

MU series

Multidirectional switches



DISTINCTIVE FEATURES

- One touch directional control
- Distinctive tactile feel
- Extremely compact
- SMD-mounted
- Variable heights



ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load : DC 12V 50mA
- Contact resistance : 100 mΩ max.
- Electrical life at full load : 100,000 cycles



GENERAL SPECIFICATIONS

- Travel :
 - 4 direction: 0.25 ± 0.1 mm
 - Center: 0.15 ± 0.1 mm
- Contact bounce: max 10 ms
- Operating angle: 4°
- Storage temperature range: -40°C to 85°C
- Operating temperature range: -20°C to 70°C



MATERIALS

- Case : polyamide
- Actuator : polyamide
- Contacts : brass, silver plated

APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

The company reserves the right to change specifications without notice.



MU series

Multidirectional switches

MU-AS70R



10.5 mm x 10.4 mm, h=7.0 mm

Positioning pins

Operation force:

4 directions: 270 ±50gf

Center: 500 ±70gf

Quantity per reel: 550

CIRCUIT DIAGRAM EXPLAINED

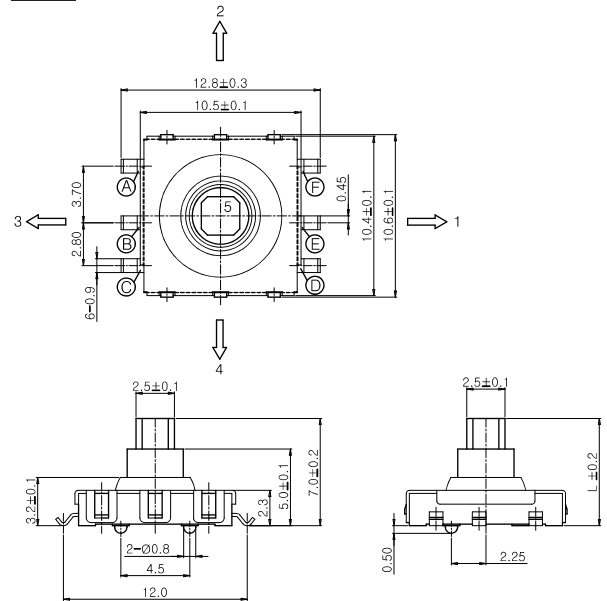
Direction 1: Pin D & E will be connected

Direction 2: Pin D & A will be connected

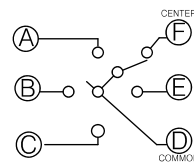
Direction 3: Pin D & B will be connected

Direction 4: Pin D & C will be connected

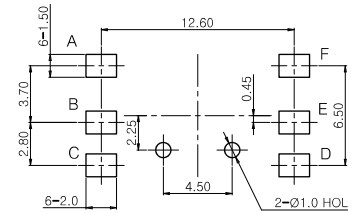
Direction 5: Pin D & F will be connected



CIRCUIT DIAGRAM



PCB DIMENSIONS



MU-AS90R



10.5 mm x 10.4 mm, h=9.0 mm

Positioning pins

Operation force:

4 directions: 180 ±50gf

Center: 500 ±70gf

Quantity per reel: 450

CIRCUIT DIAGRAM EXPLAINED

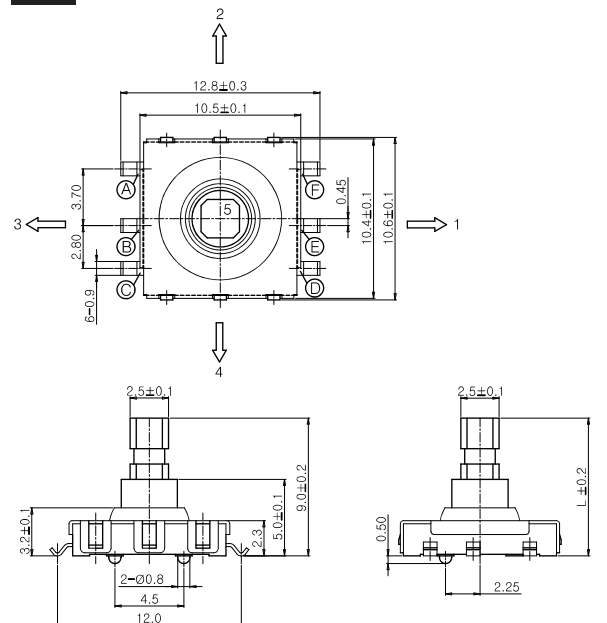
Direction 1: Pin D & E will be connected

