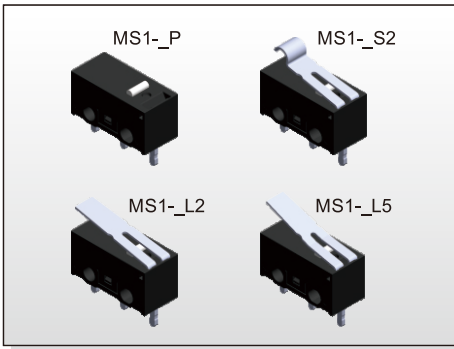


# MICRO SWITCH MS1 SERIES



## FEATURES

- ※ Miniature microswitch conforming to UL.
- ※ PCB terminal models are resistant to flux.
- ※ Highly reliable with long operating life.

## APPLICATION

- ※ Mouse, Projector
- ※ Communication equipments
- ※ Security
- ※ Electronic equipments
- ※ Household appliances

## SPECIFICATION

Contact Rating	0.1A at 30VDC	MS1-01
	3A at 125VAC/1.5A at 250VAC	MS1-3
Mechanical Durability	1,000,000 cycles MIN.	MS1-01
	500,000 cycles MIN.	MS1-3
Electrical Durability	30,000 cycles MIN.	MS1-01
	6,000 cycles MIN.	MS1-3
Contact Resistance	100mΩ MAX.	
Insulation Resistance	100MΩ MIN.	
Dielectric Strength	Between terminals of same polarity	"AC 600V 1 minute"
	Between current-carrying metal parts and ground	"AC 1500V 1 minute"
	Between each terminal and non-current-carrying metal part	"AC 1500V 1 minute"
Operating Temp.	-25°C ~ +75°C	

## HOW TO ORDER

**MS1 -** [ ] [ ] [ ] [ ] [ ] [ ]

Rating:  
01= 30VDC 0.1A  
3=125VAC 3A  
250VAC 1.5A

Actuator:  
P1=Pin Plunger 1  
L2=Hinge Lever  
L5=Bent Lever  
S2=Simulated Roller Lever

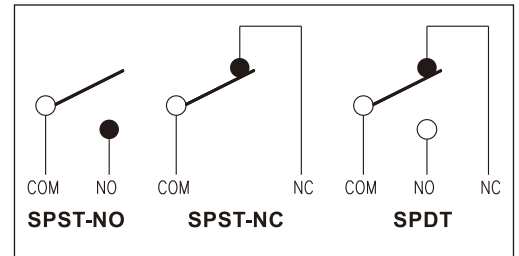
Contact Form:  
1=SPDT  
2=SPST-NC  
3=SPST-NO

V=RoHS & Lead Free

Plating:  
A=Gold Plating (0.1 A)  
G=Silver Plating (3A, 0.1A)

Terminals:  
H=PCB Terminal  
W=Solder Terminal

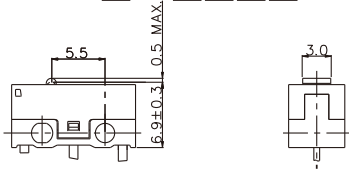
## CIRCUIT



### Actuator:

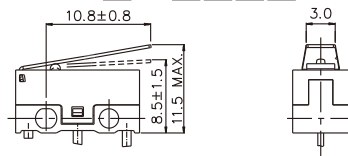
Pin Plunger 1

**MS1 -** [ ] **P1** [ ] [ ] [ ] [ ]



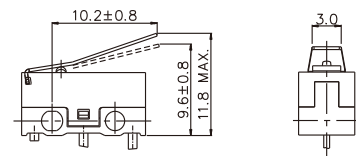
Hinge Lever

**MS1 -** [ ] **L2** [ ] [ ] [ ] [ ]



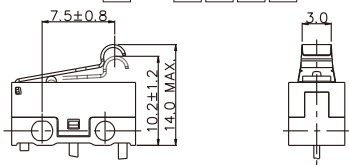
Bent Lever

**MS1 -** [ ] **L5** [ ] [ ] [ ] [ ]



Simulated Roller Lever

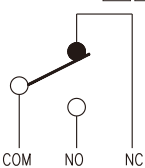
**MS1 -** [ ] **S2** [ ] [ ] [ ] [ ]



