

# San Ace 60 GA type

## Low power consumption fan

Low power consumption fan 60mm

### Features

#### Energy-saving

Power consumption is reduced by approx. 15 % compared with our conventional fan\*.

#### Low sound pressure level

Sound pressure level is reduced by 3dB(A) compared with our conventional fan\*.

\* Model No: 9GA0612P1K60.  
When air flow is almost identical.  
Our conventional model : 60 × 60 × 38 mm fan “San Ace 60” GV type.



**60 × 60 × 38mm**

### Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	PWM duty cycle*[%]	Rated Current [A]	Rated Input [W]	Rated Speed [min <sup>-1</sup> ]	Air Flow [m <sup>3</sup> /min] [CFM]		Static Pressure [Pa] [inchH <sub>2</sub> O]		SPL [dB(A)]	Operating Temperature [°C]	Life Expectancy [h]
9GA0612P1J03(031)	12	10.8 to 12.6	100	1.50	18.00	17,500	1.75	62	820	3.3	63	-10 to +60	30,000
			20	0.10	1.20	4,000	0.40	14	43	0.17	24		
9GA0612P1K03(031)		10.8 to 13.2	100	0.95	11.40	14,800	1.50	53	600	2.4	59	-10 to +70	
			20	0.10	1.20	4,000	0.40	14	43	0.17	24		
9GA0612P1H03(031)		100	0.55	6.60	11,500	1.15	40	375	1.5	52	-10 to +60		
												20	
9GA0612P1K60(601)	100	0.95	11.40	14,800	1.50	53	675	2.7	59	-10 to +60			
											0	0.05	0.60

The numbers in ( ) represent ribless models.

※PWM Frequency:25kHz

Note : 9GA0612P1J03(031), 9GA0612P1K03(031),9GA0612P1H03(031) does not rotate when PWM duty cycle is 0%.

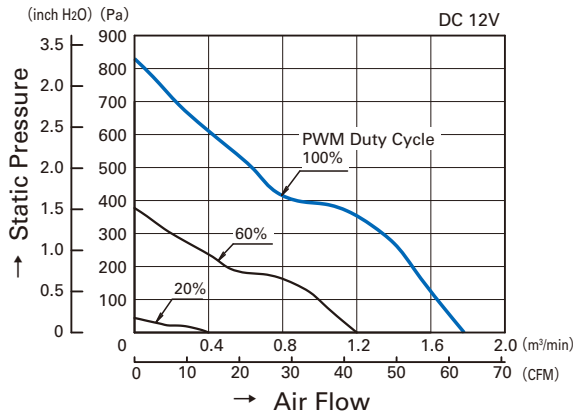
### Common Specifications

- Material ..... Frame, Impeller: Plastics (Flammability: UL94V-0)
- Life Expectancy ..... Varies for each model  
(L10: Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Motor Protection System ..... Current blocking function and Reverse polarity protection
- Dielectric Strength ..... 50/60 Hz, 500VAC, 1 minute (between lead conductor and frame)
- Sound Pressure Level (SPL) ..... Expressed as the value at 1m from air inlet side
- Operating Temperature ..... Varies for each model (Non-condensing)
- Storage Temperature ..... -30°C to +70°C (Non-Condensing)
- Lead Wire ..... ⊕red ⊖black Sensor: yellow Control: brown
- Mass ..... Approx. 130 g

