

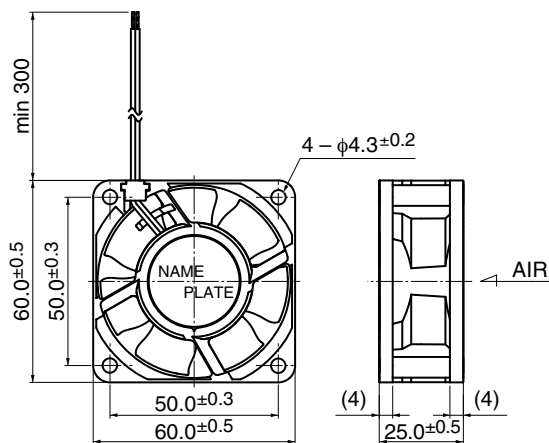
06025SA

DC Axial Fan Ball Bearing

60[□]X25^L

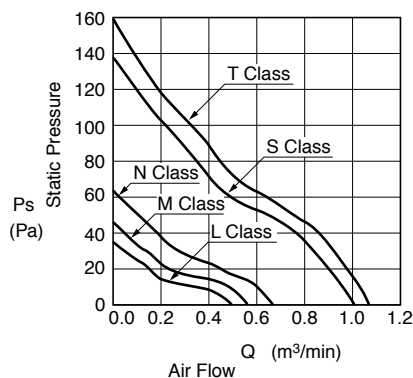


Outline



* Outline is A (Rib) type.

Characteristic Curves



General Specifications

Motor Protection Auto Restart / Polarity Protection

Insulation Resistance 10MΩ or over with a DC500V Megger

Dielectric Withstand Voltage : AC700V 1s

Allowable Ambient : -10°C ~ +70°C (Operating)

Temperature Range -40°C ~ +70°C (Storage)
non-condensing environment

Expected Life

※ Failure Rate: 10% (L10 Life)

60°C 40,000 (Hours) (L~N Class)

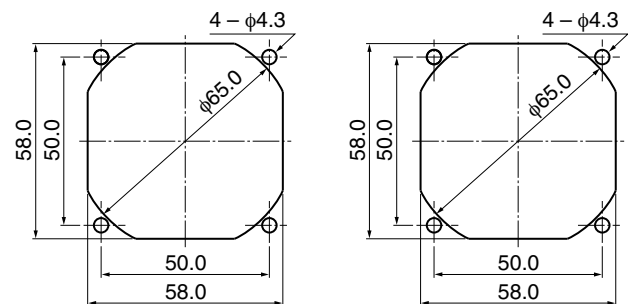
60°C 35,000 (Hours) (S Class)

25°C 90,000 (Hours) (T Class)

Panel Out-cuts

(Inlet Side)

(Outlet Side)



Material

Casing : Plastic (Black) UL94V-0

Impeller : Plastic (Black) UL94V-0

Bearing : Ball Bearing

Lead Wire : UL3385 AWG26 + : Red, - : Black

Specifications

□ = Casing Form --- A: Rib Type, E: Flange Type

Model		Product No.	Rating Voltage	Operating Voltage	Current	Input Power	Speed	Max. Air Flow		Max. Static Pressure		Noise	Mass
			(V)	(V)	(A)* ¹	(W)* ¹	(min ⁻¹)* ¹	(m ³ /min)* ¹	(CFM)* ¹	(Pa)* ¹	(In H ₂ O)* ¹	(dB)* ¹	(g)
06025SA-12L-□A-	D0	12	6.0 ~ 13.8	0.08	0.96	3500	0.48	16.9	35.0	0.14	23.5	65	
06025SA-12M-□A-	D0			0.10	1.20	4000	0.56	19.8	46.0	0.18	27.5		
06025SA-12N-□A-	D0			0.15	1.80	4700	0.66	23.3	63.0	0.25	33.0		
06025SA-12T-□A-	D0			0.43	5.16	7500	1.07	37.8	158.5	0.63	47.0		
06025SA-24L-□A-	D0	24	12.0 ~ 27.6	0.04	0.96	3500	0.48	16.9	35.0	0.14	23.5		
06025SA-24M-□A-	D0			0.06	1.44	4000	0.56	19.8	46.0	0.18	27.5		
06025SA-24N-□A-	D0			0.08	1.92	4700	0.66	23.3	63.0	0.25	33.0		
06025SA-24S-□A-	D0			0.17	4.08	7000	1.01	35.7	138.0	0.55	42.5		