### Contact Form:

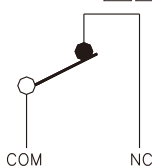
SPDT

**MS1 -** [ ] [ ] **1** [ ] [ ] [ ]



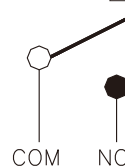
SPST-NC

**MS1 -** [ ] [ ] **2** [ ] [ ] [ ]



SPST-NO

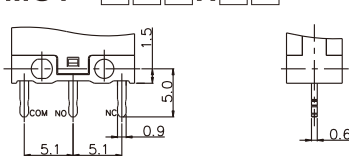
**MS1 -** [ ] [ ] **3** [ ] [ ] [ ]



### Terminals:

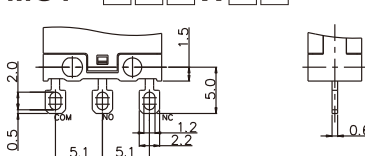
PCB Terminal

**MS1 -** [ ] [ ] [ ] **H** [ ] [ ] [ ]



Solder Terminal

**MS1 -** [ ] [ ] [ ] **W** [ ] [ ] [ ]



**TYPE**

**SPDT**

Ratings	Plating	Actuator	PCB Terminal	Solder Terminal
0.1A	Silver Contact	Pin Plunger 1	MS1-01P11HGV	MS1-01P11WGV
		Hinge Lever	MS1-01L21HGV	MS1-01L21WGV
		Bent Lever	MS1-01L51HGV	MS1-01L51WGV
		Simulated Roller Lever	MS1-01S21HGV	MS1-01S21WGV
	Gold Contact	Pin Plunger 1	MS1-01P11HAV	MS1-01P11WAV
		Hinge Lever	MS1-01L21HAV	MS1-01L21WAV
		Bent Lever	MS1-01L51HAV	MS1-01L51WAV
		Simulated Roller Lever	MS1-01S21HAV	MS1-01S21WAV
3A	Silver Contact	Pin Plunger 1	MS1-3P11HGV	MS1-3P11WGV
		Hinge Lever	MS1-3L21HGV	MS1-3L21WGV
		Bent Lever	MS1-3L51HGV	MS1-3L51WGV
		Simulated Roller Lever	MS1-3S21HGV	MS1-3S21WGV

**SPST-NC**

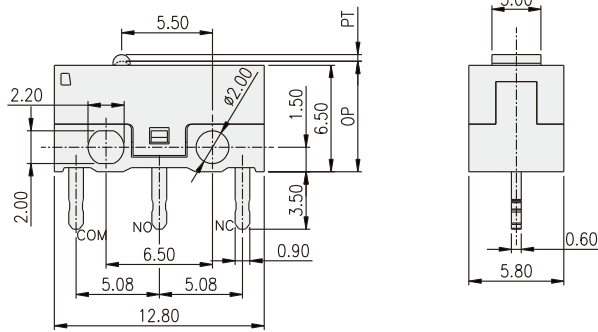
Ratings	Plating	Actuator	PCB Terminal	Solder Terminal
0.1A	Silver Contact	Pin Plunger 1	MS1-01P12HGV	MS1-01P12WGV
		Hinge Lever	MS1-01L22HGV	MS1-01L22WGV
		Bent Lever	MS1-01L52HGV	MS1-01L52WGV
		Simulated Roller Lever	MS1-01S22HGV	MS1-01S22WGV
	Gold Contact	Pin Plunger 1	MS1-01P12HAV	MS1-01P12WAV
		Hinge Lever	MS1-01L22HAV	MS1-01L22WAV
		Bent Lever	MS1-01L52HAV	MS1-01L52WAV
		Simulated Roller Lever	MS1-01S22HAV	MS1-01S22WAV
3A	Silver Contact	Pin Plunger 1	MS1-3P12HGV	MS1-3P12WGV
		Hinge Lever	MS1-3L22HGV	MS1-3L22WGV
		Bent Lever	MS1-3L52HGV	MS1-3L52WGV
		Simulated Roller Lever	MS1-3S22HGV	MS1-3S22WGV

**SPST-NO**

Ratings	Plating	Actuator	PCB Terminal	Solder Terminal
0.1A	Silver Contact	Pin Plunger 1	MS1-01P13HGV	MS1-01P13WGV
		Hinge Lever	MS1-01L23HGV	MS1-01L23WGV
		Bent Lever	MS1-01L53HGV	MS1-01L53WGV
		Simulated Roller Lever	MS1-01S23HGV	MS1-01S23WGV
	Gold Contact	Pin Plunger 1	MS1-01P13HAV	MS1-01P13WAV
		Hinge Lever	MS1-01L23HAV	MS1-01L23WAV
		Bent Lever	MS1-01L53HAV	MS1-01L53WAV
		Simulated Roller Lever	MS1-01S23HAV	MS1-01S23WAV
3A	Silver Contact	Pin Plunger 1	MS1-3P13HGV	MS1-3P13WGV
		Hinge Lever	MS1-3L23HGV	MS1-3L23WGV
		Bent Lever	MS1-3L53HGV	MS1-3L53WGV
		Simulated Roller Lever	MS1-3S23HGV	MS1-3S23WGV