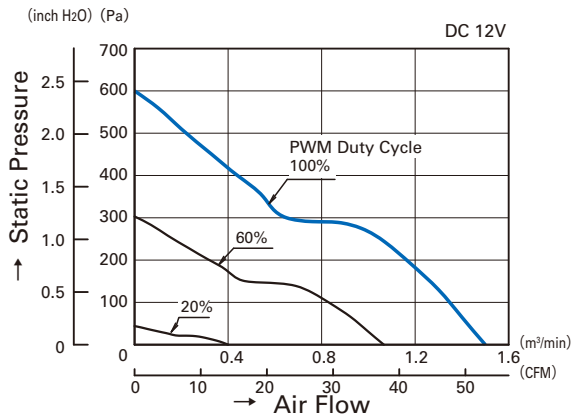
60mm

## Air Flow - Static Pressure Characteristics

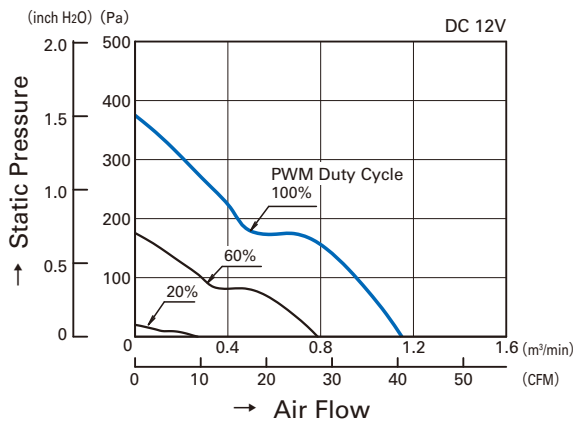
### PWM Duty Cycle



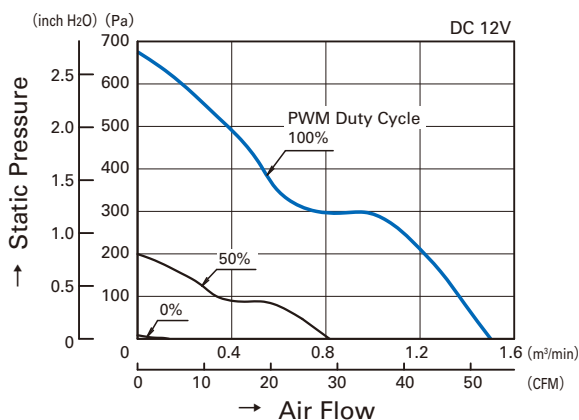
**9GA0612P1J03(031)**



**9GA0612P1K03(031)**

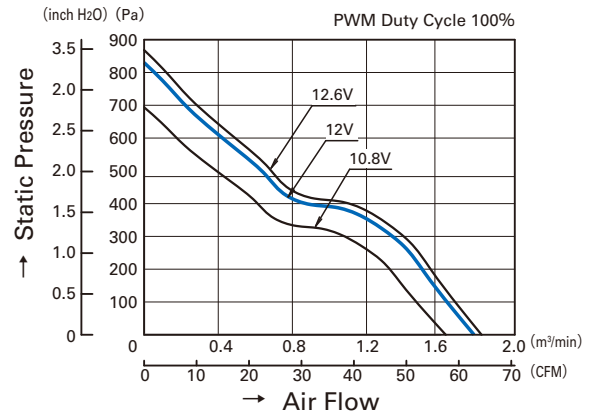


**9GA0612P1H03(031)**

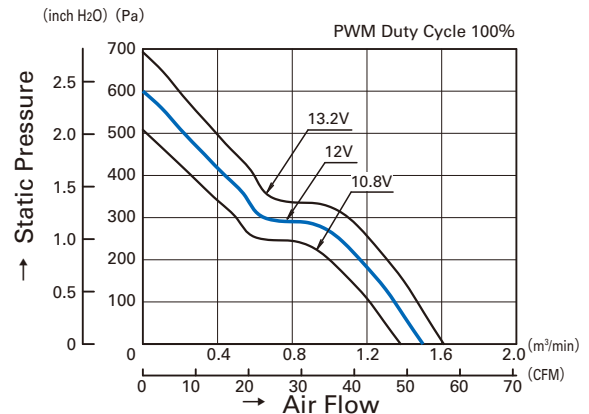


