

ONLY FOR REFERENCE

Standard Spec Sheet

Mitsumi Model Name	SBH-01AMT77M
Mitsumi Model No.	R66-Q372
Operating Force	430 gf
Mounting Height	0.65mm
Design Type	With Nub
MOQ	10,000

Any products mentioned in this catalog are subject to any modification in their appearance and others for improvements without prior notification.

If you have any questions for the details, please contact SW engineering division.

For your adopting the products, the formal supply specification will be provided.

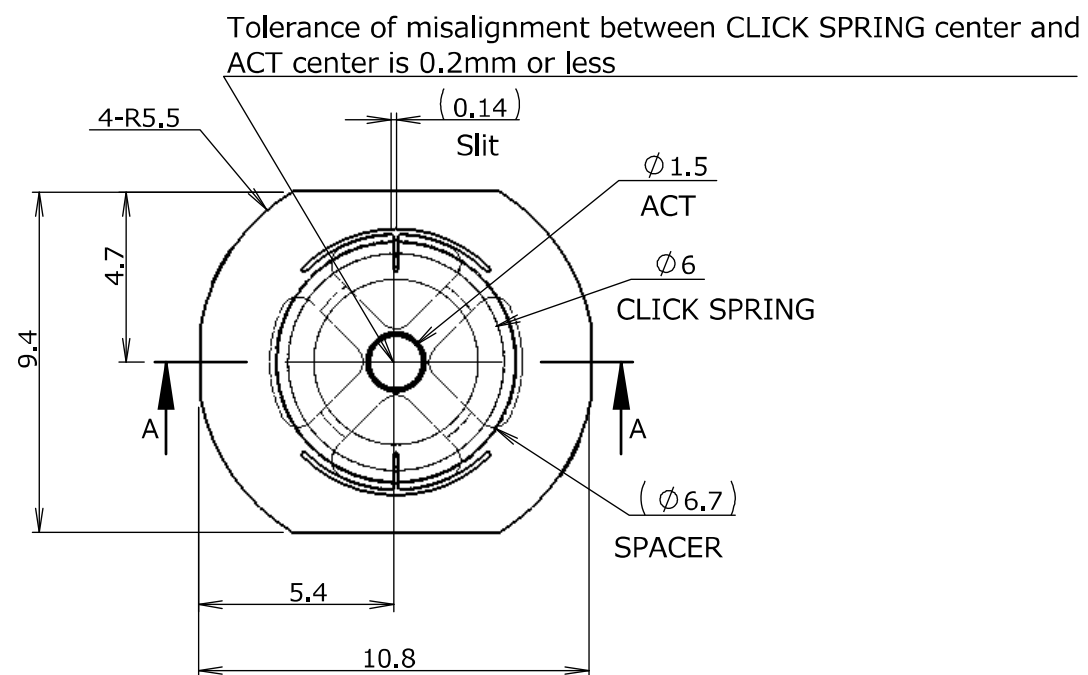
MinebeaMitsumi
Passion to Create Value through Difference

MITSUMI ELECTRIC CO.,LTD.

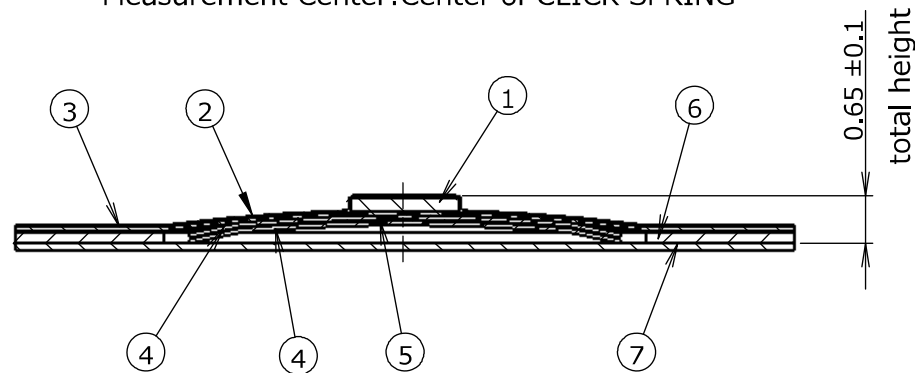
2-11-2, Tsurumaki, Tama-shi. Tokyo 206-8657 Japan.

SWITCH ENGINEERING SECTION

1049, Tateiwa, Iizuka-shi. Fukuoka 820-8533 Japan.



