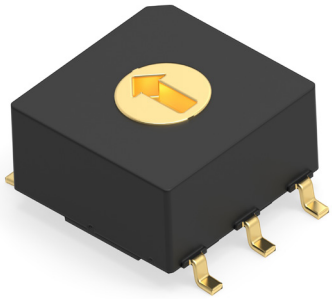
# MRSS - MINIATURE ROTARY SWITCH SERIES

## PRODUCT DESCRIPTION

The MRSS addresses manual programming applications. These high-quality rotary DIP switches are available in size 7.7mm square (horizontal) and 7.2mm square (vertical) for a wide range of possible applications like elevator and security system. Meanwhile the compact design offers 50% lower profile than standard DIP switches and save space around 40% PCB area. In addition, MRD Series provide more options for terminal, hexadecimal or binary code, with or without complement types to fulfill the variety requirements.

The MRSS Switches are characterised by contact rating of 0.4VA @ 20V DC or AC.

Reference TE customer drawing for application instructions.



### FEATURES

- Offer both SMD and THT
- Space saving with a low profile
- High reliability with 2 points contacts
- Hexadecimal or binary code, with complement
- Vertical and horizonal versions
- MSL 1 conformance
- Packaged in Tube and Tape/Reel

### APPLICATION

- Elevator
- Single chip
- Security system
- Lighting system
- Machinery
- Telecommunication

# MRSS - Miniature rotary switch series

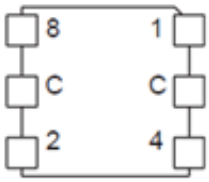
## MRSS Series – Type Classification

| | | |
|---|---|---|
| **Rating** | | 0.4VA @ 20V DC or AC MAX. |
| **Contact Resistance** | | 100mΩ MAX @2VDC 10mA initial |
| **Operation Temperature** | | -40°C to 85°C |
| **Mechanical Life** | | 10,000 steps |
| **Electrical Life** | | 10,000 steps @ 5VDC, 10mA |
| **Withstanding Voltage** | | 250VAC for 1 min |
| **Operation Force** | | 2.0mN-m MIN, 19.6mN·m MAX. |
| **Soldering Conditions** | **Manual** | Temp of iron tip: 320°C MAX. for 4±1 sec |
| | **Flow** | Preheat 100 to 105°C for 30±5 sec<br>Solder temp 265°C ±3°C for 8±2 sec |
| | **Reflow** | Preheat 160 to 190°C for 90 to 120 sec<br>Reflow temp 225°C (switch surface) for 20 to 60 sec<br>Peak temp 255°C (switch surface) MAX. |

### Material Specifications

| Components | Material | Finish | Components | Material | Finish |
|---|---|---|---|---|---|
| Case | PSS | Color: Black | Fixed contact | Cu alloy | Au flash |
| Frame | PSS | Color: Light Brown, Black | Movable contact | Cu alloy | Au plated |
| Rotar | LCP | Color: White | Holder | SUS | Silver |
| Plate | SUS | - | - | - | - |

### Circuit type




Terminal Identification viewed from bottom switch

# MRSS - Miniature rotary switch series

## R - Real code. 10 and 16 positions.

### BDC

| CODE | Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | | ● | | ● | | ● | | ● | | ● |
| 2 | | | ● | ● | | | ● | ● | | |
| 4 | | | | | ● | ● | ● | ● | | |
| 8 | | | | | | | | | ● | ● |

### Hexadecimal

| CODE | Position | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 1 | | ● | | ● | | ● | | ● | | ● | | ● | | | | ● |
| 2 | | | ● | ● | | | ● | ● | | | ● | ● | | | ● | ● |
| 4 | | | | | ● | ● | ● | ● | | | | | ● | ● | ● | ● |
| 8 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● |

## C - Complement code. 10 and 16 positions.

### BDC Complement

| CODE | Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | ● | | ● | | ● | | ● | | ● | |
| 2 | ● | ● | | | ● | ● | | | ● | ● |
| 4 | ● | ● | ● | ● | | | | | ● | ● |
| 8 | ● | ● | ● | ● | ● | ● | ● | ● | | |

### Hexadecimal Complement

| CODE | Position | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 1 | ● | | ● | | ● | | ● | | ● | | ● | | ● | | ● | |
| 2 | ● | ● | | | ● | ● | | | ● | ● | | | ● | ● | | |
| 4 | ● | ● | ● | ● | | | | | ● | ● | ● | ● | | | | |
| 8 | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |

## G - Gray code. 10 and 16 positions.

### BDC Gray

| CODE | Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1 | | ● | ● | | | ● | ● | | | ● |
| 2 | | | ● | ● | ● | ● | | | | |
| 4 | | | | | ● | ● | ● | ● | ● | ● |
| 8 | | | | | | | | | ● | ● |

