Partly to Be Discontinued:
Agency standard type
Last time buy: September 30, 2016

Ultra-miniature Size Sealed Switches

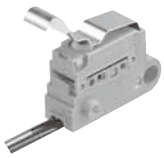
TURQUOISE SWITCHES ABJ (BJ) SWITCHES


Terminal type


Mounting hole 2.3 mm type


Wire leads bottom type


Mounting hole 2.3 mm type


Wire leads side type


Long stroke type

RoHS compliant

FEATURES

- **Ultra-miniature size, High sealing performance sealed switches**
- **Elastomer double molding technology contribute to steady sealing quality**
- **Superior operating position precision**
- **Long stroke type is available**

TYPICAL APPLICATIONS

- **Electric pot**
- **Automotive (opening and shutting detection for doors)**

ORDERING INFORMATION

ABJ □ □ □ □ □ □ !□

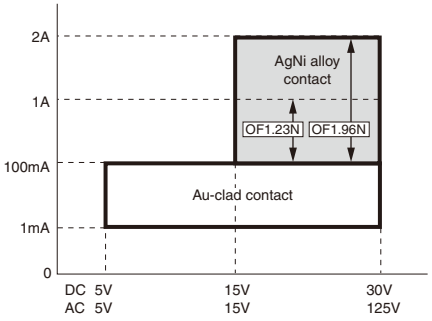
- Terminal
  4: Solder terminal
  5: PC board terminal
  6: Wire leads bottom type
  7: Wire leads right side type
  8: Wire leads left side type
- Actuator
  0: Pin plunger
  2: Hinge lever
  4: Simulated roller lever
  6: Roller lever
  8: Leaf lever (Mounting hole 3 mm lead wire type only)
  L: Long stroke type
- Operating Force (OF) (max.) by pin plunger
  4: 1.23 N
  6: 1.96 N
  7: 2.45 N
  (Long stroke type only)
- Agency standard
  Nil: Agency standard un-acquiring
  9: UL/CSA
  (Terminal type only)
- Size of mounting hole
  1: Mounting hole 1.2 mm (PC board, Solder and Wire leads terminals)
  2: Mounting hole 2.3 mm (Solder and Wire leads terminals)
  3: Mounting hole 3 mm (Leaf lever type only)
  4: Fixed pin (right side pin) type
  5: Fixed pin (left side pin) type
- Contact form
  1: SPDT (COM NO NC)
  2: SPST-NC (Wire leads type only) (COM NC)
  3: SPST-NO (Wire leads type only) (COM NO)
- Contact material
  0: AgNi alloy
  1: AgNi alloy + Au-clad

Note: Not every combination is available. Please refer to the following table, “PRODUCT TYPES”.

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COMBINATION OF OPERATING FORCE (OF) AND APPLICABLE CURRENT RANGE (Reference)



Note) OF: Value of pin plunger

PRODUCT TYPES

■ Terminal type: Mounting hole 1.2mm type / 2.3mm type

1) AgNi alloy contact

Partly to Be Discontinued: Agency standard type

Actuator	Operating Force OF Max.	Mounting hole 1.2 mm type		Mounting hole 2.3 mm type
		Solder terminal	PC board terminal	Solder terminal
Pin plunger	1.23 N	ABJ1410409	ABJ1510409	ABJ2410409
	1.96 N	ABJ1410609	ABJ1510609	ABJ2410609
Hinge lever	0.39 N	ABJ1412409	ABJ1512409	ABJ2412409
	0.64 N	ABJ1412609	ABJ1512609	ABJ2412609
Simulated roller lever	0.39 N	ABJ1414409	ABJ1514409	ABJ2414409
	0.64 N	ABJ1414609	ABJ1514609	ABJ2414609
Roller lever	0.39 N	ABJ1416409	ABJ1516409	ABJ2416409
	0.64 N	ABJ1416609	ABJ1516609	ABJ2416609

2) AgNi alloy + Au-clad contact

Partly to Be Discontinued: Agency standard type

Actuator	Operating Force OF Max.	Mounting hole 1.2 mm type		Mounting hole 2.3 mm type
		Solder terminal	PC board terminal	Solder terminal
Pin plunger	1.23 N	ABJ1410419	ABJ1510419	ABJ2410419
	1.96 N	ABJ1410619	ABJ1510619	ABJ2410619
Hinge lever	0.39 N	ABJ1412419	ABJ1512419	ABJ2412419
	0.64 N	ABJ1412619	ABJ1512619	ABJ2412619
Simulated roller lever	0.39 N	ABJ1414419	ABJ1514419	ABJ2414419
	0.64 N	ABJ1414619	ABJ1514619	ABJ2414619
Roller lever	0.39 N	ABJ1416419	ABJ1516419	ABJ2416419
	0.64 N	ABJ1416619	ABJ1516619	ABJ2416619