Measurement Center: Center of CLICK SPRING



SEC A-A
(S=10:1)

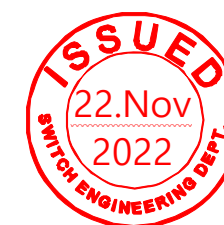
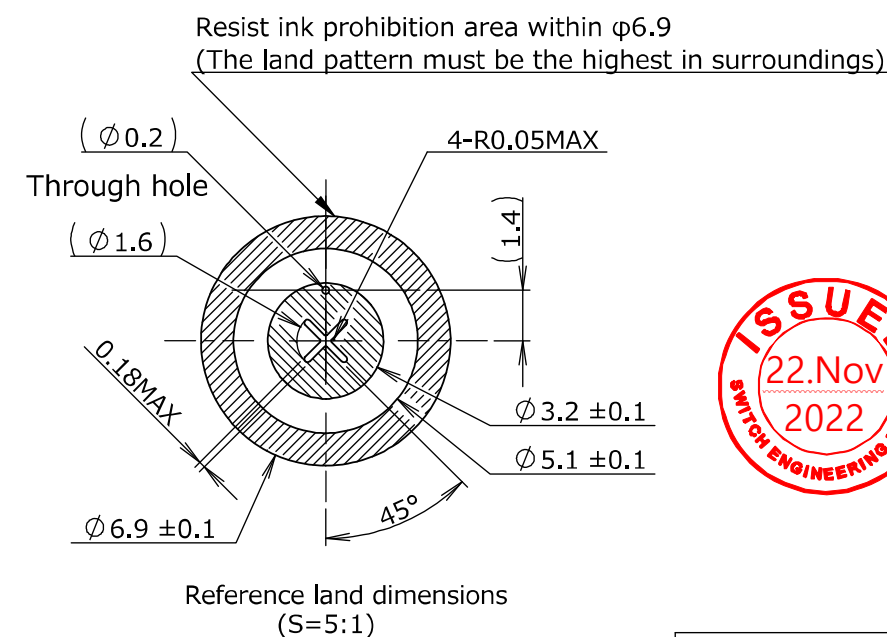
NOTE:

- Operating Force : 4.3±0.5N.
- Travel : 0.27±0.1mm.
- Click ratio : 55±20%.
- LIFE : 1,000,000cycles.
- If a FPC/PWB with thickness of 0.3mm or less is used to mount a switch, drop impact resistance and stop strength of the switch are extremely decreased. Therefore please give careful consideration to stiffness for the switch mounted area in your design. Also if a double-sided adhesive tape is used to fix a FPC/PWB, please use the tape which is thinner as much as possible (MAX, 50µm), and test drop impact and stop strength to make sure that there is no impact such as dome deformation.
- Dimensions in parentheses () are for reference. Therefore tolerance is not applied to the dimensions in parentheses. Consultation is required when specifying a dimension.
- Please use copper with Au-plating over Ni-plating for contact area of PWB mounted on switch sheet. (Recommended plating thickness: Ni plating 5~10µm, Au plating 0.02~0.1µm) If you use material, plating and surface finishing other than those mentioned above, we do not guarantee because it can cause to degrade the switch performance.
- Please keep even surface between contact surface of pattern A&B and pasting surface of the switch to get stable feel and On timing.
- Place the switch sheet within the hatched area (14.3 mm x 9.5 mm).
- There are bubbles on the product, which has no effect on the characteristics and is a good product.

SPECIFICATION		Switch sheet	Approved	Checked	Drawn
SBH-01AMT77M			Nov.17 '22 S.Otaka	Nov.17 '22 Yh.Qi	Nov.14 '22 Pp.Zhang
		GENERAL SPECIFICATION	CUSTOMER'S NAME		CUSTOMER'S PARTS No.
S66-Q348		-	-		

- The items specified in this Product specification are prior to General Specification.
- The items not specified in this Product specification, General specification is applied.

No.	Part Name	REMARKS	NOTE
①	ACT	PET(Black)	(h=0.188mm)
②	COVER FILM	PET(Without glue)	(t=0.025mm)
③	DOUBLE SIDE TAPE 1	PET+GLUE+PET	(t=0.05mm)
④	CLICK SPRING	SUS(SUS301CSPEH)	(t=0.06mm)
⑤	DOUBLE SIDE TAPE 2	PET+GLUE+PET	(t=0.02mm)
⑥	SPACER	PET+GLUE(One side tape)	(t=0.16mm)
⑦	SEPARATOR	PET	(t=0.1mm)



