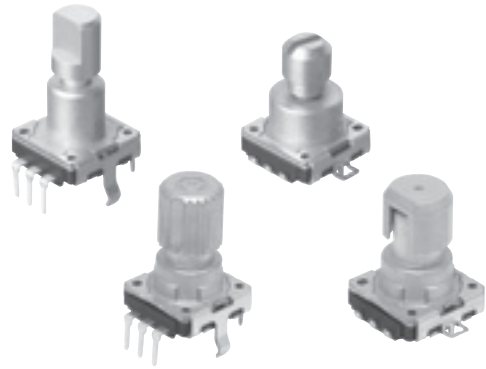


## 11 mm Square GS Encoders

Type: **EVER/EVEU/EVEV/EVEY**

### ■ Features

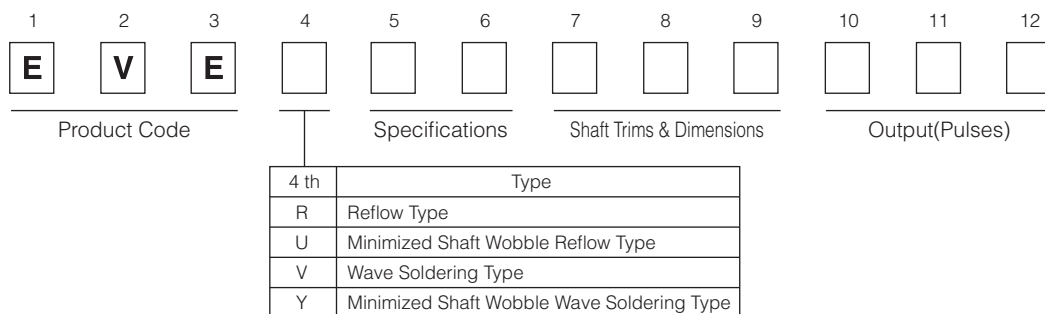
- Low Profile : Reflow Type 3.5 mm,  
Wave Soldering Type 4 mm
- Minimized shaft wobble type is also available
- The reflow type allows the product to be automatically mounted and reflow-soldered



### ■ Recommended Applications

- Car audio, car navigation, car air conditioners

### ■ Explanation of Part Numbers



### ■ Specifications

|                               |                                 | EVER<br>(Reflow Type)  | EVEV<br>(Wave Soldering<br>Type) | EVEU<br>(Minimized Shaft<br>Wobble Reflow Type) | EVEY<br>(Minimized Shaft Wobble<br>Wave Soldering Type) |
|-------------------------------|---------------------------------|--|----------------------------------|---|---|
| Mechanical                    | Rotation Angle                  | 360 ° (Endless)  |                                  |   |   |
|                               | Shaft Pull/Push Strength        | 100 N min.   |                                  |   |   |
|                               | Shaft Wobble                    | 0.6×L/30 (mm) max.   |                                  | 0.35×L/30 (mm) max.                             |   |
|                               | Rotation Torque                 | 8 mN·m, 10 mN·m, 12 mN·m, 14 mN·m  |                                  |   |   |
|                               | Detents                         | 16 points, 24 points, 30 points, 32 points                                   |                                  |   |   |
|                               | Shaft Length Range              | L <sub>1</sub> =15 to 20 mm  | L <sub>1</sub> =15 to 30 mm      | L <sub>1</sub> =16 to 20 mm                     |   |
| Electrical                    | Output Signals                  | Phase A and B  |                                  |   |   |
|                               | Resolution                      | 8, 12, 15, 16 pulses/360 °   |                                  |   |   |
|                               | Rating                          | 1 mA 10 V DC (at each bit)   |                                  |   |   |
|                               | Contact Resistance              | 1 Ω max.   |                                  |   |   |
|                               | Chattering                      | 3 ms max.  |                                  |   |   |
|                               | Insulation Resistance           | 50 MΩ min. (at 250 V DC)   |                                  |   |   |
|                               | Dielectric Withstanding Voltage | 300 V AC for 1 minute  |                                  |   |   |
| Switch Part                   | Bouncing                        | 5 ms max.  |                                  |   |   |
|                               | Type                            | SPST Push-on   |                                  |   |   |
|                               | Rating                          | 20 mA 16 V DC  |                                  |   |   |
|                               | Contact Resistance              | 100 mΩ max.  |                                  |   |   |
|                               | Operating Force                 | 0.4 mm travel type : 3 N, 4 N , 6 N<br>1.5 mm travel type : 2.5 N, 4 N , 5 N |                                  |   |   |
| Endurance                     | Travel                          | 0.4 mm, 1.5 mm   |                                  |   |   |
|                               | Rotation Life (Encoder)         | 30,000 cycles min.   |                                  |   |   |
|                               | Operating Life (Switch)         | 30,000 cycles min.   |                                  |   |   |
| Minimum Quantity/Packing Unit |                                 | 50 pcs. (Tray Pack)  | 100 pcs. (Tray Pack)             | 50 pcs. (Tray Pack)                             | 100 pcs. (Tray Pack)                                    |
| Quantity/Carton               |                                 | 250 pcs. or 300 pcs.   | 500 pcs.                         | 250 pcs. or 300 pcs.                            | 500 pcs.  |

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Dimensions in mm (not to scale)

No. 1

**EVER**  
(Reflow Type)

General dimension tolerance : ± 0.5  
( ) dimensions are reference dimensions.

