San Ace 40*T* 9GT type
Wide Temperature Range Fan

Features

Wide Operating Temperature Range

This fan can be used in a wide temperature range of -40 to +85°C.*
From low-temperature freezers to high-temperature lighting, it can be used with confidence.
Its wide range allows it to be used in even harsher conditions within conventional applications including ICT equipment, PV inverters, and rapid EV chargers.

* The 9GT0412P3K003 model has an operating temperature range of -40 to +80°C.

40×40×28 mm

Specifications

The models listed below **have pulse sensors with PWM control function.**

Model no.	Rated voltage [V]	Operating voltage range [V]	PWM duty cycle* [%]	Rated current [A]	Rated input [W]	Rated speed [min⁻¹]	Max. airflow [m³/min]	Max. airflow [CFM]	Max. static pressure [Pa]	Max. static pressure [inchH₂O]	SPL [dB(A)]	Operating temperature [°C]	Expected life** [h]
9GT0412P3K003	12	10.8 to 12.6	100	0.64	7.68	15000	0.66	23.3	338	1.35	55	-40 to +80	40000/60°C (70000/40°C)
			0	0.11	1.32	6000	0.26	9.18	54	0.21	32		
9GT0412P3J001***		10.2 to 13.8	100	0.31	3.72	11700	0.52	18.4	206	0.827	48	-40 to +85	40000/85°C
			30	0.08	0.96	4100	0.18	6.36	25.2	0.10	21		
9GT0424P3J001***	24	20.4 to 27.6	100	0.15	3.6	11700	0.52	18.4	206	0.827	48		
			30	0.05	1.2	4100	0.18	6.36	25.2	0.10	21		

* PWM frequency: 25 kHz. ** Expected life at 40˚C is for reference only. *** Fan does not rotate when PWM duty cycle is 0%.

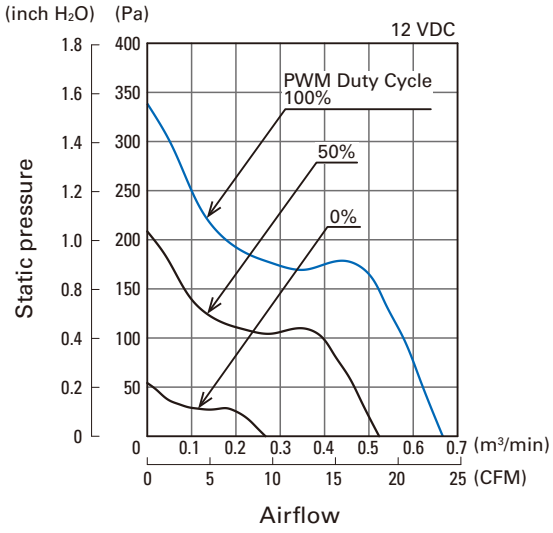
Models with the following sensor specifications are also available as options: Without Sensor | Pulse sensor | Lock sensor

Common Specifications

- ☐ Material ····· Frame: Aluminum, Impeller: Plastic (Flammability: UL 94V-1)
- ☐ Expected life ····· Refer to specifications
  (For 9GT0412P3K003, L10 life: 90% survival rate for continuous operation in free air at 60˚C, rated voltage)
  (For 9GT0412P3J001 and 9GT0424P3J001, L10 life: 90% survival rate for continuous operation in free air at 85˚C, rated voltage)
- ☐ Motor protection system ····· Current blocking function and reverse polarity protection
- ☐ Dielectric strength ····· 50/60 Hz, 500 VAC, for 1 minute (between lead wire conductors and frame)
- ☐ Sound pressure level (SPL) ··· At 1 m away from the air inlet
- ☐ Operating temperature ····· Refer to specifications (Non-condensing)
- ☐ Storage temperature ····· -40 to +85°C (Non-condensing)
- ☐ Lead wire ····· ⊕ Red ⊖ Black [Sensor] Yellow [Control] Brown
- ☐ Mass ····· 55 g

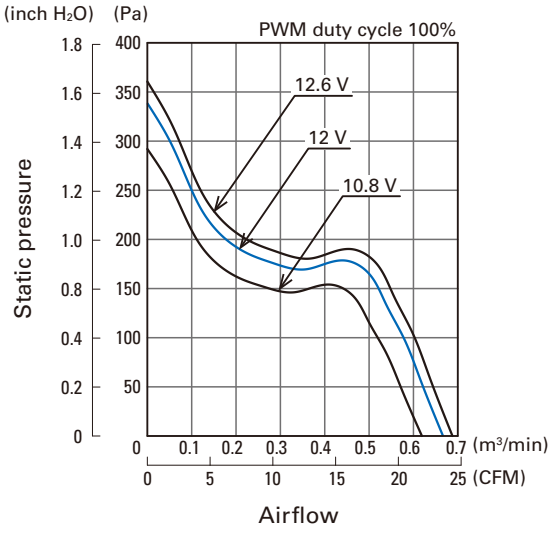
Airflow - Static Pressure Characteristics