■ Wire leads (bottom type): Mounting hole 1.2mm type

Note: With agency standard type is not available

1) AgNi alloy contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ161040	ABJ162040	ABJ163040
	1.96 N	ABJ161060	ABJ162060	ABJ163060
Hinge lever	0.39 N	ABJ161240	ABJ162240	ABJ163240
	0.64 N	ABJ161260	ABJ162260	ABJ163260
Simulated roller lever	0.39 N	ABJ161440	ABJ162440	ABJ163440
	0.64 N	ABJ161460	ABJ162460	ABJ163460
Roller lever	0.39 N	ABJ161640	ABJ162640	ABJ163640
	0.64 N	ABJ161660	ABJ162660	ABJ163660

2) AgNi alloy + Au-clad contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ161041	ABJ162041	ABJ163041
	1.96 N	ABJ161061	ABJ162061	ABJ163061
Hinge lever	0.39 N	ABJ161241	ABJ162241	ABJ163241
	0.64 N	ABJ161261	ABJ162261	ABJ163261
Simulated roller lever	0.39 N	ABJ161441	ABJ162441	ABJ163441
	0.64 N	ABJ161461	ABJ162461	ABJ163461
Roller lever	0.39 N	ABJ161641	ABJ162641	ABJ163641
	0.64 N	ABJ161661	ABJ162661	ABJ163661

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■ Wire leads bottom type: Mounting hole 2.3mm type

Note: With agency standard type is not available

1) AgNi alloy contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ261040	ABJ262040	ABJ263040
	1.96 N	ABJ261060	ABJ262060	ABJ263060
Hinge lever	0.39 N	ABJ261240	ABJ262240	ABJ263240
	0.64 N	ABJ261260	ABJ262260	ABJ263260
Simulated roller lever	0.39 N	ABJ261440	ABJ262440	ABJ263440
	0.64 N	ABJ261460	ABJ262460	ABJ263460
Roller lever	0.39 N	ABJ261640	ABJ262640	ABJ263640
	0.64 N	ABJ261660	ABJ262660	ABJ263660

2) AgNi alloy + Au-clad contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Pin plunger	1.23 N	ABJ261041	ABJ262041	ABJ263041
	1.96 N	ABJ261061	ABJ262061	ABJ263061
Hinge lever	0.39 N	ABJ261241	ABJ262241	ABJ263241
	0.64 N	ABJ261261	ABJ262261	ABJ263261
Simulated roller lever	0.39 N	ABJ261441	ABJ262241	ABJ263441
	0.64 N	ABJ261461	ABJ262461	ABJ263461
Roller lever	0.39 N	ABJ261641	ABJ262641	ABJ263641
	0.64 N	ABJ261661	ABJ262661	ABJ263661

■ Wire leads bottom leaf lever type: Mounting hole 3mm type

Note: With agency standard type is not available

1) AgNi alloy contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Leaf lever	0.98 N	ABJ361840	ABJ362840	ABJ363840
	1.27 N	ABJ361860	ABJ362860	ABJ363860

2) AgNi alloy + Au-clad contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Leaf lever	0.98 N	ABJ361841	ABJ362841	ABJ363841
	1.27 N	ABJ361861	ABJ362861	ABJ363861

■ Wire leads side type: Fixed pin (right side pin) type

Note: With agency standard type is not available

1) AgNi alloy contact

Actuator	Operating Force OF Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ472840	ABJ473840
	1.27 N	Left	ABJ482840	—
	1.76 N	Right	ABJ472860	ABJ473860
	1.76 N	Left	ABJ482860	—

2) AgNi alloy + Au-clad contact

Actuator	Operating Force OF Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ472841	ABJ473841
	1.27 N	Left	ABJ482841	—
	1.76 N	Right	ABJ472861	ABJ473861
	1.76 N	Left	ABJ482861	—

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■ Wire leads side type: Fixed pin (left side pin) type
Note: With agency standard type is not available

1) AgNi alloy contact

Actuator	Operating Force OF Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ572840	ABJ573840
	1.27 N	Left	ABJ582840	—
	1.76 N	Right	ABJ572860	ABJ573860
	1.76 N	Left	ABJ582860	—