| Bushing length |        | L <sup>1</sup>        | (L <sup>2</sup> )     |
|----------------|--------|-----------------------|-----------------------|
| B              | 5.0 mm | 15.0 mm<br>to 17.0 mm | 11.5 mm<br>to 13.5 mm |
|                | 7.0 mm | 17.0 mm<br>to 20.0 mm | 13.5 mm<br>to 16.5 mm |

Shaft shape and dimension

No. 2

**EVEU**  
(Minimized Shaft Wobble Reflow Type)

General dimension tolerance : ± 0.5  
( ) dimensions are reference dimensions.

| L <sup>1</sup>        | (L <sup>2</sup> )     | (L <sup>3</sup> )    |
|-----------------------|-----------------------|----------------------|
| 16.0 mm<br>to 20.0 mm | 12.5 mm<br>to 16.5 mm | 6.5 mm<br>to 10.5 mm |

Material: Zinc alloy for die casting  
Shaft shape and dimension

No. 3

**EVEV**  
(Wave Soldering Type)

General dimension tolerance : ± 0.5  
( ) dimensions are reference dimensions.

| Bushing length |        | L <sup>1</sup>        | (L <sup>2</sup> )     |
|----------------|--------|-----------------------|-----------------------|
| B              | 5.0 mm | 15.0 mm<br>to 17.0 mm | 11.0 mm<br>to 13.0 mm |
|                | 7.0 mm | 17.0 mm<br>to 30.0 mm | 13.0 mm<br>to 26.0 mm |

Shaft shape and dimension

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
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## ■ Dimensions in mm (not to scale)

No. 4

**EVEY**  
(Minimized Shaft Wobble  
Wave Soldering Type)

General dimension tolerance :  $\pm 0.5$   
( ) dimensions are reference dimensions.

| L <sup>1</sup>        | (L <sup>2</sup> )     | (L <sup>3</sup> )    |
|-----------------------|-----------------------|----------------------|
| 16.0 mm<br>to 20.0 mm | 12.0 mm<br>to 16.0 mm | 6.0 mm<br>to 10.0 mm |

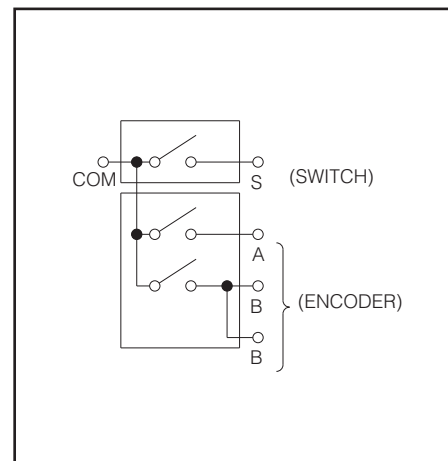
Material: Zinc alloy for die casting

## ■ PWB mounting hole for reference

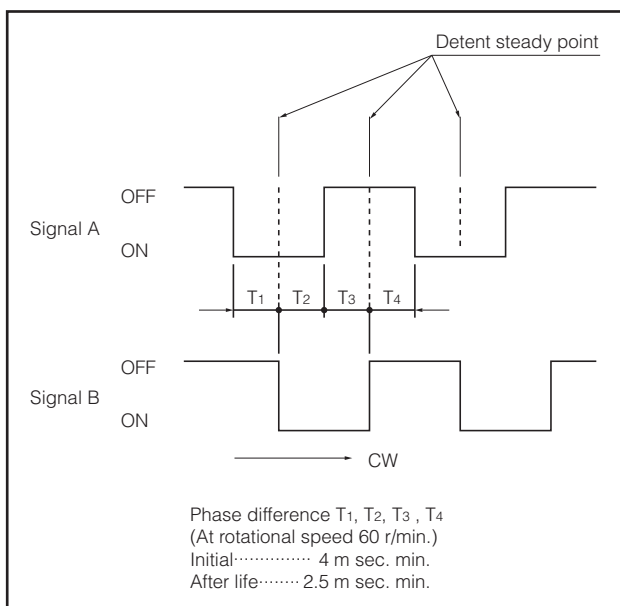
(Reflow Type)

(Wave Soldering Type)

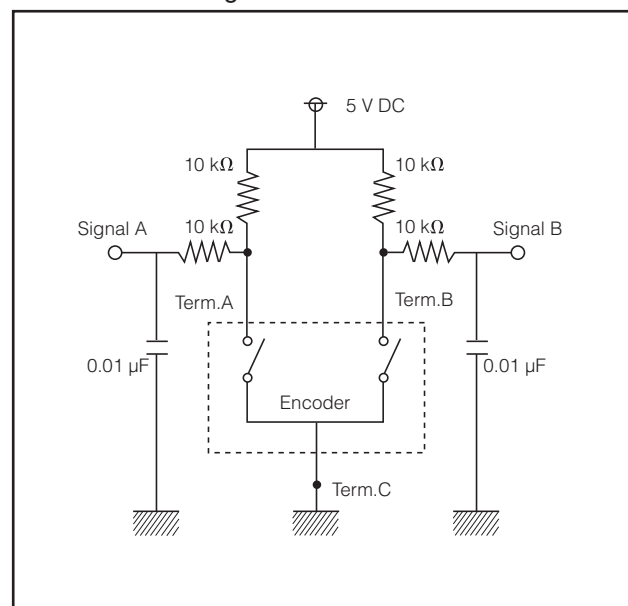
## ■ Encoder / Switch Circuit



## ■ Phase Difference



## ■ Test Circuit Diagram



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