull-down resistors. As you may know, microprocessors operate using digital control with two values: High (1) and Low (0). Typically, the High level is connected to a power supply voltage known as Vdd (e.g., 5V, 3.3V, 1.7V, etc.). On the other hand, assuming that an unconnected pin will naturally be Low (0) is, in a sense, incorrect. This is because when a microprocessor’s pin is left unconnected, it is said to be “floating” or in a “Hi-Z (high impedance)” state, which is electrically unstable and prone to noise and interference.



Therefore, it is standard practice to connect each pin to either the power supply (Vdd) or ground (Vss) through a resistor. When connected to Vdd, this is called a “pull-up” (which sets the default state to High), and when connected to Vss, it is called a “pull-down” (which sets the default state to Low). This approach electrically forces each pin into either the High or Low state.

Incidentally, in the case of a pull-up configuration, if a DIP switch is connected, turning the switch ON connects the line to ground, resulting in a digital Low (0). When the switch is OFF, the line remains pulled up to High (1).