Direction 2: Pin D & A will be connected

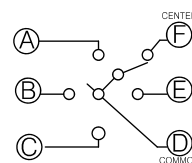
Direction 3: Pin D & B will be connected

Direction 4: Pin D & C will be connected

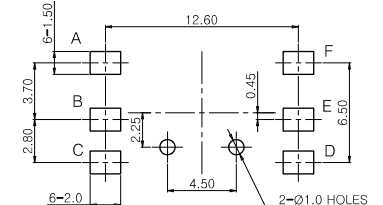
Direction 5: Pin D & F will be connected



CIRCUIT DIAGRAM



PCB DIMENSIONS



MU-BUE50R

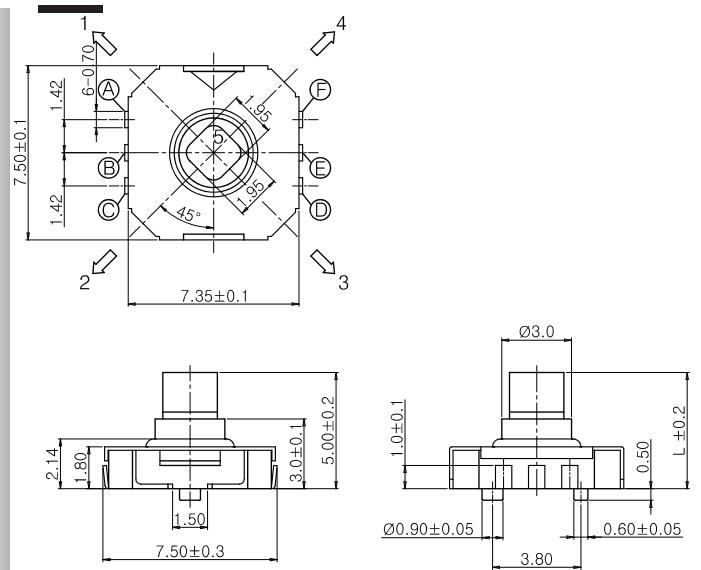


7.5 mm x 7.35 mm, h=5.0 mm
 Positioning pins
 Operation force:
 4 directions: 160 ±50gf
 Center: 260 ±70gf

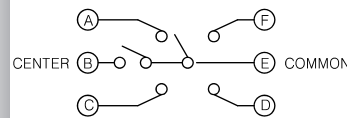
Quantity per reel: 1000

CIRCUIT DIAGRAM EXPLAINED

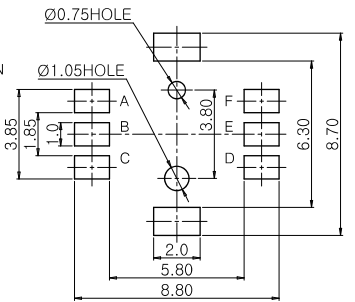
Direction 1: Pin E & A will be connected
 Direction 2: Pin E & C will be connected
 Direction 3: Pin E & D will be connected
 Direction 4: Pin E & F will be connected
 Direction 5: Pin E & B will be connected



