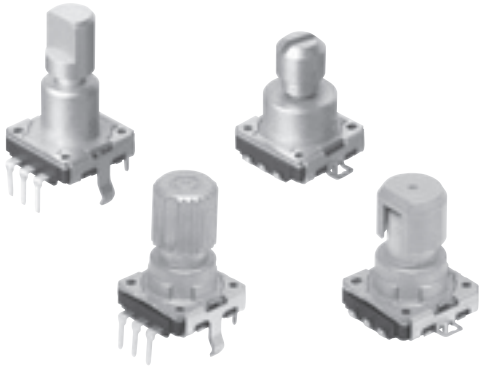
11 mm Square GS Encoders

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

1	2	3	4	5	6	7	8	9	10	11	12
E	V	E	□	□	□	□	□	□	□	□	□
Product Code				Specifications		Shaft Trims & Dimensions			Output(Pulses)		

4 th	Type
R	Reflow Type
U	Minimized Shaft Wobble Reflow Type
V	Wave Soldering Type
Y	Minimized Shaft Wobble Wave Soldering Type

■ Specifications

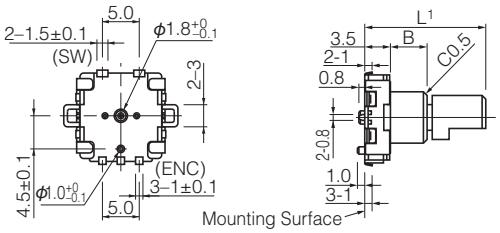
		EVER (Reflow Type)	EVEV (Wave Soldering Type)	EVEU (Minimized Shaft Wobble Reflow Type)	EVEY (Minimized Shaft Wobble Wave Soldering Type)
Mechanical	Rotation Angle	360 ° (Endless)			
	Shaft Pull/Push Strength	100 N min.			
	Shaft Wobble	0.6×L/30 (mm) max.		0.35×L/30 (mm) max.	
	Rotation Torque	8 mN·m, 10 mN·m, 12 mN·m, 14 mN·m			
	Detents	16 points, 24 points, 30 points, 32 points			
	Shaft Length Range	L_1=15 to 20 mm	L_1=15 to 30 mm	L_1=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			
	Bouncing	5 ms max.			
Switch Part	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 1.5 mm travel type : 2.5 N, 4 N , 5 N			
	Travel	0.4 mm, 1.5 mm			
Endurance	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.

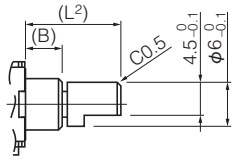
Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.
Should a safety concern arise regarding this product, please be sure to contact us immediately.

■ Dimensions in mm (not to scale)

No. 1

EVER
(Reflow Type)





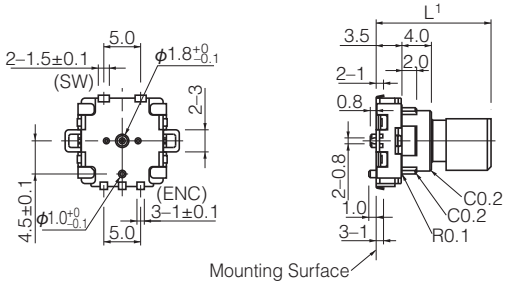
Shaft shape and dimension

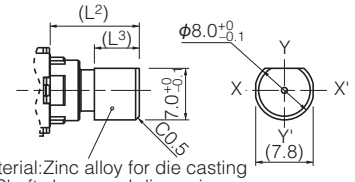
General dimension tolerance : ± 0.5
( )dimensions are reference dimensions.

Bushing length		L1	(L2)
B	5.0 mm	15.0 mm to 17.0 mm	11.5 mm to 13.5 mm
	7.0 mm	17.0 mm to 20.0 mm	13.5 mm to 16.5 mm

No. 2

EVEU
(Minimized Shaft Wobble
Reflow Type)





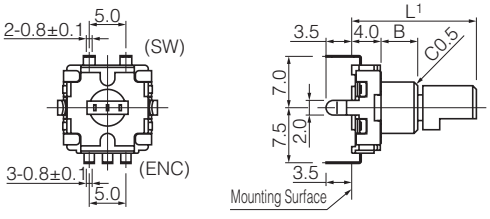
Material:Zinc alloy for die casting
Shaft shape and dimension

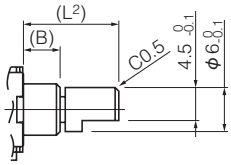
General dimension tolerance : ± 0.5
( )dimensions are reference dimensions.