RoHS Compliant
2011/65/EU, (EU)2015/863

Environmental Class	G
Parameter sheet result	N
Development Class	2

Third Angle Projection

Revision	No.	Description	Date	In Charge	Scale	Tolerance	A'ssy Draw No.
					5:1	±0.2	66-Q523D
Product Manual		Inspect Manual	Model Code		File No.	Rev.	
Q66-Q340		I66-Q333	-		R 66Q372	00	

Q348	General Specifications	Approved	Checked	Drawn
	Switch Sheet Series	Nov-17-2022 SW-ENG. S.Otaka	Nov-17-2022 SW-ENG. Qi.Yuanhe	Nov-16-2022 SW-ENG. Liu.Fei
	SBH-01AMT74N / SBH-01AMT75N SBH-01AMT76M / SBH-01AMT77M	Released	Nov-16-2022	

1. General

1-1 Scope

This specification is to cover the general requirements of switch sheet series SBH-01AMT74N/75N/76M/77M.

1-2 Operating temperature range

-20 to 80 deg-C (humidity 20 to 80%RH (no dew drop))

Switch sheet shall be attached on PWB or FPC and based on specified lab condition.

1-3 Storage temperature range

-30 to 80 deg-C (humidity 20 to 85%RH (no dew drop))

Switch sheet shall be attached on PWB or FPC.

1-4 Test conditions

Tests and measurements shall be made in the following standard conditions unless otherwise specified.

Normal temperature: 15 to 35 deg-C. Normal humidity: Relative humidity 25 to 85%

In case any question arises from the judgment made, tests shall be conducted in the following conditions.

Temperature: 20 +/- 2 deg-C. Air pressure: 86 to 106kpa. Relative humidity 65 +/- 5%

2. Appearance, style, dimensions and structure

2-1 Style and dimensions

Refer to the attached drawing.

2-2 Appearance

Scratch, dirt, discoloration, and foreign material that not affect the serviceability of the product shall be judged as non-defective product.

White discolored products are acceptable as a conforming product as the white discoloration occurring in the production process has no negative effect characteristics.

Bubbles in products, which occur in production process, are acceptable as bubbles do not have any impact on product characteristics.

2-3 Component

Refer to the attached drawing.

3. Packaging

Refer to the packaging specification.



REVISION			Code	ID No.	File No.	
			S	66	Q348	

4. Mechanical characteristics

Items	Test conditions	Criteria
4-1 Operating force	Placing the switch such that the direction of switch operation is vertical and then applying the load to the center of the CLICK SPRING, the load shall be measured. <Measurement condition> Put a SW sheet on the metal table (iron/polished surface) Use load measuring instrument Measuring speed:0.05mm/sec Pusher: Dia2.0,Flat, metal	Refer to the attached drawing
4-2 Travel	Placing the switch such that the direction of switch operation is vertical and then applying the load to the center of the come CLICK SPRING, the travel distance for the dome spring to a stop shall be measured. <Measurement condition> See item 4-1 above	Refer to the attached drawing
4-3 Click ratio	Placing the switch such that the direction of switch operation is vertical and then applying the load to the center of the CLICK SPRING, the load shall be measured. Click ratio= $((OF-RF)/OF) \times 100$ (%) <Measurement conditions> See item 4-1 above 	Refer to the attached drawing
4-4 Push strength	Placing the switch such that the direction of switch operation is vertical and then applying a static load of 30N (3.1kgf) to the center of the CLICK SPRING, for 15 sec. Put a SW sheet on the metal table (iron/polished surface) Pusher: Dia4.5,Flat, metal	Characteristics shown in 4-1,4-2 and4-3 shall fulfill +/-30% of initial performance. Satisfy 6-1 clause.

5. Endurance characteristics

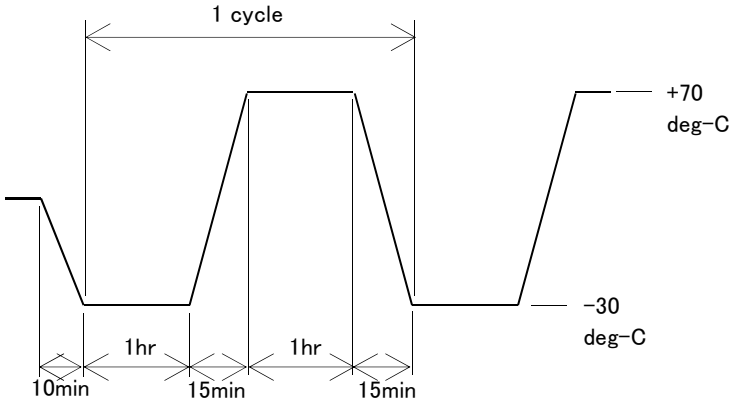
Items	Test conditions	Criteria
5-1 Operating life	Placing the switch such that the direction of switch operation is vertical and then applying the load to the center of the CLICK SPRING to come to a stop.After the following operation cycles, measurements shall be done. Pusher: Dia4.5,Flat, ABS resin. Depression: Operating force $\times 1.5$ Rate of operation: 60 to 120 operations/min. Cycles of operation: Specified on the product specification.	Characteristics shown in 4-1,4-2 and4-3 shall fulfill +/-30% of initial performance. Contact resistance 100 ohm or less.