Rotation: Clockwise as seen from the label side
Airflow Outlet: Label side

*1: Average Values in Free Air

General Specifications

Motor Type: DC Brushless Motor

Motor Protection: Auto Restart/Polarity Protection

Motor withstands reverse connection for positive and negative leads.

Insulation Resistance:

10M Ω or over with a DC500V Megger

Dielectric Withstand Voltage:

AC 700V 1s or 500V 1min

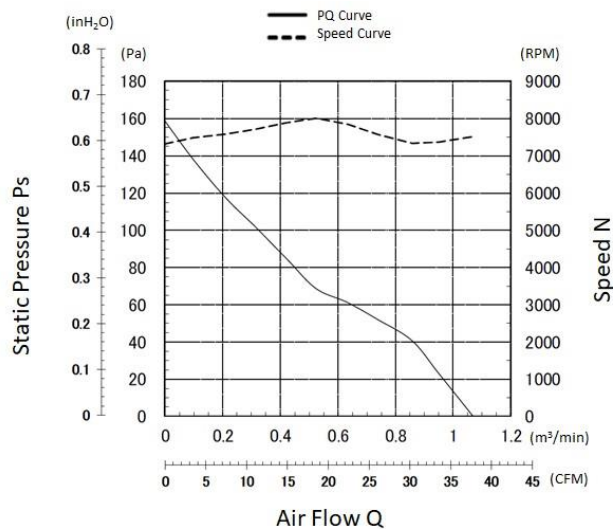
Allowable Ambient Temperature Range:

-10°C ~ +70°C (Operating)

-40°C ~ +70°C (Storage)

(non-condensing environment)

Characteristics Curves



PWM Benefits & Applications

PWM Benefits

- Increased Life Expectancy
- Energy Saving
- Lower Vibration
- Lower Noise
- Current Spike Prevention

PWM Applications

- Routers
- Switches
- Storage
- Data Centers
- Optical Repeaters
- Broadcast Equipment
- Inverters
- UPS
- Battery Chargers
- Fuel Cells
- Industrial Power Supplies
- Welders
- Plasma Cutters
- Instrumentation
- Test Equipment
- Enclosures and more

- Customized fan performances at multiple operating points.
- Peak efficiency resulting in lower total ownership costs.
- Cost effective and better reliability.

Life Expectancy L10

25°C 90,000 Hours

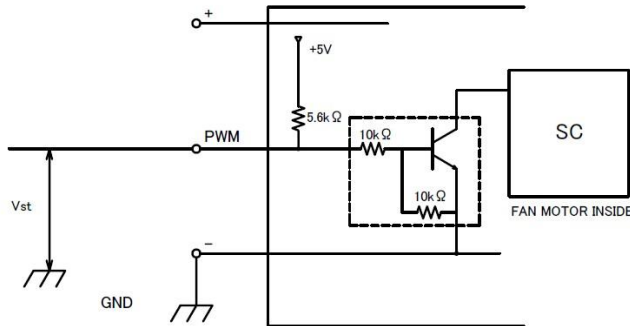
Specifications

MODEL	Rated Voltage	Operating Voltage	Current		Input Power		Speed	Max. Air Flow		Max. Static Pressure		Noise	Mass
	(V)	(V)	Avg	Max	Avg	Max	(min ⁻¹) ¹	(CFM)	(m³/min)	(inH₂O)	(Pa)	(dB) ¹	(g)
	(V)	(V)	(A) ¹	(A) ¹	(W) ¹	(W) ¹	(min ⁻¹) ¹	(CFM)	(m³/min)	(inH₂O)	(Pa)	(dB) ¹	(g)
06025SA-12T-AU-D3	12	10.8 ~ 13.2	0.43	0.66	5.16	7.92	7500	37.8	1.07	0.64	158.5	47.0	65

