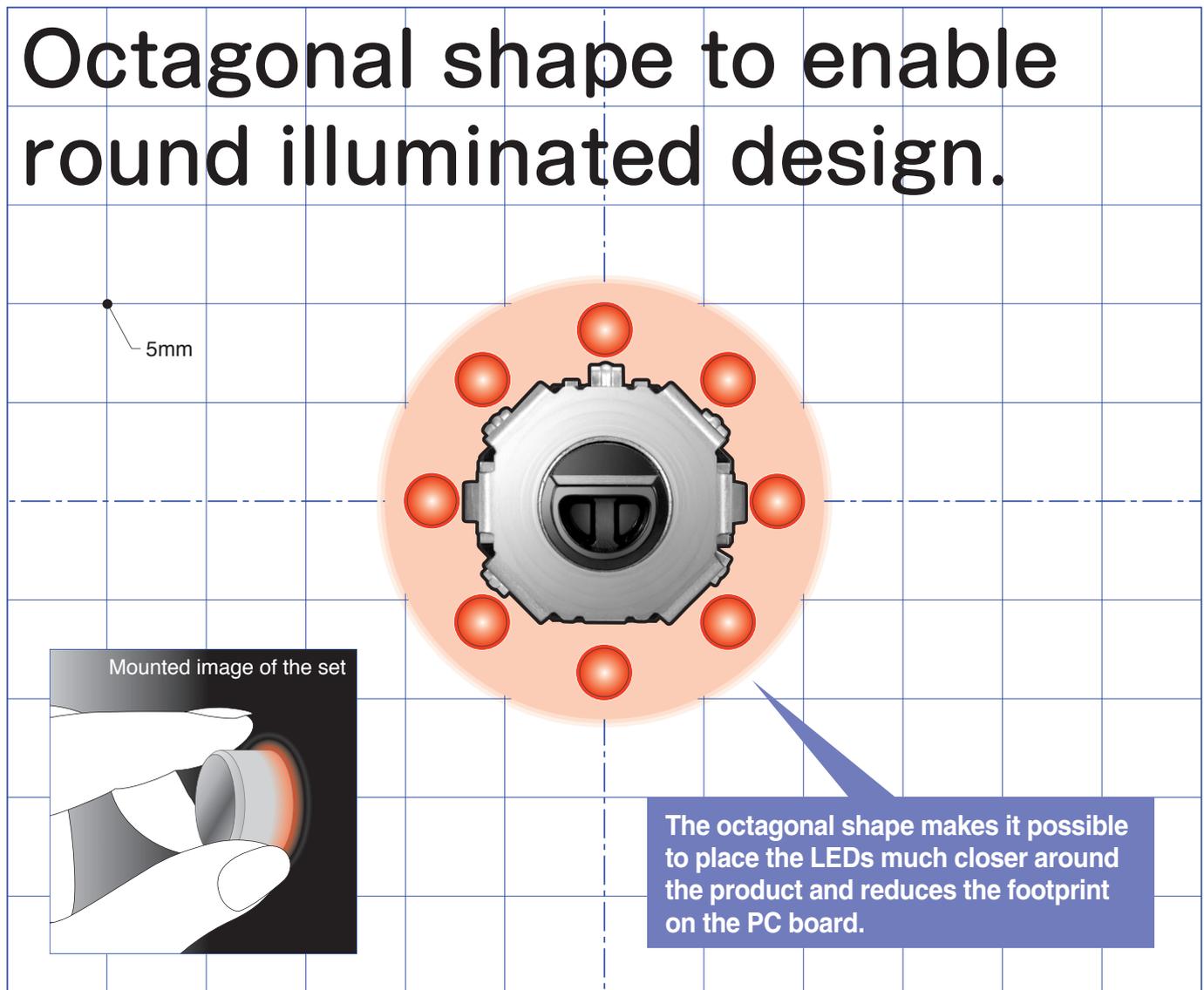


# 12mm Size Insulated Shaft Type Encoder for Automotive Use

EC12D Series

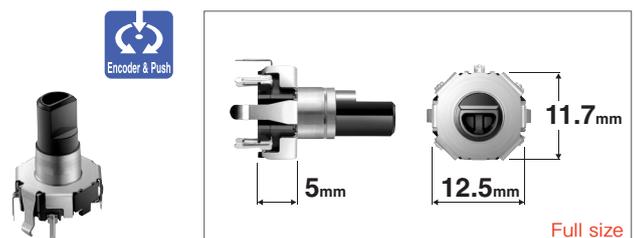
New  
2007

## Octagonal shape to enable round illuminated design.



**Precision press and processing technologies used to combine a switch & encoder, which realizes a compact product size with a low-profile, improving the flexibility of set design.**

- Incremental-type insulated shaft encoder with a push switch.
- With a compact size (12.5mm×11.7mm), the projected area was reduced by 20% compared with that of our conventional EC12E series.
- The shaft strength and operating temperature range are compliant with the automotive standards.
- The slightly rounded octagonal shape facilitates the design of the knob illumination.



