# 2HE Switch 

## ETD/ETA/ETS SERIES TRI-STATE TYPE



ETD


ETA


ETS

## FEATURES

- With three state (1, open, 0) setting function, especially suitable for encoding/decoding of tri-state encoder/decoder integrated circuit to obtain more security codes than traditional two-state $(1,0)$ operation. For instance, 9 bits with tri-state gets 19,683 ( $3^{9}$ ) codes, while two-state has $512\left(2^{9}\right)$ codes, gains 38 times more codes with a ECE tri-state DIP Switch.
- Bottom sealed to ensure free of flux immersion during wave soldering.
- All plastics are UL 94V-0 grade fire retardant.
- Gold plated contact to ensure low contact resistance and Tin plated terminals to prevent contamination during soldering.
- Twin contacts designed to ensure stable contact.
- Ideal for coding tele-communication, transceiving, remote control and burglar alarm systems which use integrated circuits with tri-state coding systems.
- RoHS Compliant


## APPLICATIONS

- Numerical setting for computer terminal equipment
- Price setting for vending machines
- Programming for game machines
- Programming for industrial equipment and measuring instruments


## SPECIFICATIONS

## 1.ELECTRICAL

| Contact rating |  |
| :--- | :--- |
| switching | $25 \mathrm{~mA}, 24 \mathrm{VDC}$ |
| non-switching | 100 mA |

## Nㅡㄴ <br> Switch

| $\bullet$ Contact resistance |  |
| :--- | :--- |
| initial | $50 \mathrm{~m} \Omega$ Max. |
| after life test | $100 \mathrm{~m} \Omega$ Max. |
| $\bullet$ Insulation resistance | $1000 \mathrm{M} \Omega$ Min. at 100VDC |
| $\bullet$ Dielectric strength | 500 VDC Min. for 60 seconds |
| $\bullet$ Capacitance between adjacent switches 5pF Max. |  |

## 2.MECHANICAL and ENVIRONMENTAL

| - Temperature rating | operating | $-40^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |
| :--- | :--- | :--- |
|  | storage | $-40^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |
| - Operation force | 800 g Max. |  |
| - Mechanical life | 2000 operations |  |
| - Humidity | $95 \% \mathrm{RH}, 40^{\circ} \mathrm{C}$ for 96 Hrs. |  |
| - Vibration | $10 \mathrm{Hz-55Hz-10Hz} \mathrm{for} \mathrm{6Hrs}$. |  |
| - Solderability <br> (for through hole type) | After flux $245 \pm 5^{\circ} \mathrm{C}$ for $5 \pm 1$ seconds |  |
| - Resistance to soldering heat | Solder bath: $260 \pm 5^{\circ} \mathrm{C}$ for $5 \pm 1$ seconds. <br> Solder reflow:peak temperature $260^{\circ} \mathrm{C} \mathrm{Max}$. |  |
| - Reflow soldering process for | Reference IEC61760 |  |
| SMT type |  |  |

## EnE <br> Switch

## PART NUMBERING SYSTEM



Z: RoHS Compliant
Option:
Blank: Non-Top Tape Sealed
T: Top Tape Sealed
Actuator:
L: Low Profile Actuator (For ETA/ETS only)
E: Extended Actuator
Number of Positions: As Dimensions and Circuitry
Contact Form: SPST
Series Name:
ETD: Bottom Sealed Type
ETA: Automatic Inserting Type
ETS: Surface Mounting Type

## CONSTRUCTION



ETA

2.Reverse P.C.B. LAYOUT available


ErE

## Switch

DIMENSIONS AND CIRCUITRY

ETD SERIES
Dimension A

| Positions | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 15.30 | 17.84 | 20.38 | 22.92 | 25.46 | 28.00 | 30.54 |
| $(0.602)$ | $(0.702)$ | $(0.802)$ | $(0.902)$ | $(1.002)$ | $(1.102)$ | $(1.202)$ |  |



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(-)

## ETA SERIES

Dimension A

| Positions | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A | 6.88 <br> $(0.263)$ | 9.22 <br> $(0.363)$ | 11.76 | 14.30 | $(0.463)$ | $(0.563)$ | $(0.864)$ | 19.38 | 21.92 | 24.46 |
| $(0.763)$ | 27.00 | $(0.863)$ | $(0.963)$ | $(1.063)$ | $(1.263)$ |  |  |  |  |  |

*ETA series: 2, 3 and 6 pole switches are unavailable

(L)TYPE

(E)TYPE


CIRCUIT DIAGRAM


$$
\begin{aligned}
& \text { P.C.B. LAYOUT } \\
& \text { (TOP VIEW) }
\end{aligned}
$$


(+)


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