2) AgNi alloy + Au-clad contact

Actuator	Operating Force OF Max.	Wire leads direction	Wire leads type	
			SPST-NC	SPST-NO
Leaf lever	1.27 N	Right	ABJ572841	ABJ573841
	1.27 N	Left	ABJ582841	—
	1.76 N	Right	ABJ572861	ABJ573861
	1.76 N	Left	ABJ582861	—

■ Wire leads side type: Mounting hole 3mm type
Note: With agency standard type is not available

1) AgNi alloy contact

Actuator	Operating Force OF Max.	Wire leads direction	Wire leads type
			SPST-NC
Leaf lever	1.27 N	Left	ABJ382840
	1.76 N	Left	ABJ382860

2) AgNi alloy + Au-clad contact

Actuator	Operating Force OF Max.	Wire leads direction	Wire leads type
			SPST-NC
Leaf lever	1.27 N	Left	ABJ382841
	1.76 N	Left	ABJ382861

■ Wire leads bottom long stroke type: Mounting hole 2.3mm type
Note: With agency standard type is not available

1) AgNi alloy contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Pin plunger (Horizontal)	2.45 N	ABJ261L70	ABJ262L70	ABJ263L70

2) AgNi alloy + Au-clad contact

Actuator	Operating Force OF Max.	Wire leads type	Wire leads type	
		SPDT	SPST-NC	SPST-NO
Pin plunger (Horizontal)	2.45 N	ABJ261L71	ABJ262L71	ABJ263L71

SPECIFICATIONS

■ Contact rating

	Operating Force OF Max.	Standard rating	Low-level circuit rating
AgNi alloy contact type	1.76 N, 1.96 N	2 A 125 V AC 2 A 30 V DC	—
	1.23 N, 1.27 N	1 A 125 V AC 1 A 30 V DC	—
Long stroke type AgNi alloy contact	2.45 N	1 A 125 V AC 1 A 30 V DC	—
AgNi alloy + Au-clad contact type	1.23 N, 1.27 N 1.76 N, 1.96 N	0.1 A 125 V AC 0.1 A 30 V DC	5 mA 6 V DC 2 mA 12 V DC 1 mA 24 V DC
Long stroke type AgNi alloy + Au-clad contact type	2.45 N	0.1 A 125 V AC 0.1 A 30 V DC	5 mA 6 V DC 2 mA 12 V DC 1 mA 24 V DC

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■ Characteristics

Item			Specifications
Expected life	Mechanical life (OT: Specified value)		Leaf lever type: Min. 5×10^5 (at 60 cpm) Wire leads side type: Min. 3×10^5 (at 60 cpm) Other types: Min. 10^6 (at 60 cpm)
	Electrical life (OT: max.)	AgNi alloy contact type	Min. 3×10^4 (at 20 cpm) (at rated load)
	Electrical life (OT: max.)	AgNi alloy + Au-clad contact type	Min. 10^5 (at 20 cpm) (at rated load)
Insulation resistance			Min. 100 MΩ (at 500 V DC insulation resistance meter)
Dielectric strength	Between non-continuous terminals		600 Vrms
	Between each terminal and other exposed metal parts		1,500 Vrms
	Between each terminal and ground		1,500 Vrms
Vibration resistance (Pin plunger type)			10 to 55 Hz at single amplitude of 0.75 mm (Contact opening max. 1 msec.)
Shock resistance (Pin plunger type)			Min. 294 m/s² (Contact opening max. 1 msec.)
Contact resistance (Initial)	AgNi alloy contact type		Terminal type: Max. 50 mΩ Wire lead type: Max. 100 mΩ (By voltage drop 1 A 6 to 8 V DC)
	AgNi alloy + Au-clad contact type		Terminal type: Max. 100 mΩ Wire lead type: Max. 150 mΩ (By voltage drop 0.1 A 6 to 8 V DC)
Allowable operating speed (at no load)			1 to 500 mm/sec.
Max. operating cycle rate (at no load)			120 cpm (Long stroke type: 60 cpm)
Ambient temperature			–40°C to +85°C
Unit weight			Approx. 0.5 g (Terminal type)
Protection grade			IP67 (except exposed terminal part of terminal type)