**9GA0612P1K60(601)**

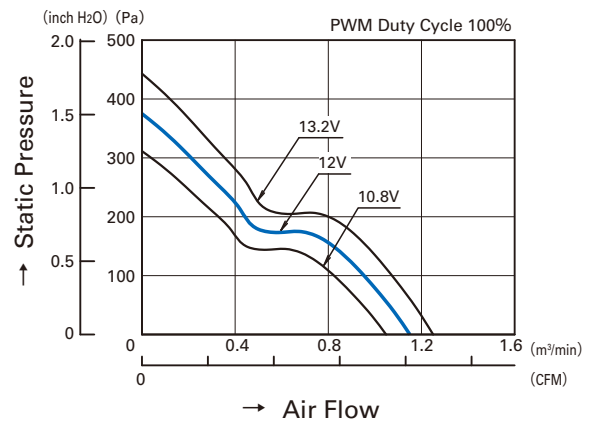
### Operating Voltage Range



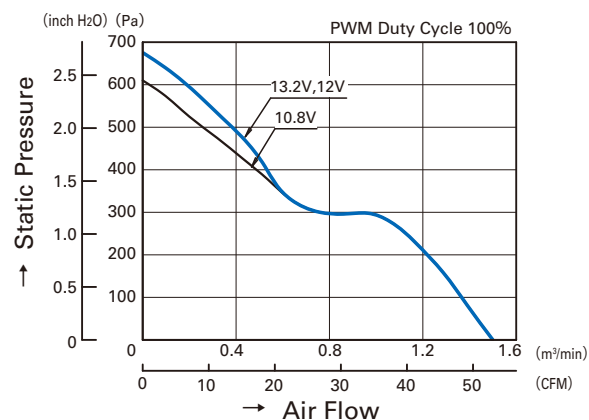
**9GA0612P1J03(031)**



**9GA0612P1K03(031)**

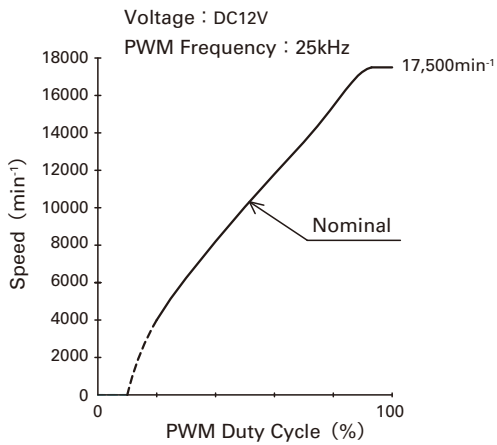


**9GA0612P1H03(031)**

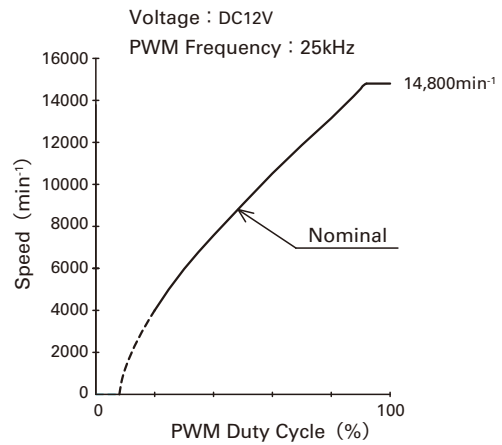


**9GA0612P1K60(601)**

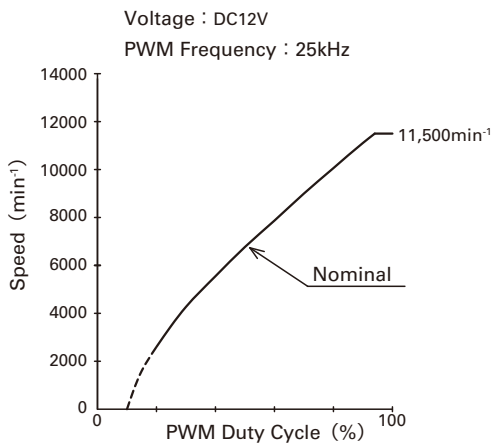
**PWM Duty - Speed Characteristics Example**



