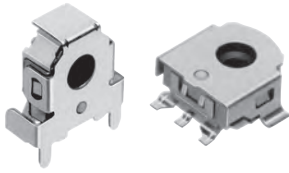


# EC05E 5mm Size Through Shaft Type

Compact type employing Alps Alpine DRUMCODE™ technology



## Typical Specifications

Items	Specifications
Rating	Each lead 0.55mA 5.5V DC max. Common lead 1.1mA 5.5V DC max.
Operating life	100,000 cycles
Operating temperature range	-30°C to +85°C

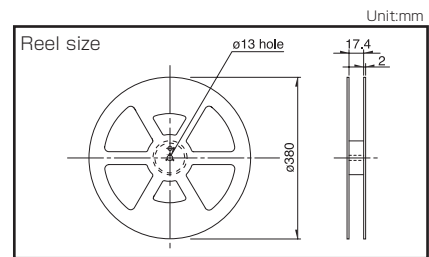
## Product Line

Detent torque (mN·m)	Number of detent	Number of pulse	Control part orientation	Mount height (mm)	Minimum order unit (pcs.)		Product No.	Drawing No.
					Japan	Export		
1.6±1.3	12	12	Horizontal	4.5	4,000	8,000	<b>EC05E1220202</b>	1
			Vertical	—	8,000	16,000	<b>EC05E1220203</b>	2
							<b>EC05E1220401</b>	3

## Packing specifications

Taping

Control part orientation	Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
	1 reel	1 case /Japan	1 case /export packing		
<b>Horizontal</b>	1,000	4,000	8,000	16	485×410×246
<b>Vertical</b>	2,000	8,000	16,000		



## Dimensions

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1			

Encoders

Metal Shaft


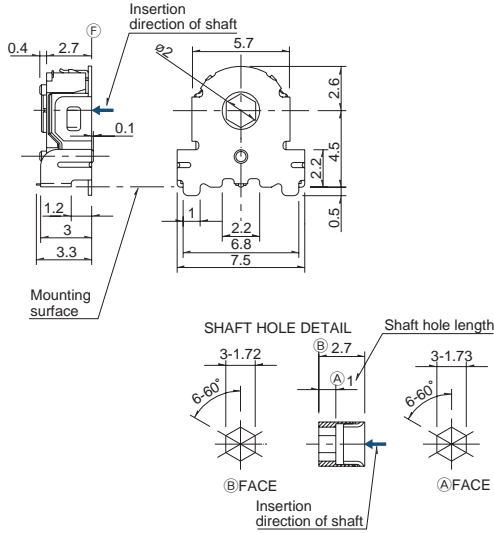
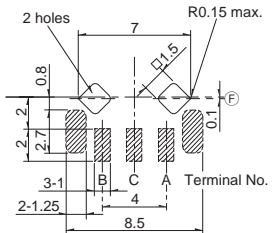

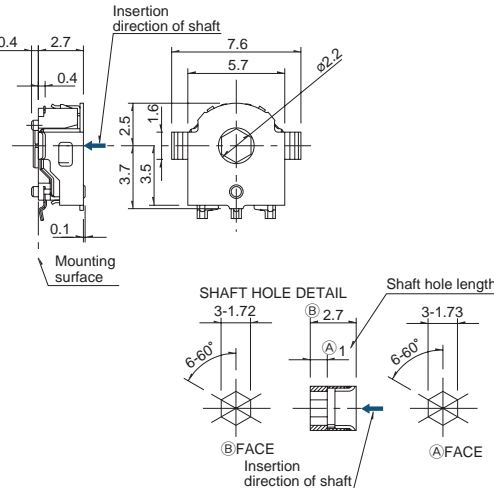
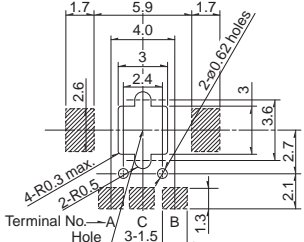
Insulated Shaft