■ Operating characteristics

Type of actuator		8th digit of Part No.	Operating Force OF, Max.	Release Force RF, Min	Pretravel PT, Max.	Movement Differential MD, Max.	Overtravel OT, Min.	Operating Position OP
Pin plunger		4	1.23N	0.15N	0.6mm	0.12mm	0.25mm	Mounting hole: 1.2 type 5.5±0.2mm Mounting hole: 2.3 type 7.0±0.2mm
		6	1.96N	0.25N				
Hinge lever		4	0.39N	0.029N	3.0mm	0.5mm	0.5mm	Mounting hole: 1.2 type 6.8±1.0mm Mounting hole: 2.3 type 8.3±1.0mm
		6	0.64N	0.049N				
Simulated roller lever		4	0.39N	0.029N	3.0mm	0.5mm	0.5mm	Mounting hole: 1.2 type 9.8±1.0mm Mounting hole: 2.3 type 11.3±1.0mm
		6	0.64N	0.049N				
Roller lever		4	0.39N	0.029N	3.0mm	0.5mm	0.5mm	Mounting hole: 1.2 type 13.1 ±1.0mm Mounting hole: 2.3 type 14.6±1.0mm
		6	0.64N	0.049N				
Leaf lever	Wire leads bottom type	4	0.98N	0.20N	6.0mm	1.0mm	2.5mm	Mounting hole: 3.0 type 16.0±2.0mm
		6	1.27N	0.29N	6.0mm	1.0mm	2.5mm	Mounting hole: 3.0 type 16.0±2.0mm
	Wire leads side type	4	1.27N	0.22N	2.6mm	0.5mm	1.4mm	Fixed pin type 10.7±0.7mm Mounting hole: 3.0 type 16.25±0.7mm
		6	1.76N	0.26N	2.6mm	0.5mm	1.4mm	Fixed pin type 10.7±0.7mm Mounting hole: 3.0 type 16.25±0.7mm
Long stroke type		7	2.45N	0.20N	—	0.5mm	2.0mm	2.5±0.4mm

Note: The OP differs between the 1.2 mm and 2.3 mm dia. mounting hole types.

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DIMENSIONS

(Unit: mm) General tolerance: ±0.25

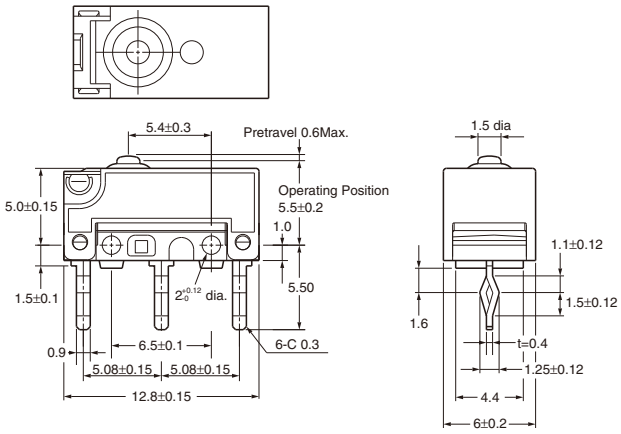
The CAD data of the products with a CAD Data mark can be downloaded from: http://industrial.panasonic.com/ac/e/

■ PC board terminal: Mounting hole 1.2 mm type Pin plunger

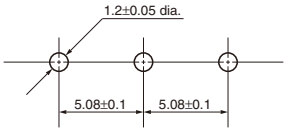
CAD Data



External dimensions



PC board pattern



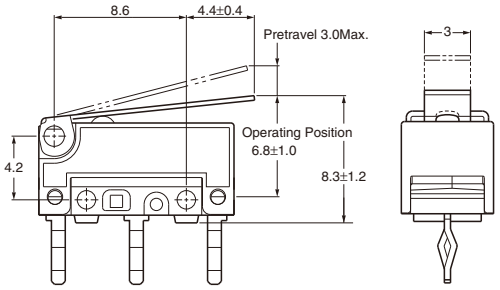
Pretravel PT, Max.		0.6mm
Movement Differential MD, Max.		0.12mm
Overtravel OT, Min.		0.25mm
Operating Position OP	Distance from mounting hole	5.5±0.2mm
	Distance from stand-off	7±0.3mm

■ PC board terminal: Hinge lever

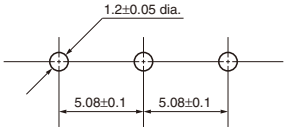
CAD Data



External dimensions



PC board pattern



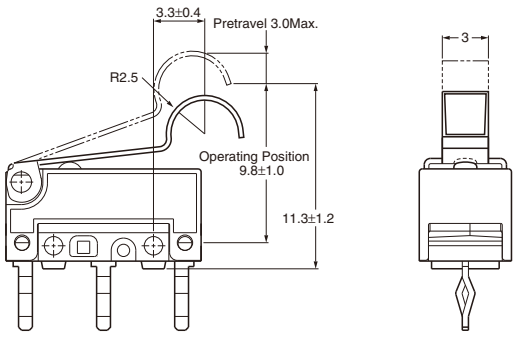
Pretravel PT, Max.		3.0mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		0.5mm
Operating Position OP	Distance from mounting hole	6.8±1.0mm
	Distance from stand-off	8.3±1.2mm