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6. Electrical characteristics

Items	Test conditions	Criteria
6-1 Contact resistance	The test PWB:Glass-epoxy base($t=1.6\text{mm}$), Pattern is covered with gold plated in $0.05\mu\text{m}$ or more lower side Ni plated in $2\mu\text{m}$ ave. Load: Applying 1.5 times the max of OF specified in item 4-1. Current: 5mA	5 ohm max.

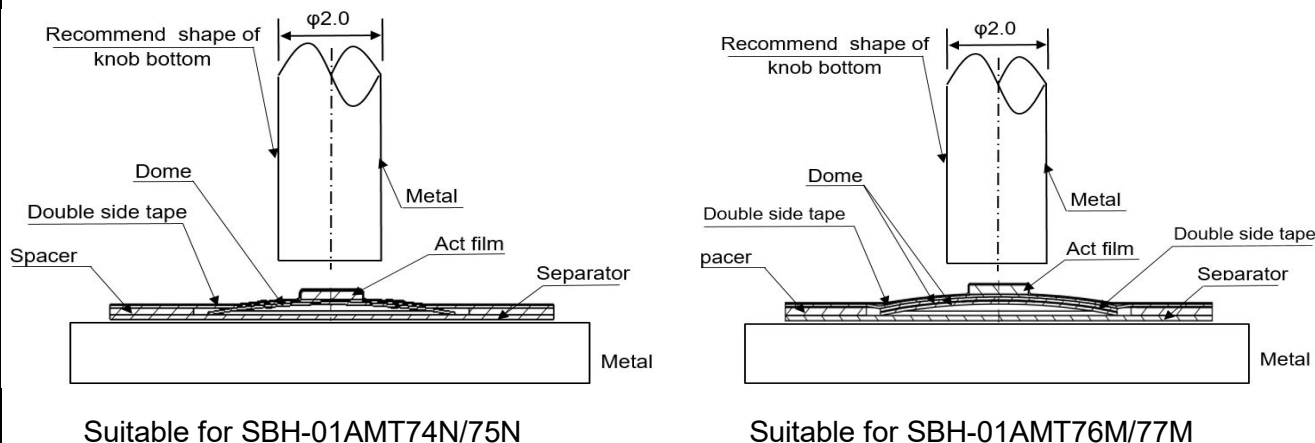
7.Environmental characteristics

Items	Test conditions	Criteria
7-1 Cold resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for two hours before measurements are made. (1) Temperature: $-40\pm 3\text{ deg-C}$ (2) Time: 96 hr	Satisfy 4-1,4-2 and 4-3, Satisfy 6-1 clause.
7-2 Heat resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for two hours before measurements are made. (1) Temperature: $85\pm 3\text{ deg-C}$ (2) Time: 96 hr	Satisfy 4-1,4-2 and 4-3, Satisfy 6-1 clause.
7-3 Humidity resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for two hours before measurements are made. (1) Temperature: $60\pm 3\text{ deg-C}$ (2) Relative humidity: 90 to 95% (3) Time: 96 hr	Satisfy 4-1,4-2 and 4-3, Satisfy 6-1 clause.
7-4 Temp. cycling	Following 10 cycles of the temperature cycling test set forth below the sample shall be left in normal temperature and humidity conditions for 2 hr before measurements are made. 	Satisfy 4-1,4-2 and 4-3, Satisfy 6-1 clause.



