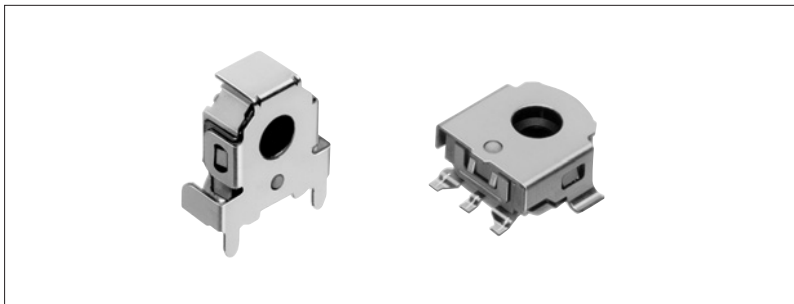


5mm size penetration axis type encoder

EC05E Series

Compact 12-pulse hollow shaft encoder ; Alps DRUMCODE™ technology adopted.

- Power
- Push
- Slide
- Rotary
- Encoders**
- Jog Shuttle
- Telephone-hook
- Detector**
- Vibration Sensors
- Dual-in-line Package Type
- Multi Control Devices
- TACT
- Incremental Type
- Absolute Type



Features

- Low-profile with a height of 2.5mm from the shaft center to the case top, 2.7mm thick and 5.7mm wide.
- A long-life type that can operate more than 100,000 cycles.
- An excellent detent mechanism with a good operational feel.
- Standard lineup includes both vertical and horizontal types.

Applications

- Telecommunication equipment such as cellular phones and personal digital assistance
- For various controllers for a remote controller for AV equipment, and etc.

Typical Specifications


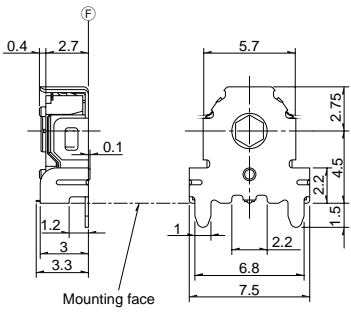
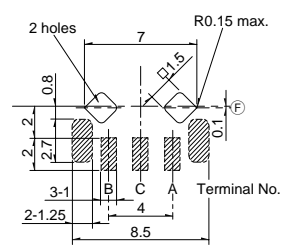

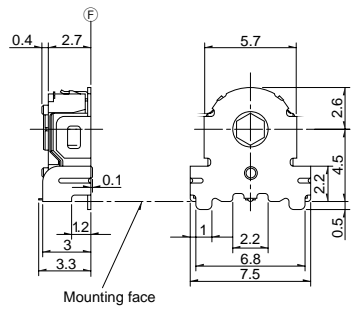
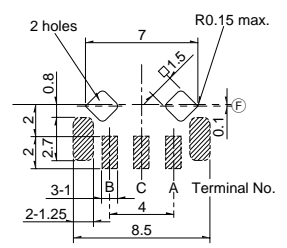
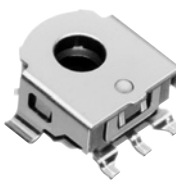
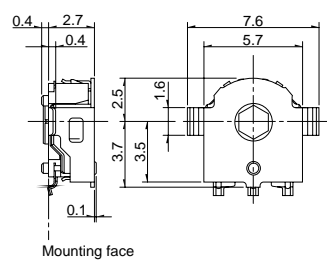
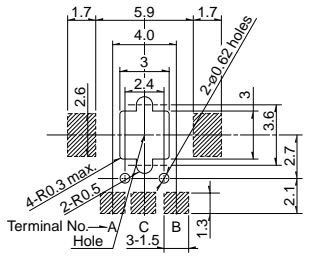
Items	Specifications
Rating	0.5mA 5V DC
Operating life	100,000 cycles

Products Line

Detent torque	Number of detent	Resolution	Operating direction	Mount height (mm)	Minimum packing unit (pcs.)	Products No.	Drawing No.
1.6±1.3 mN·m	12	12	Horizontal	4.5	1,000	EC05E1220202	1
						EC05E1220203	2
			Vertical	—	2,000	EC05E1220401	3