■ PC board terminal: Simulated roller lever

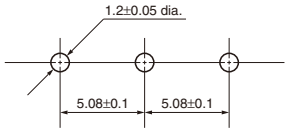
CAD Data



External dimensions



PC board pattern



Pretravel PT, Max.		3.0mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		0.5mm
Operating Position OP	Distance from mounting hole	9.8±1.0mm
	Distance from stand-off	11.3±1.2mm

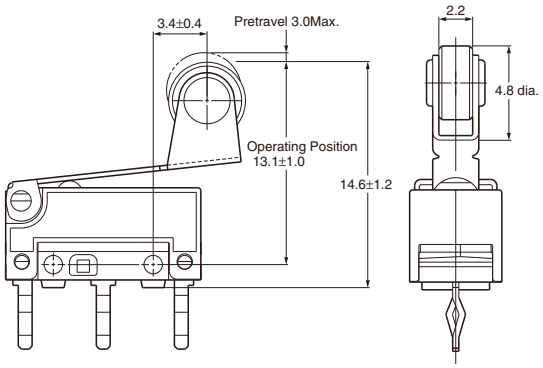
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■ PC board terminal: Roller lever

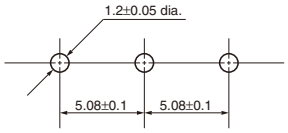
CAD Data



External dimensions



PC board pattern



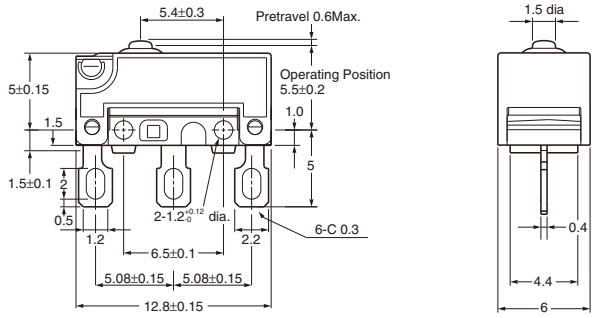
Pretravel PT, Max.		3.0mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		0.5mm
Operating Position OP	Distance from mounting hole	13.1±1.0mm
	Distance from stand-off	14.6±1.2mm

■ Solder terminal

Mounting hole 1.2 mm type

CAD Data

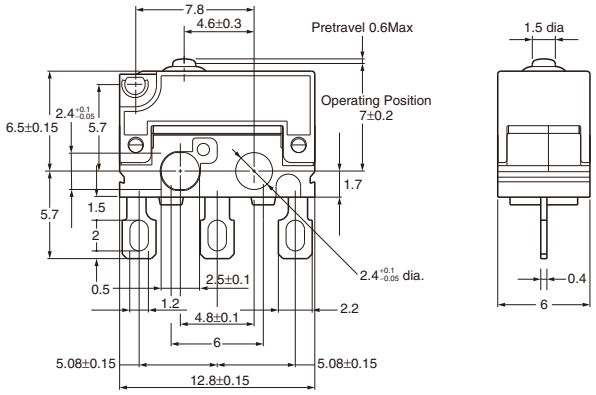
External dimensions



Mounting hole 2.3 mm type

CAD Data

External dimensions



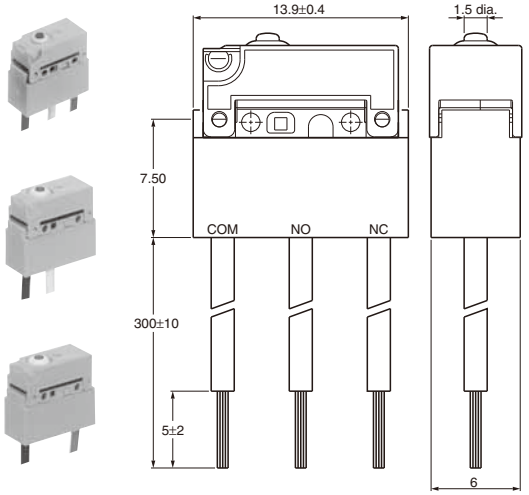
Note: Dimensions of the actuator type are the same as corresponding PC board terminal types.