L1	(L2)	(L3)
16.0 mm to 20.0 mm	12.5 mm to 16.5 mm	6.5 mm to 10.5 mm

No. 3

EVEV
(Wave Soldering Type)





Shaft shape and dimension

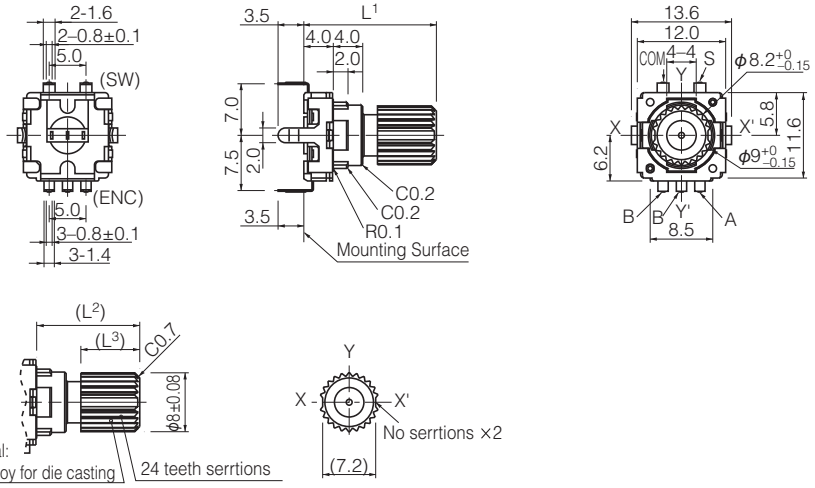
General dimension tolerance : ± 0.5
( )dimensions are reference dimensions.

Bushing length		L1	(L2)
B	5.0 mm	15.0 mm to 17.0 mm	11.0 mm to 13.0 mm
	7.0 mm	17.0 mm to 30.0 mm	13.0 mm to 26.0 mm

■ Dimensions in mm (not to scale)

No. 4

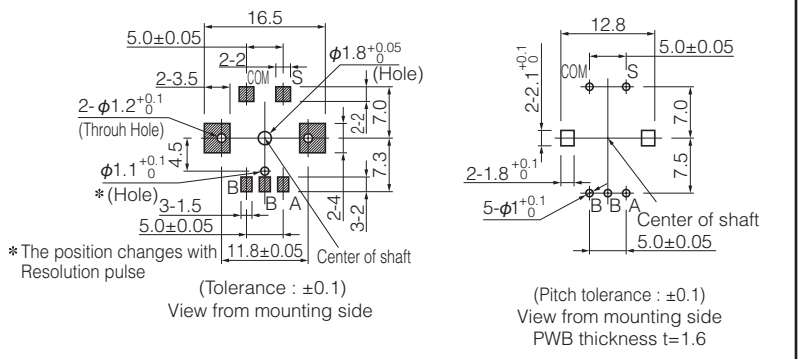
EVEY
(Minimized Shaft Wobble
Wave Soldering Type)



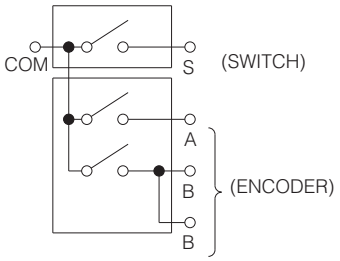
General dimension tolerance : ± 0.5
( )dimensions are reference dimensions.

L^1	(L^2)	(L^3)
16.0 mm to 20.0 mm	12.0 mm to 16.0 mm	6.0 mm to 10.0 mm

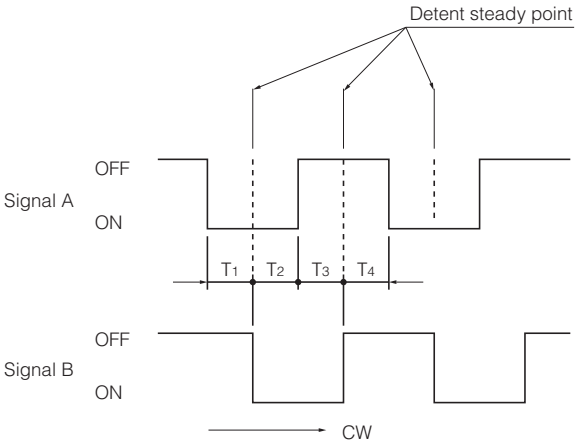
■ PWB mounting hole for reference



■ Encoder / Switch Circuit



■ Phase Difference



Phase difference T_1, T_2, T_3 , T_4
(At rotational speed 60 r/min.)
Initial····· 4 m sec. min.
After life····· 2.5 m sec. min.

■ Test Circuit Diagram