# MICRO SWITCH MS1 SERIES

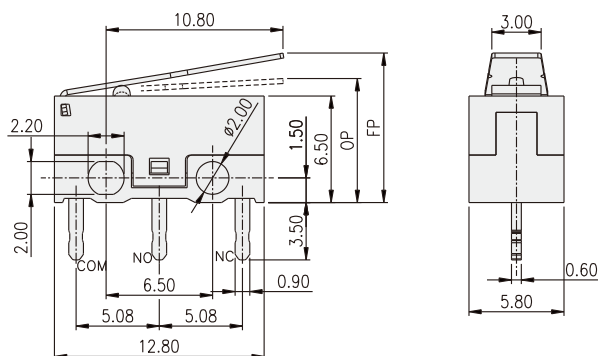
## MS1-□P11H□V



### OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE(OF)	MS1-01 76gf (0.75N) MAX.
	MS1-3 90gf (0.88N) MAX.
RELEASE FORCE(RF)	MS1-01 2gf (0.02N) MIN.
	MS1-3 5gf (0.05N) MIN.
PRETRAVEL(PT)	0.50mm MAX.
OVERTRAVEL(OT)	0.20mm MIN.
MOVEMENT DIFFERENTIAL(MD)	0.20mm MAX.
OPERATING POSITION(OP)	6.9±0.3mm

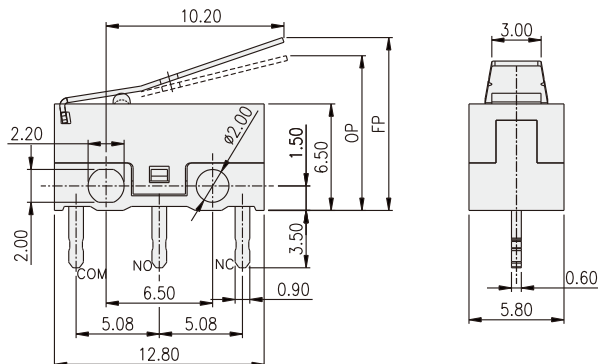
## MS1-□L21H□V



### OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE(OF)	MS1-01 26gf (0.25N) MAX.
	MS1-3 40gf (0.39N) MAX.
RELEASE FORCE(RF)	2gf (0.02N) MIN.
OVERTRAVEL(OT)	0.55mm MIN.
MOVEMENT DIFFERENTIAL(MD)	0.50mm MAX.
OPERATING POSITION(OP)	8.5±1.5mm
FREE POSITION(FP)	11.5mm MAX.

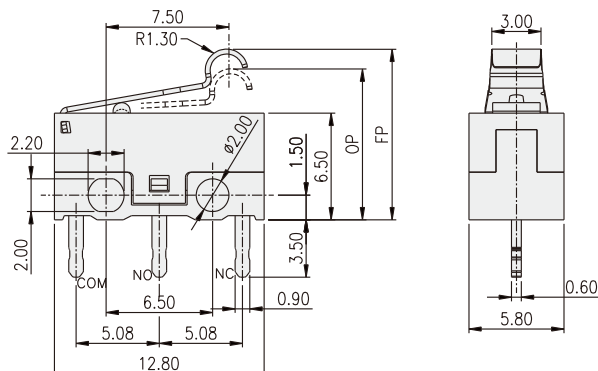
## MS1-□L51H□V



### OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE(OF)	26gf (0.25N) MAX.
RELEASE FORCE(RF)	2gf (0.02N) MIN.
OVERTRAVEL(OT)	0.55mm MIN.
MOVEMENT DIFFERENTIAL(MD)	0.50mm MAX.
OPERATING POSITION(OP)	9.6±0.8mm
FREE POSITION(FP)	11.8mm MAX.

## MS1-□□S21H□V



### OPERATING CHARACTERISTICS

ITEM	SPEC.
OPERATING FORCE(OF)	40gf (0.39N) MAX.
RELEASE FORCE(RF)	2gf (0.02N) MIN.
OVERTRAVEL(OT)	0.50mm MIN.
MOVEMENT DIFFERENTIAL(MD)	0.45mm MAX.
OPERATING POSITION(OP)	10.2±1.2mm
FREE POSITION(FP)	14.0mm MAX.

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