CIRCUIT DIAGRAM



PCB DIMENSIONS



MU-BUE70R

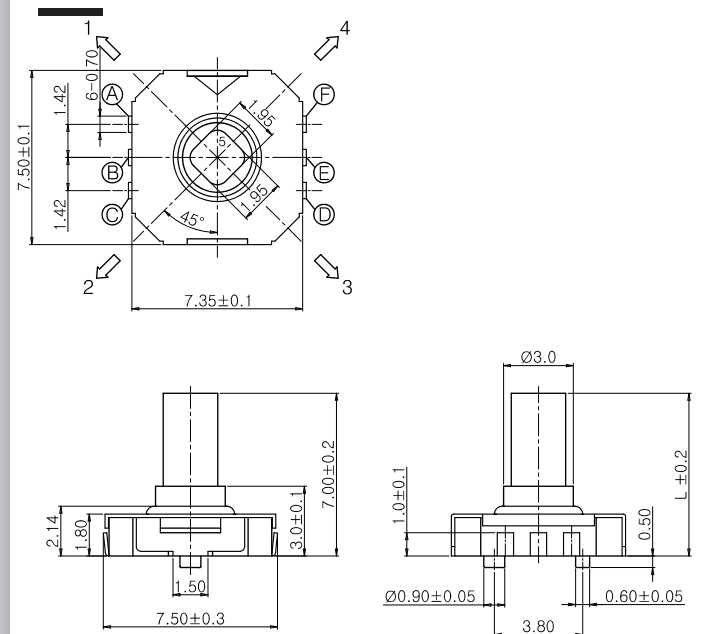


7.5 mm x 7.35 mm, h=7.0 mm
 Positioning pins
 Operation force:
 4 directions: 160 ±50gf
 Center: 260 ±70gf

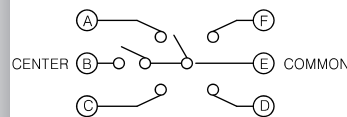
Quantity per reel: 650

CIRCUIT DIAGRAM EXPLAINED

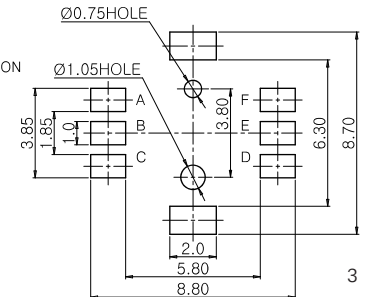
Direction 1: Pin E & A will be connected
 Direction 2: Pin E & C will be connected
 Direction 3: Pin E & D will be connected
 Direction 4: Pin E & F will be connected
 Direction 5: Pin E & B will be connected



CIRCUIT DIAGRAM



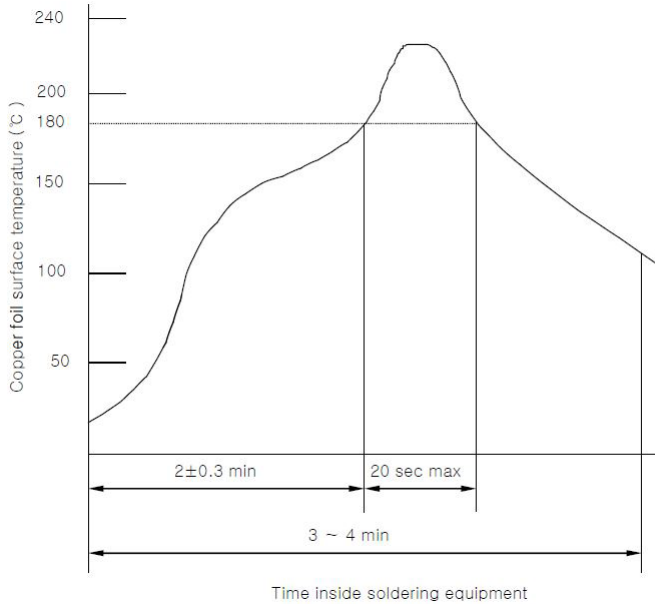
PCB DIMENSIONS



MU series

Multidirectional switches

TEMPERATURE PROFILE



REFLOW SOLDERING

It is recommended to determine soldering conditions through verification, since surface temperature varies depending upon material, size and PCB thickness.

Other precautions:

- 1) Switch shall not be washed after soldering with solvent or the like.
- 2) Soldering shall be controlled so as not to allow flux penetrates switch at its upper face.
- 3) Switch terminals and PCB upper face shall be free from flux prior to soldering