



**Distributor of Epson: Excellent Integrated System Limited**

Datasheet of FC-145 32.7680KD-AC3 - Crystal 32.7680kHz 30ppm 9pF 70 kOhm -40°C - 85°C Surface Mount 2-SMD

Contact us: [sales@integrated-circuit.com](mailto:sales@integrated-circuit.com) Website: [www.integrated-circuit.com](http://www.integrated-circuit.com)

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## **Excellent Integrated System Limited**

Stocking Distributor

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[Epson](#)

[FC-145 32.7680KD-AC3](#)

For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

## Crystal unit

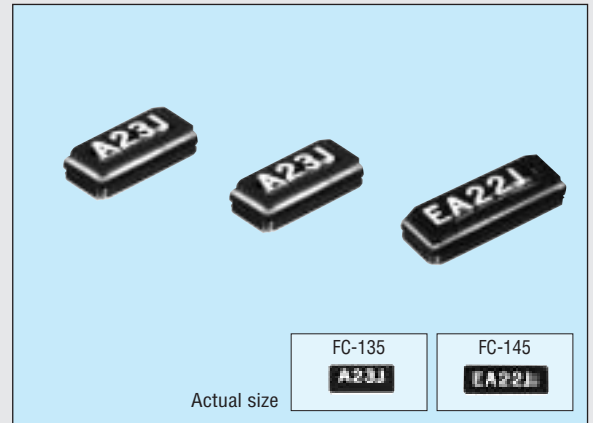
## THIN SMD LOW FREQUENCY CRYSTAL UNIT

# FC-135/145

Product number (please refer to page 1)

**Q13FC135xxxxxx00**
**Q13FC145xxxxxx00**

- High-density mounting-type SMD of 0.9 mm Max. thickness.
- Small packaging area and light weight.
- Excellent environmental capability.
- Most suitable for small communications devices.

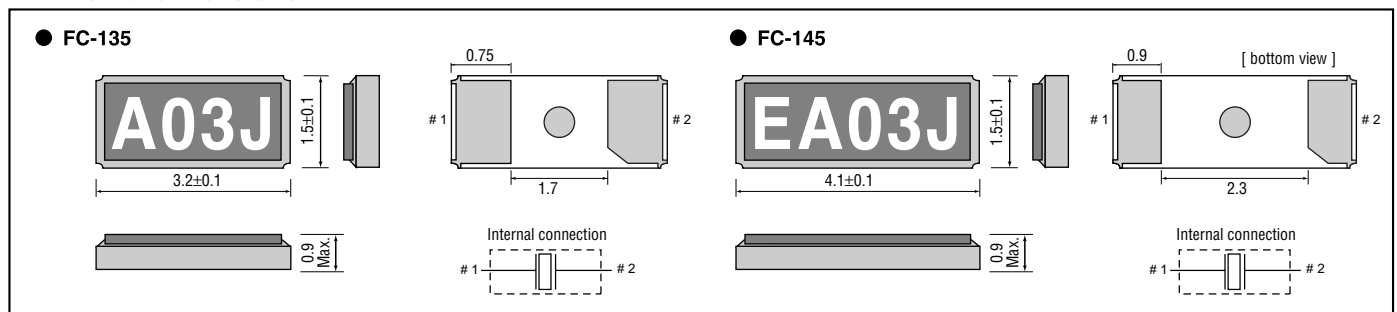


## Specifications (characteristics)

Item	Symbol	Specifications	Remarks	
Nominal frequency	f	32.768 kHz	please contact us for inquiries about the available frequency	
Temperature range	Storage temperature	T <sub>STG</sub>	-55 °C to +125 °C	Stored as bare product after unpacking
	Operating temperature	T <sub>OPR</sub>	-40 °C to +85 °C	
Maximum drive level	GL	0.5 μW Max.		
Recommended drive level	DL	0.1 μW		
Frequency tolerance(standard)	Δf/f	±20 × 10 <sup>-6</sup>	T <sub>a</sub> =+25 °C, DL=0.1 μW Please ask tighter tolerance	
Peak temperature(frequency)	θT	+25 °C ±5 °C		
Temperature coefficient(frequency)	a	-0.04 × 10 <sup>-6</sup> /°C <sup>2</sup> Max.		
Load capacitance	C <sub>L</sub>	9.0 pF, 12.5 pF	Please specify	
Series resistance	R <sub>1</sub>	70 kΩ Max.		
Motional capacitance	C <sub>1</sub>	1.7 fF Typ.		
Shunt capacitance	C <sub>0</sub>	1.3 pF Typ.		
Insulation resistance	IR	500 MΩ Min.		
Aging	fa	±3 × 10 <sup>-6</sup> /year Max.	T <sub>a</sub> =+25 °C ±3 °C, first year	
Shock resistance	S.R.	±8 × 10 <sup>-6</sup> Max.	100 g dummy (Seiko Epson Standard) drop from 1500 mm height on to the concrete 3 directions 10 times.	

## External dimensions

(Unit: mm)



## Recommended soldering pattern

(Unit: mm)