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8. Measurement method



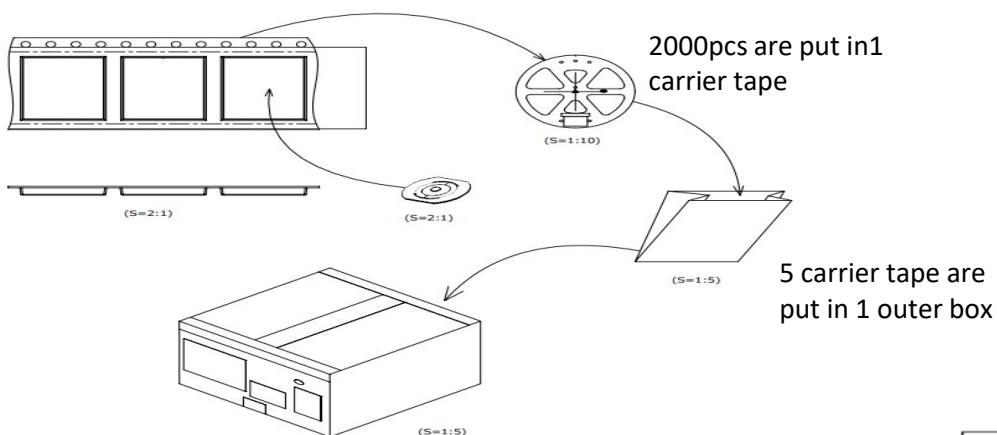
Drawing 1

9. Component

Refer to the attached drawing.

10. Packaging specification

2,000pcs are put in 1 carrier tape, and 5 carrier tape puts products in a partition amount: $2,000/\text{carrier tape} \times 5 = 10,000\text{pcs}/\text{outer box}$



Destination	INV. No.
Customer	C/T No.
	Lot No.
Vendor	MITUMI ELECTRIC CO.,LTD
Vendor Part No.	R66-****
Customer Part No.	***-*****-***
Quantity	***
Delivery date	****.***
For RoHS	
HANDLE WITH CARE	
MADE IN CHINA	

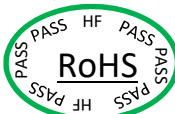
- R66***-**-*****-7702CA011-0*

<Lot No. label>

PARTNO	
MODEL	
SPEC.R-	
	PCS
 Mitsumi Electric Co., Ltd.	

<Mitsumi label>

<Case mark label>



<RoHS/HF Marking label>

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11. Operating environment

- 11-1 Do not expose the switch sheet to sulfur gas, like the corrosion gas and the sea breeze.
- 11-2 Visible dust must be cleared.
- 11-3 Do not apply the load more than specified to the switch.

12. Condition in storage

- 12-1 Do not expose the switch sheet to sulfur gas, like the corrosion gas and the sea breeze.
- 12-2 Visible dust must be cleared.
- 12-3 Do not apply the load more than specified to the switch sheet.

(Stocking environment)

- 12-4 The switch sheet shall not be stored for a long time under hot temperature with high degree of humidity and/or under the direct sun light.

- 12-5 The switch sheet are recommended to be stored under the normal temperature with normal humidity.

(Temperature:15 to 35 deg-C humidity:25 to 85% with normal air pressure.(86 to 106kpa)).

(Stocking period)

- 12-6 Stocking period is 1.5 years after the delivery.

13. Precaution in use

- 13-1 Do not apply the load more than specified to the switch sheet.
- 13-2 Do not wash the switch sheet.
- 13-3 Please remove dirt on the contact pattern by a vacuum or the like before you assemble the connecting parts. Otherwise, dirt will cause the contact faults. Conductive failure due to unremoved dirt is not covered by the warranty.
- 13-4 Please consider your set design and pay attention to installation process so that the load more than specified and/or impact are not applied to the CLICK SPRING.
- 13-5 Please pay attention to your dome attaching process because re-attaching leads to low adherence property.
- 13-6 If a question or problem not stipulated here in arises, it shall be determined each time through consultation.

14. Precaution in use

- 14-1 This switch sheet uses pressure adhesive type for the adhesive tape. Therefore, the switch sheet needs to be applied pressure (recommended pressure: 0.1Mpa) after attaching on your sets. Please do not press CLICK SPRING while applying pressure.
- 14-2 This product is delivered as a sheet. Therefore, you can not use auto-mounting machine in assembly.
- 14-3 Unless provided for otherwise, the products have been designed and manufactured for application in equipment and devices which are sold to end users in the market, including audio-visual (AV) equipment, electrical home appliances, office machines, information and communication equipment, and amusement equipment. The products are not intended for use in, and must not be used for, any application for nuclear equipment, driving equipment for aerospace or any other unauthorized use. With the exception of the abovementioned prohibited applications, please contact our sales representative and/or evaluate the total system regarding applicability for applications involving high levels of safety and liability such as medical equipment, burglar alarm equipment, disaster prevention equipment and undersea equipment. Please also incorporate fail-safe design, protection and redundant circuitry, malfunction protection, and/or fire protection into the complete system to ensure safety and reliability of the total system.



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