■ Bottom wire leads type

Mounting hole 1.2 mm type

CAD Data

External dimensions

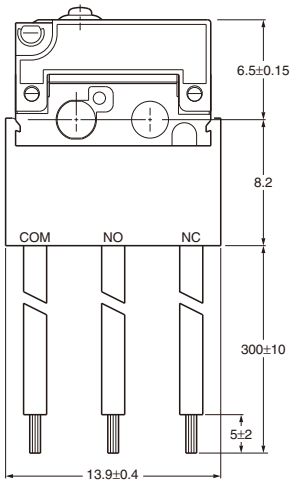


Thickness of the lead wire	0.3 mm² (Note 2)
Color of the lead wire	COM ... Black NC ..... Red NO ..... White

Mounting hole 2.3 mm type

CAD Data

External dimensions



Thickness of the lead wire	0.3 mm² (Note 2)
Color of the lead wire	COM ... Black NC ..... Red NO ..... White

Notes: 1. Products with dimensions other than shown are similar to solder terminal type.
Dimensions of the actuator type are the same as corresponding PC board terminal types.
2. With UL and CSA approved products, lead wire is changed to UL compliant (AWG22).

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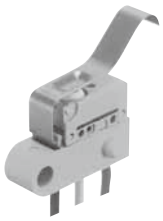
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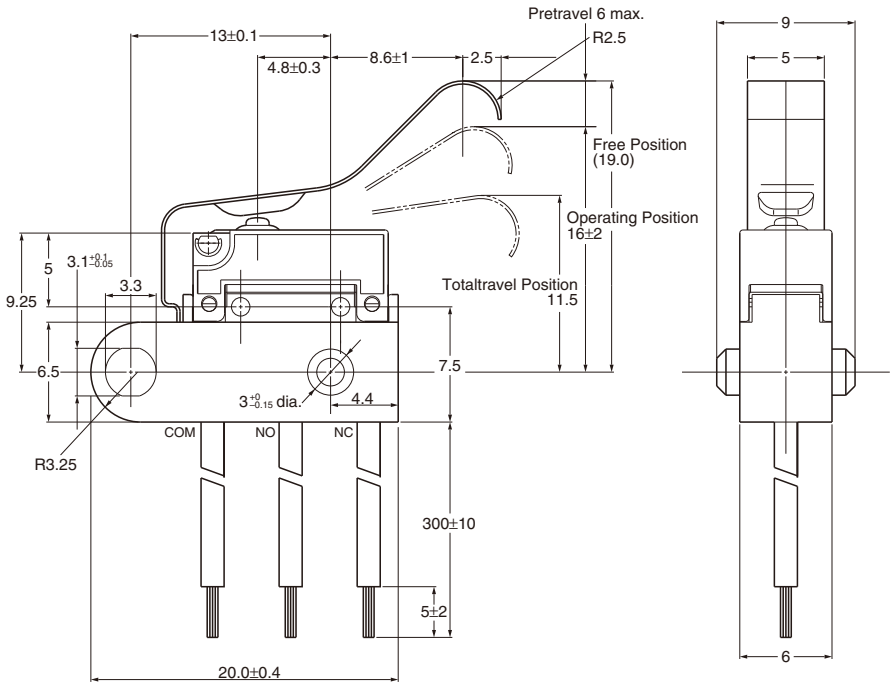
■ Wire leads bottom leaf lever type

Mounting hole 3 mm type

CAD Data

External dimensions





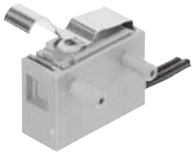
Pretravel PT, Max.		6.0mm
Movement Differential MD, Max.		1.0mm
Overtravel OT, Min.		2.5mm
Operating Position OP	Distance from mounting hole	16.0±2.0mm