*1: Values in Free Air

PWM Specifications

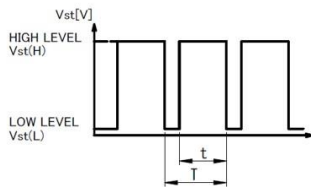
PWM CONTROL ● CONNECTION



1. PWM Control

V_{st} = Low Level (0V~0.4V) → Low Speed(On Duty 0%)
 V_{st} = High Level (4.0V~5.0V) → Full Speed(On Duty 100%)
 V_{st} = Open → Full Speed

2. PWM Duty & PWM Input Pulse



PWM Duty means that a ration of high level time (t)/PWM Input Pulse(T).

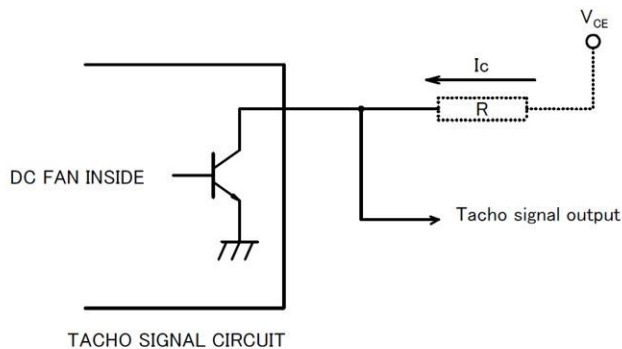
$(t/T) \times 100$: On Duty 0% ~ 100%

PWM Frequency $f = 25[\text{kHz}]$

TACHO Specifications

TACHOMETER SIGNAL

1. OUTPUT CIRCUIT : OPEN COLLECTOR
2. SPECIFICATION
 $T_a = 25^\circ\text{C}$
 Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$
 V_{ce} max : +15V
 I_c max : 5mA [$V_{ce}(\text{sat})$ max = 0.5V]



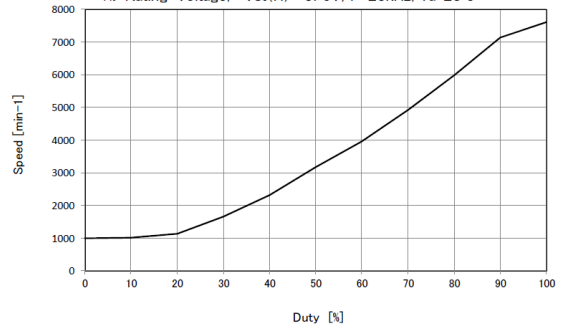
TACHO SIGNAL CIRCUIT

PWM Characteristics Curve

Duty Vs Speed Curve

<Reference Value>

At Rating Voltage, $V_{st}(H) = 5.0\text{V}$, $f = 25\text{kHz}$, $T_a = 25^\circ\text{C}$



3. The condition for PWM control are as follows.

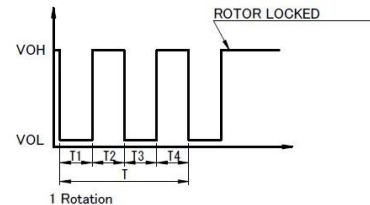
•When you use this under PWM control, always be sure the motor's operation under practical mounting state.

•Fan motor may not start up caused by PWM control at very low speed condition.

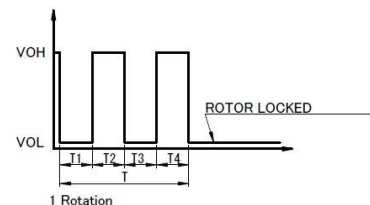
•To run at Rating Voltage.