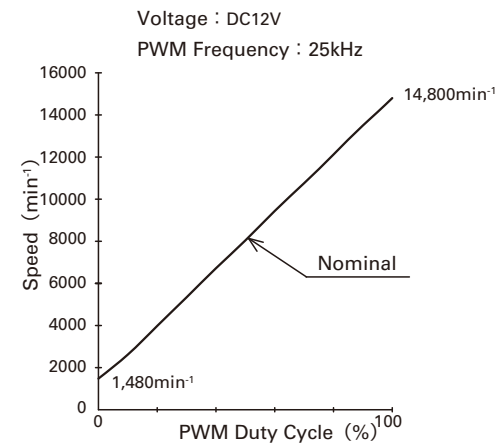
**9GA0612P1J03(031)**



**9GA0612P1K03(031)**



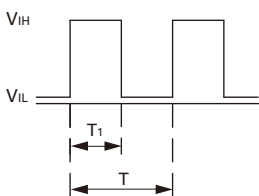
**9GA0612P1H03(031)**



**9GA0612P1K60(601)**

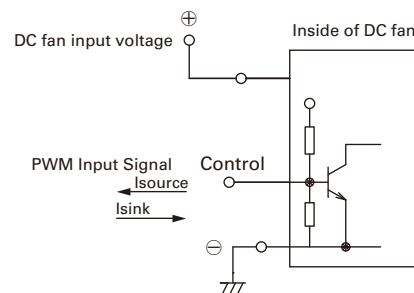
**PWM Input Signal Example**

Input Signal Wave Form



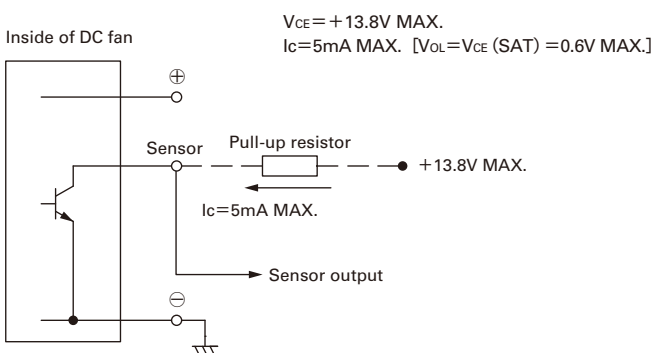
$V_{IH}=4.75V$  to  $5.25V$   
 $V_{IL}=0V$  to  $0.4V$   
 PWM Duty Cycle (%) =  $\frac{T_1}{T} \times 100$   
 PWM Frequency 25 (kHz) =  $\frac{1}{T}$   
 Source Current : 5mA Max. at control voltage 0V  
 Sink Current : 5mA Max. at control voltage 5.25V  
 Control Terminal Voltage : 5.25V Max. (Open Circuit)  
 When the control lead wire is no connecting,  
 the speed is the same speed as at 100% of PWM cycle.  
 This fan speed should be controlled by PWM input signal  
 of either TTL input or open collector, drain input.

**Connection Schematic**

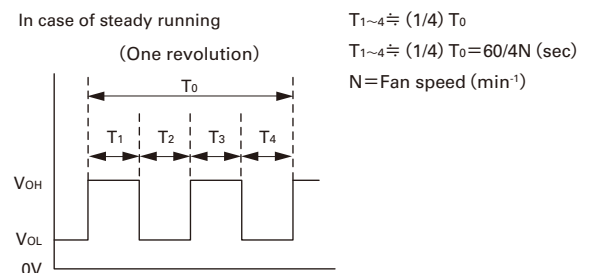


**Pulse Sensor Specification**

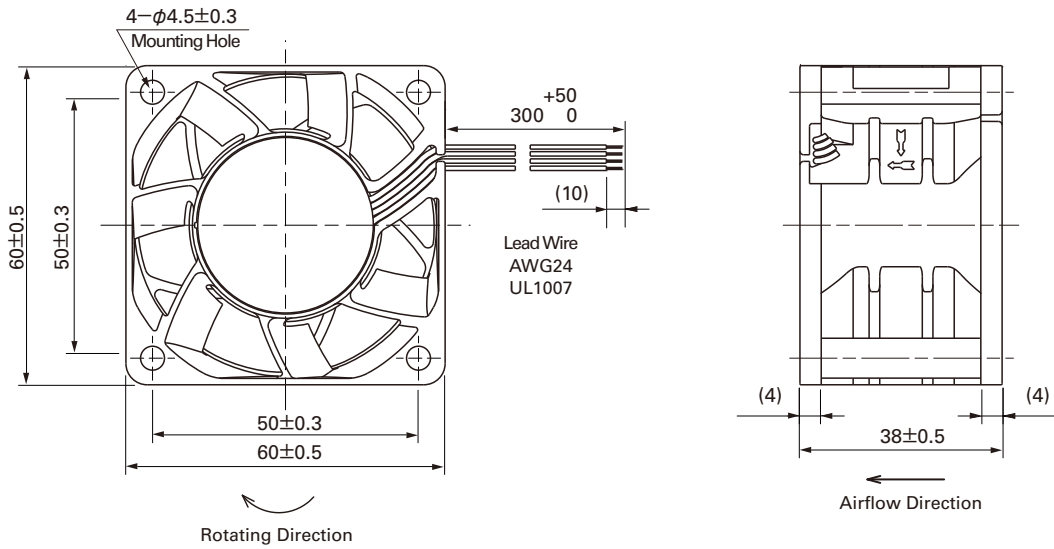
Output circuit : Open collector



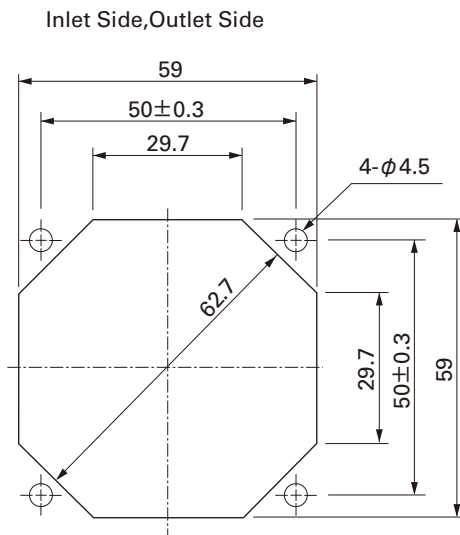
Output waveform (Need pull-up resistor)



**Dimensions (unit : mm) (With ribs)**



**Reference dimension of mounting holes and vent opening (unit : mm)**



**Notice**

- The products shown in the catalog are subject to Japanese Export Control Law. Diversion contrary to the law of exporting country is prohibited.
- To protect against electrolytic corrosion that may occur in locations with strong electromagnetic noise, we provide fans that are unaffected by electrolytic corrosion.