Dimensions

Unit : mm

No.	Model	Style	PC board mounting hole dimensions (Viewed from mounting size hatched area shows soldering land)
1	<p>Horizontal type</p> 		
2	<p>Horizontal type</p> 		
3	<p>Vertical type</p> 		

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Products Specifications

Items		Series	EC05E	EC10E	
Operating temperature range			-30°C to +85°C		
Maximum operating current (resistive load)			0.55mA	1mA	
Electrical performance	Rating		0.5mA 5V DC		
	Output signal		Output of A and B signals, proportionate to phase difference		
	Output phase		—		
	Output type		Incremental		
	Insulation resistance		50V DC 50MΩ min.		
	Voltage proof		50V AC		
Mechanical performance	Rotational torque		—		
	Detent torque		1.6±1.3 mN · m	5±3 mN · m	
	Puch-pull styrength		—		
	Resistance to soldering heat	Manual soldering		300°C or less, or within 3s	
		Dip soldering		—	260°C±5°C 3±1s
Durability	Operating life		100,000 cycles		
Environmental performance	Cold		-40±3°C for 240h		
	Dry heat		85±2°C for 240h		
	Damp heat		40±2°C, 90 to 95%RH for 240h		

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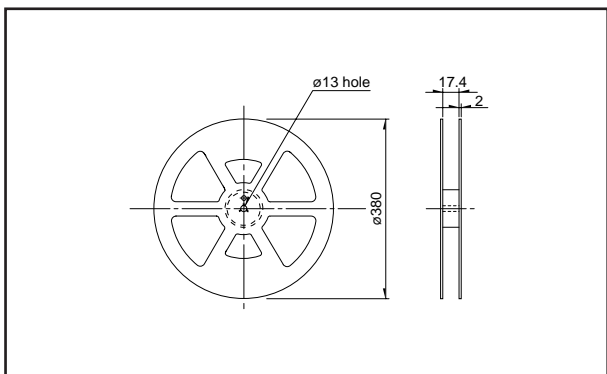
TACT

Incremental Type

Absolute Type

Taping Packaging

Reel Size Unit : mm



Reel Width

Applicable series	W (mm)
EC05E12202 EC05E12204	17.4

Unit : mm

Applicable series	Qty / reel (pcs.) (Mount height)	Tape dimensions
EC05E12202	1,000 (h=7.25) (h=7.1)	
EC05E12204	2,000	

Note

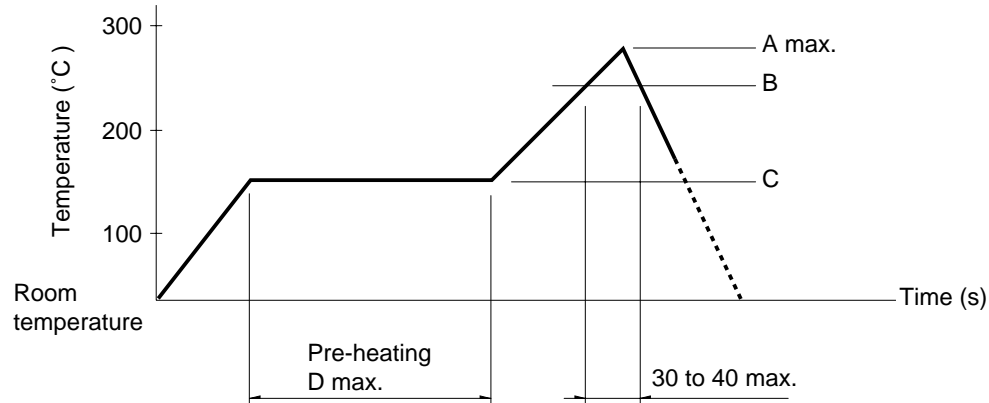
Note that vacuum chucking is unavailable in case of the mount height h = 7.1.

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Soldering Condition

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2 ϕ CA (K) or CC (T) at soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



Series(Reflow type)	A(°C) 3s max.	B(°C)	C(°C)	D(s)
EC05E	250	230	150	60 to 120

Notes

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. You are requested to verify the soldering conditions thoroughly beforehand.

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