3. OUTPUT WAVEFORM : AT RATED VOLTAGE OUTPUT SIGNAL VOLTAGE

3-1 Case-1



3-2 Case-2

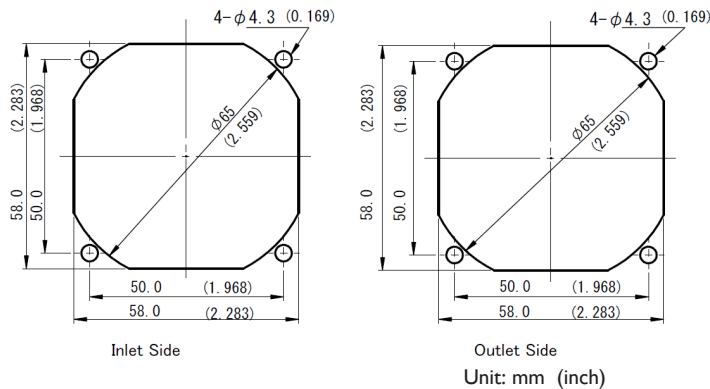


- 1) When the rotor is locked at VOH position of signal, signal keeps VOH position.
- 2) When the rotor is locked at VOL position of signal, signal keeps VOL position.
- 3) $T = T1 + T2 + T3 + T4 = 60/m = 1$ rotation

m : min - 1

Tach Duty Cycle = $50\% \pm 10\%$

Panel Cut-Outs

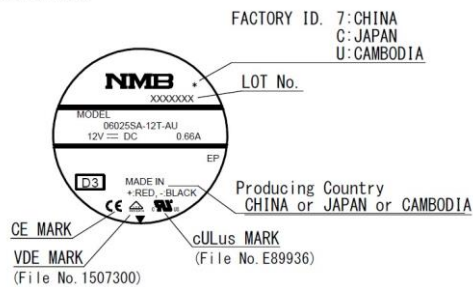


Materials

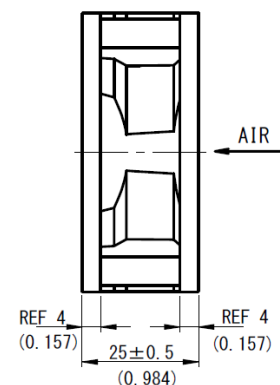
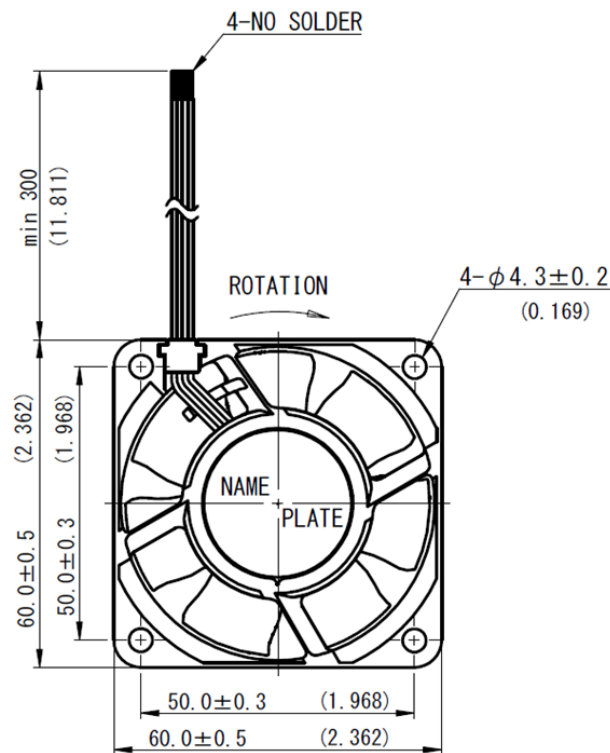
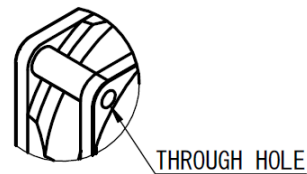
Casing : Plastic (Black UL94V-0)
 Impeller : Plastic (Black UL94V-0)
 Bearing : Ball Bearing
 Lead Wire : UL10368 AWG26
 (+) : Red (-) : Black
 PWM : Brown Tach : White

Outline

Name Plate



RIB TYPE



Unit: mm (inch)