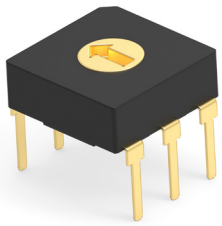
### Hexadecimal Gray

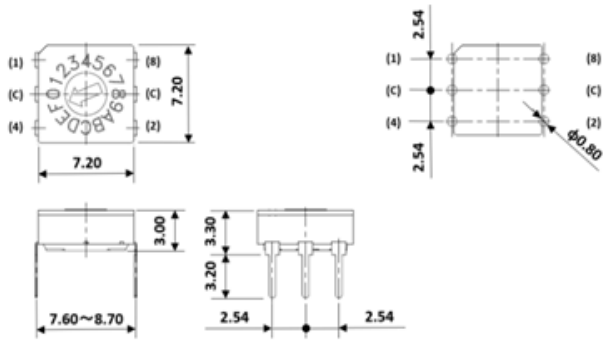
| CODE | Position | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 1 | | ● | ● | | | ● | ● | | | ● | ● | | | ● | ● | |
| 2 | | | ● | ● | ● | ● | | | | | ● | ● | ● | ● | | |
| 4 | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| 8 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● |

# MRSS - Miniature rotary switch series

## Terminal

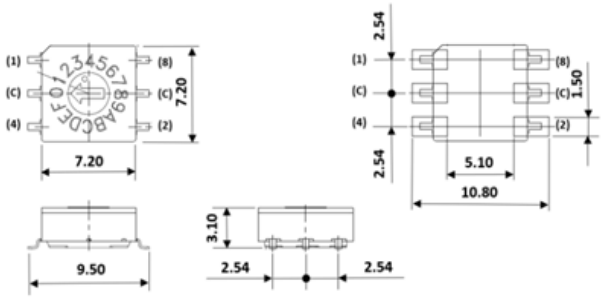
### TH - Vertical, through hole TH (Hexadecimal)



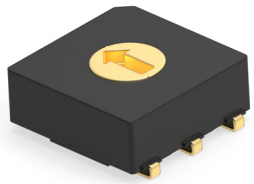


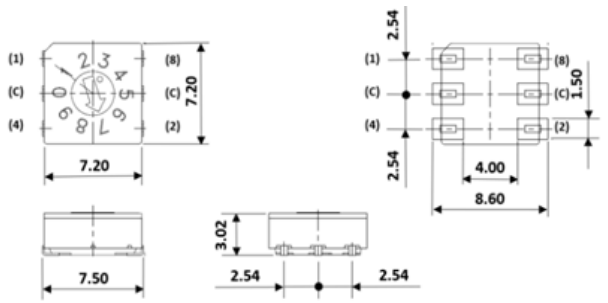

### SMGW - Vertical, gullwing SM (Hexadecimal)



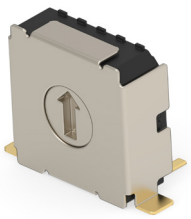


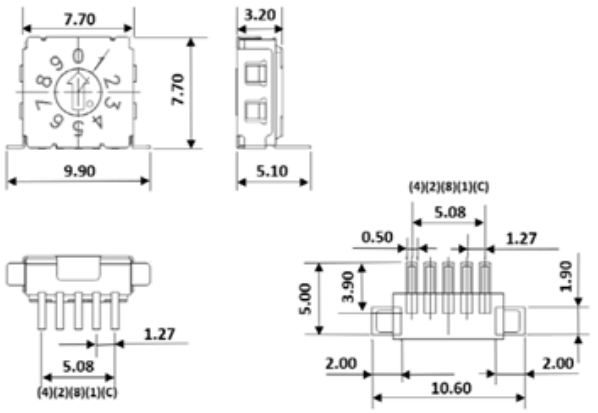

### SMJ - Vertical, J-Lead SM (Binary)






### SMGW - Horizonal, gullwing SM (Binary)





## ORDERING INFORMATION

**Part Number**

**MRSS - __ __ __ __ __ __ __ __**

### Actuator Orientation

| | |
|---|---|
| **V** | Vertical |
| **H** | Horizontal |

### Configuration/Pitch/Colour Cover or Bracket/Marking

| | |
|---|---|
| **0** | DIP/2.54/Gray/LASER |
| **1** | DIP/2.54/Black/Printed |
| **4** | SIP/1.27/Stainless Steel/LASER |

### Actuator Type

| | |
|---|---|
| **D** | Screw driver slot, Flush |

### Code

| | |
|---|---|
| **C** | Complement |
| **G** | Gray |
| **R** | Real |

### Packaging

| | |
|---|---|
| **T** | Tube |
| **TR** | Tape and reel |

### Solder Terminal Configuration

| | |
|---|---|
| **J** | J-Lead |
| **GW** | Gullwing |
| **Blank** | Through Hole |

### Termination Type

| | |
|---|---|
| **SM** | Surface Mount |
| **TH** | Through Hole |

### Position

| |
|---|
| 10 |
| 16 |

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05/22 TJ