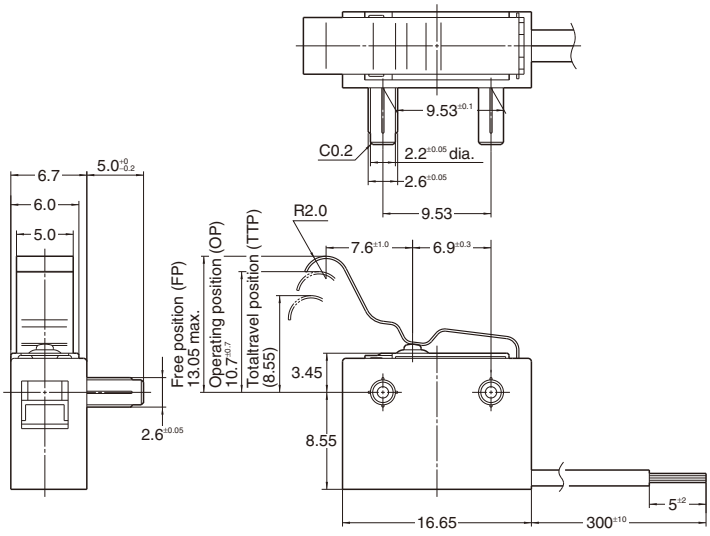
■ Wire leads side type

Fixed pin type (Right side pin)
Wire leads right side type

CAD Data

External dimensions





Pretravel PT, Max.		2.6mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		1.4mm
Operating Position OP	Distance from mounting hole	10.7±0.7mm

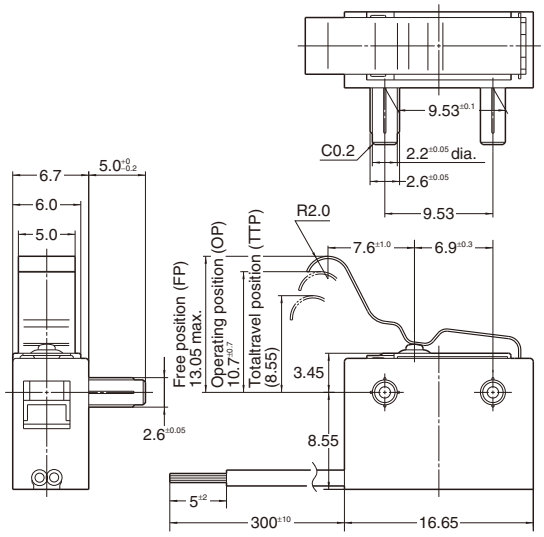
© Panasonic Corporation 2015

Wire leads left side type

CAD Data



External dimensions



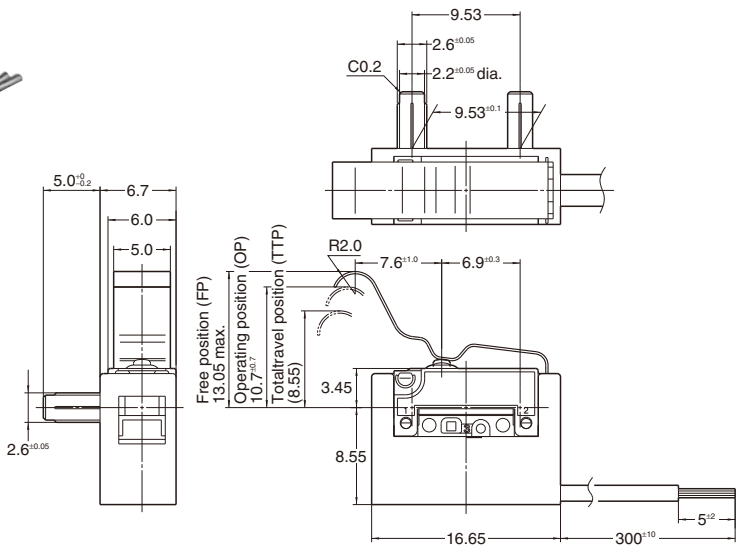
Pretravel PT, Max. mm		2.6mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		1.4mm
Operating Position OP	Distance from mounting hole	10.7±0.7mm

Fixed pin type (Left side pin)
Wire leads right side type

CAD Data



External dimensions



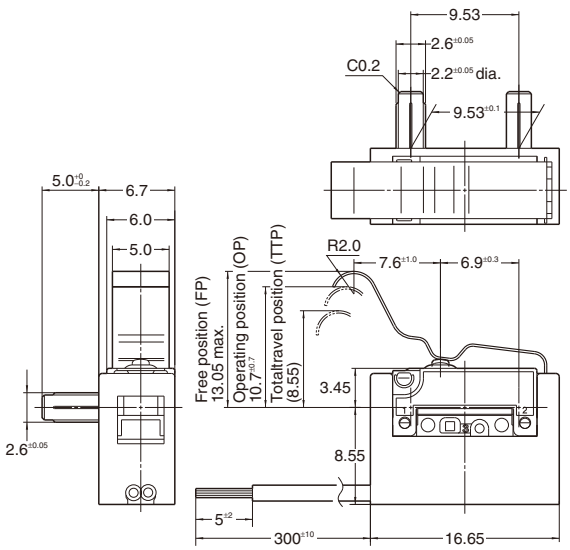
Pretravel PT, Max.		2.6mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		1.4mm
Operating Position OP	Distance from mounting hole	10.7±0.7mm