Through Shaft Type

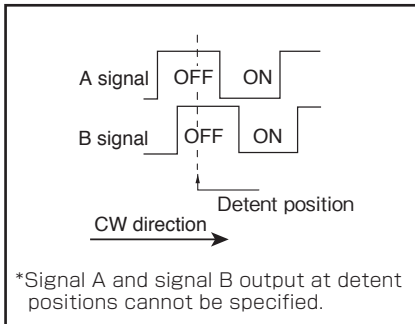
Ring Type

Dimensions

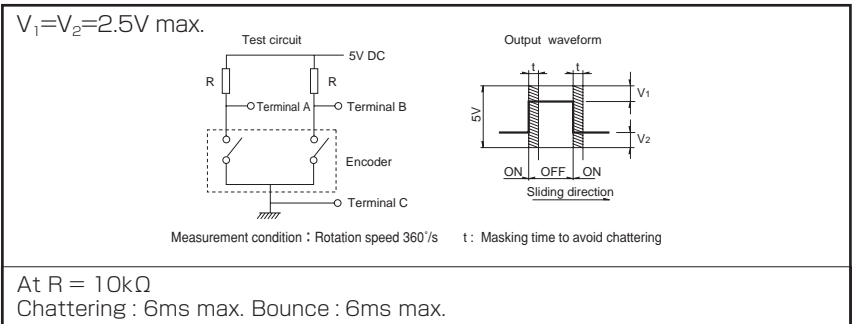
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
2			 <p>Shaded area: Solder land</p>
3			 <p>Shaded area: Solder land</p>









Output Wave



Sliding Noise



Encoders  
Metal Shaft  
Insulated Shaft  
Through Shaft Type  
Ring Type

Type		Through shaft type			Ring type	
		5mm size		10mm size	21mm size	
Series		<b>EC05E</b>		<b>EC10E</b>	<b>EC21A</b>	<b>EC21C</b>
Photo						
Output		Incremental (Two phase A and B)				
Shaft types		Through shaft type			Ring type	
Control part orientation		Vertical	Horizontal	Horizontal	—	—
Number of pulse / Number of detent		12/12		12/24 12/12	9/18 15/30	15/30
Features		Surface mount type		—	—	—
Dimensions (mm)	W	5.7	7.5	9.8	21.6	22
	D	6	3.3	4.4		21.6
	H	2.7	7.25	10.6/12.6/14.6	4	
Operating temperature range		-30°C to +85°C		-5°C to +45°C -40°C to +85°C (For Automotive)	-40°C to +85°C	
Operating life		100,000 cycles			50,000 cycles	
Automotive use		—		○	●	●
Life cycle (availability)						
Electrical performance	Rating	0.55mA 5.5V DC		1mA 5V DC	10mA 5V DC	
	Max./min. operating current (Resistive load)	0.55mA / —		—	10mA / 1mA	
	Insulation resistance	50MΩ min. 50V DC			100MΩ min. 250V DC	
	Voltage proof	50V AC for 1 minute			300V AC for 1minute or 360V AC for 2s	300V AC for 1minute or 360V AC for 1s
Mechanical performance	Rotational torque (Without detent)	—		—	—	—
	Detent torque	1.6±1.3mN·m		5±3mN·m 6±3mN·m	7±5mN·m 12±5mN·m 16±7mN·m	17±8mN·m (Initial) 12±7mN·m (After reflow)
	Push-pull strength	—		—	100N	
Shaft configuration		Through shaft type			Ring type	
Terminal type		Reflow		Insertion		
Switch Specifications	Switch type	—		—	—	—
	Contact arrangement	—		—	—	—
	Travel (mm)	—		—	—	—
	Operating force (N)	—		—	—	—
	Rating	—		—	—	—
	Contact resistance	—		—	—	—
	Operating life	—		—	—	—
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### Notes

- The operating temperature range for automotive applications can be raised upon request. Please contact us for details.
- Indicates applicability to all products in the series, while ○ indicates applicability to some products in the series.