

ULTRA THIN/COMPACT DC FANS – 16 mm square and 4 mm thick

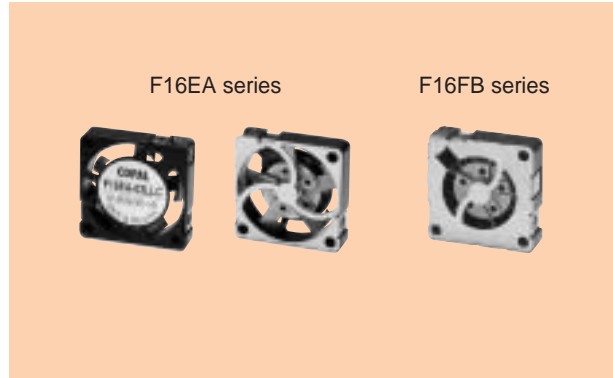
**NEW**

# F16EA/FB series

## BRUSHLESS DC FANS

### FEATURES

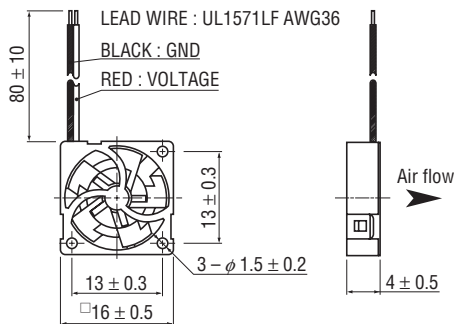
- Ultra thin/compact model, ideal for small electric instrument and local area cooling
- Battery drive available
- Large airflow/low noise realized by Meridian impeller which is highly effective and unique – Patent pending
- Long operating life achieved by sealed bearing structure
- FG signal output available



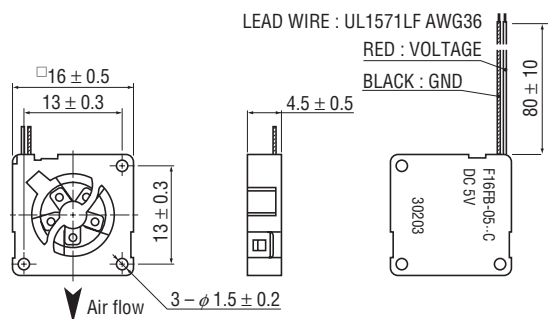
### OUTLINE DIMENSIONS

Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

#### ● F16EA



#### ● F16FB



### PART NUMBER DESIGNATION

**F 1 6 E A - 0 3 L L C -**      

#### Series name

F16EA : □16 mm Axial-flow type  
F16FB : □16 mm Blower type

#### Power supply

03 : DC3.3 V  
05 : DC5 V

#### Special spec. number

#### Bearing

C : CBR (Sleeve bearing)

#### Air flow

LL : Ultra-low airflow

**COPAL ELECTRONICS**

## STANDARD SPECIFICATIONS

	F16EA-03LLC	F16FB-05LLC
Operating temp. range	0 ~ 60 °C (35 ~ 85 %RH)	- 10 ~ 60 °C (35 ~ 85 %RH)
Storage temp. range	- 20 ~ 70 °C (35 ~ 85 %RH)	- 20 ~ 70 °C (35 ~ 85 %RH)
Rated voltage	3.3 V	5 V
Voltage range	3.2 ~ 3.5 V	4.5 ~ 5.5 V
Rated current	0.02 A	0.04 A
Rated speed	6,500 rpm	6,000 rpm
Air flow <sup>※1</sup>	0.012 m <sup>3</sup> /min	0.012 m <sup>3</sup> /min
Static pressure <sup>※1</sup>	4.7 Pa	5.5 Pa
Noise <sup>※2</sup>	3 dB(A)	3 dB(A)
Net weight	Approx. 1.3 g	Approx. 1.2 g

※ : Figures in the table are typical values under rated operating condition

※1 : AMCA210 Double chamber method (Rated voltage, Rated rotating speed)

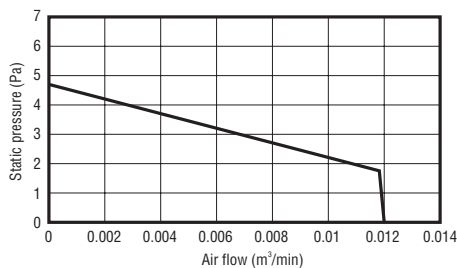
※2 : Measured at 1.5 ~ 3 cm from air inlet suspending fan at axis horizontal position in the air without any obstacles. Take the average for 10 seconds and convert into 1 m distance value

## COMMON SPECIFICATIONS

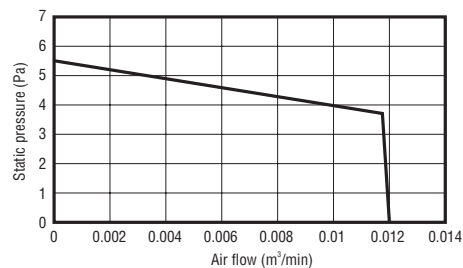
Insulation level	E (120°C) JIS C 4004
Insulation resistance	Min. 10 M ohm (Input 500 V(DC) between lead(+) and Housing)
Dielectric strength	Maximum 1m A of leak current (Input AC600 V for 1 sec. between lead(+) and housing)
Locked rotor	Without burning in coil and the fan should run normally (Locked rotor for 50 h with 3.3 V)
Mounting screw torque	No crack or no break (Screw with torque of 0.08 N-m using M1.2-screw)
Average life (MTTF)	Average life expectancy is more than 10,000 hours in continuous operation under 25 °C, 45 ~ 85 %RH.
Definition of average life	Life is defined as less than 30% reduction of its rpm from initial speed under below condition. Environmental condition : 25 °C, 45 ~ 85 %RH Test condition : continuous operation with no load
Component	Housing : Made of modified (LCP) reinforced (UL94V-0) Cover : Made of modified (SUS) reinforced Impeller : Made of modified (SUS) reinforced Bearing : Sleeve bearing

## AIRFLOW PERFORMANCE CURVES

### ● F16EA-03LLC (Representative)



### ● F16FB-05LLC (Representative)



## CBR BEARING

※CBR : COPAL • BEARING • REVOLUTION

CBR is a high efficiency bearing structure that developed and improved by NIDEC group's technique. The structure meets longer operating life/low noise by the structure to protect leakage of lubricating oil and by the oil holder structure in the bearing, compared to general sleeve bearings.

## Handling notes

- Do not let fan drop to avoid damaging precision bearing. If precision bearing is damaged, noise level might increase.
- Do not load the power over 0.2 N in the centre of metal cover.
- Do not reverse the connections.
- Please Keep air flow hole at 14.9 mm in diameter to keep the fan's performance.

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