Wire leads left side type

CAD Data



External dimensions



Pretravel PT, Max.		2.6mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		1.4mm
Operating Position OP	Distance from mounting hole	10.7±0.7mm

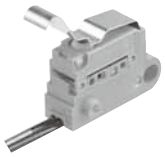
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Partly to Be Discontinued: Agency standard type
Last time buy: September 30, 2016

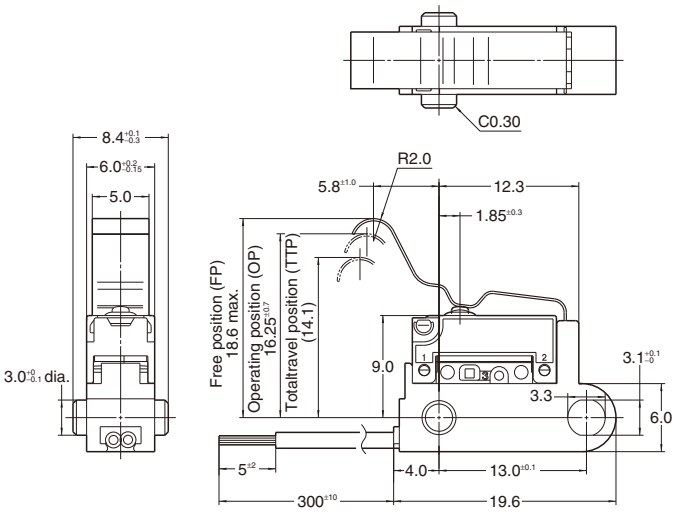
■ Wire leads side leaf lever type

Mounting hole 3mm type

CAD Data



External dimensions



Pretravel PT, Max.		2.6mm
Movement Differential MD, Max.		0.5mm
Overtravel OT, Min.		1.4mm
Operating Position OP	Distance from mounting hole	16.25±0.7mm

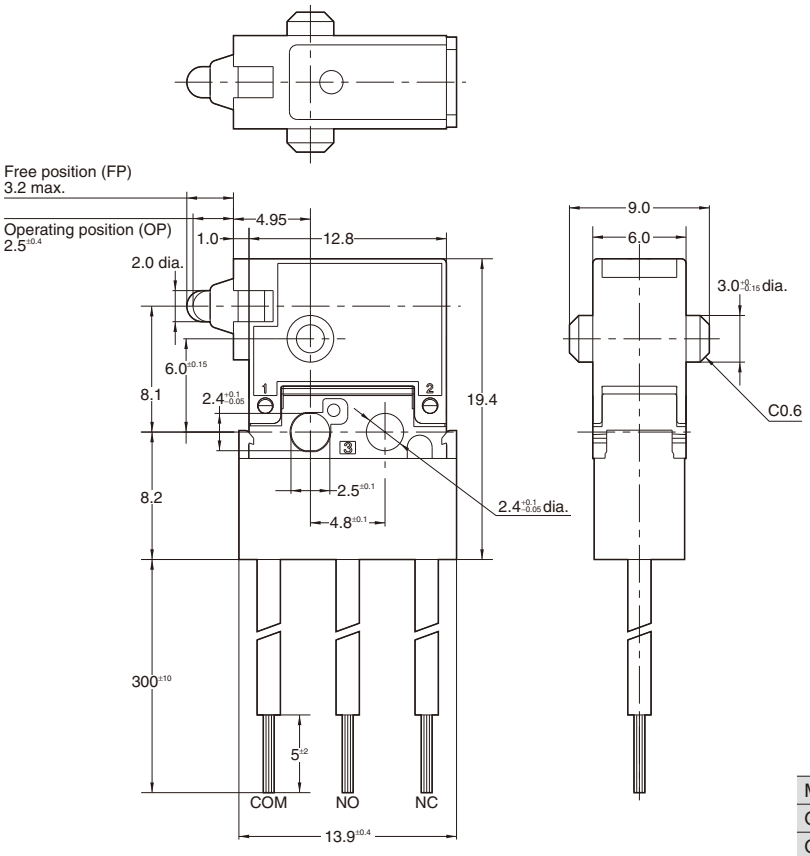
■ Wire leads long stroke type

Mounting hole 2.3 mm type

CAD Data



External dimensions



Movement Differential MD, Max.	0.5mm
Overtravel OT, Min.	2.0mm
Operating Position OP	2.5 ±0.4mm

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