Alps offers the improved set design flexibility with downsizing the PC board.

# 12mm Size Insulated Shaft Type Encoder for Automotive Use

EC12D Series



**Precision press and processing technologies used to combine a switch & encoder, which realizes a compact product size with a low-profile, improving the flexibility of set design.**

## Applications

**Volume control for car audio and car navigation systems.**

## Typical Specifications

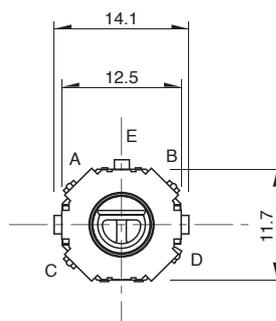
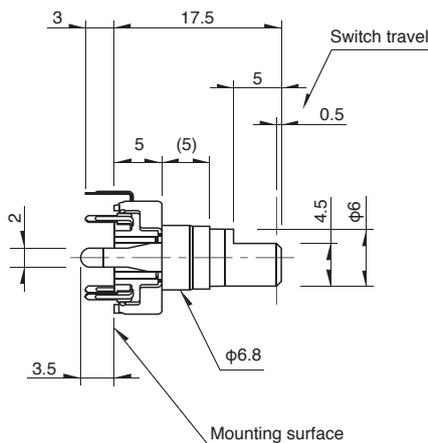
Items	Specifications
Maximum operating current (Resistive load)	5mA
Rating	0.5mA 5V DC
Output signal	Output of A and B signals, proportionate to phase difference
Sliding noise	Chattering : 3ms max. Bounce : 2ms max. (at R=10kΩ)
Number of pulse	15
Number of detent	30
Detent torque	5±3mN·m, 10±5mN·m
Push-pull strength	100N
Operating life	30,000 cycles

## Push-on Switch

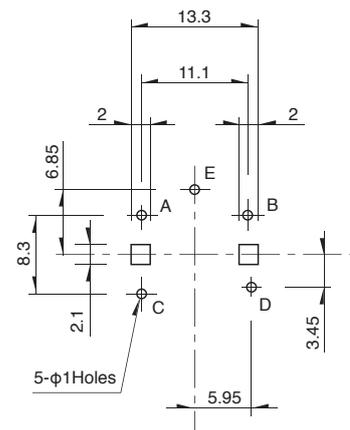
Items	Specifications
Switch circuit·the number of contact	Single pole and single throw (Push-on)
Travel of switch	0.5±0.3mm
Operating force of switch	3 $\begin{smallmatrix} +1.5 \\ -1.0 \end{smallmatrix}$ N
Rating	1mA 5V DC
Contact resistance	100mΩ max.
Operating life	30,000 times min.

## Dimensions

Unit:mm



PC board mounting hole dimensions (Viewed from the mounting side)



## Cautions for Use

1. Specification indicated in this catalog is outline only. When employing the product, use of an officially authorized specification for supply contract is recommended.
2. Unless specifically indicated otherwise, products in this catalog have been designed and manufactured for use in ordinary electronic equipment and devices, such as AV equipment, electric home appliances, office machines, and communications equipment. Equipment manufacturers are consequently advised that when these products are planned for equipment that requires a high degree of safety and reliability, especially those apparatuses like medical equipment, aviation and aircraft equipment, space equipment, and burglar alarm equipment, the manufacturers should assure equipment safety by providing protection circuits and redundant circuitry and should fully study the suitability of such products for the intended equipment.
3. The external appearance, performances, and other properties of the product may be changed for improvement without prior notice. The product introduced in this catalog may discontinue being produced without prior notice.
4. All product names, company names and names of standards described in this catalog are trademarks or registered trademarks of their respective owners.
5. Please contact us for any enquiries and queries on our products and their uses.
6. This catalog is valid till the end of December 2007.

## Inquiries about Products

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 Products Catalog Site <http://www3.alps.com>

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