• PWM duty cycle



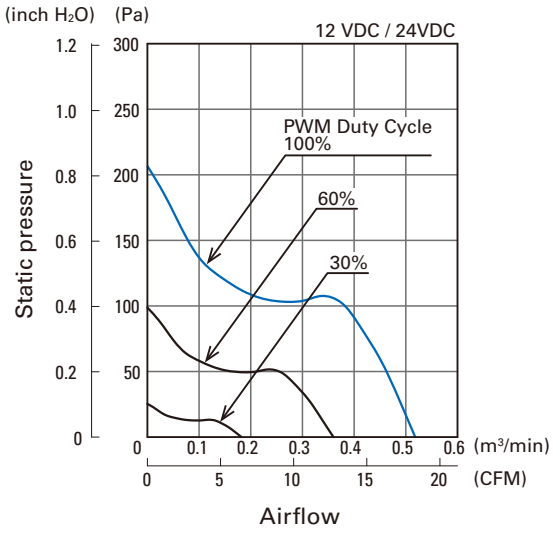
9GT0412P3K003

• Operating voltage range



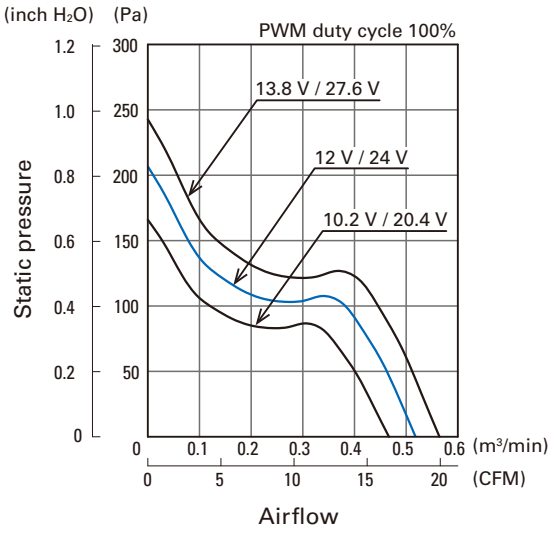
9GT0412P3K003

• PWM duty cycle



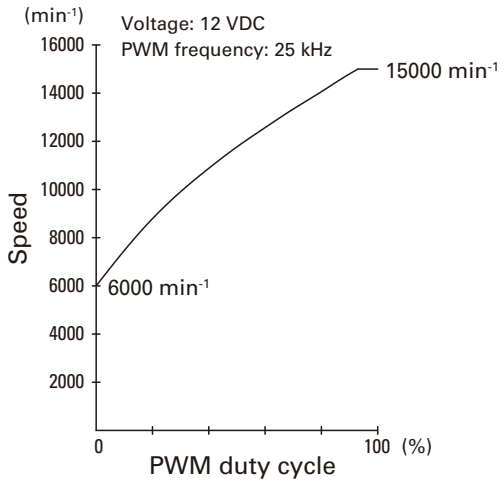
9GT0412P3J001
9GT0424P3J001

• Operating voltage range

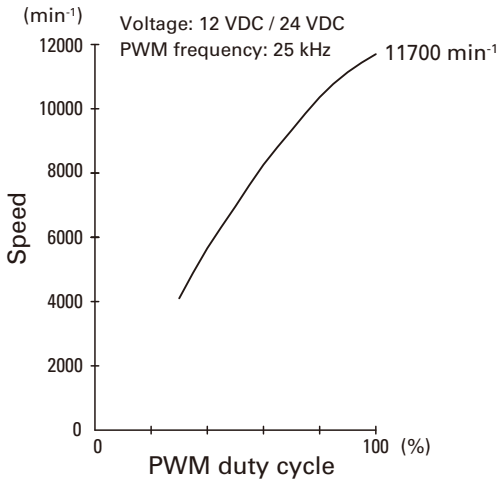


9GT0412P3J001
9GT0424P3J001

PWM Duty - Speed Characteristics Example



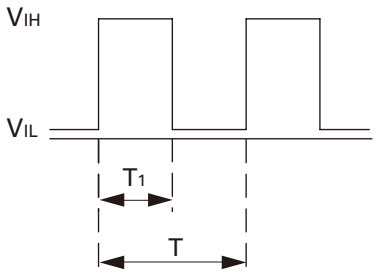
9GT0412P3K003



9GT0412P3J001
9GT0424P3J001

PWM Input Signal Example

Input signal waveform



V_{IH} = 4.75 to 5.25 V

V_{IL} = 0 to 0.4 V

PWM duty cycle (%) = $\frac{T_1}{T} \times 100$

PWM frequency 25 (kHz) = $\frac{1}{T}$

Current source (Isource) = 1 mA max. (when control voltage is 0 V)

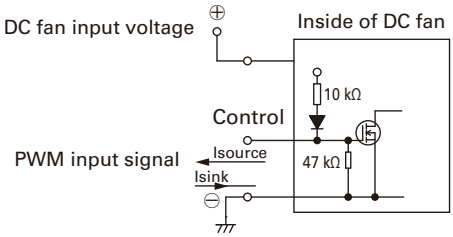
Current sink (Isink) = 1 mA max. (when control voltage is 5.25 V)

Control terminal voltage = 5.25 V max. (when control terminal is open)

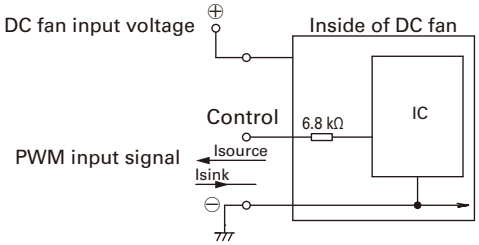
When the control terminal is open,
fan speed is the same as when PWM duty cycle is 100%.
Either TTL input, open collector or open drain can be used for
PWM control input signal.

Example of Connection Schematic

Rated voltage 12 V fan

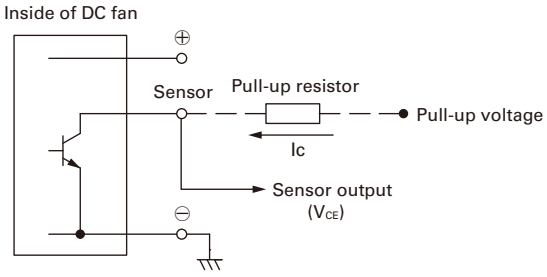


Rated voltage 24 V fan



Specifications for Pulse Sensors

Output circuit: Open collector

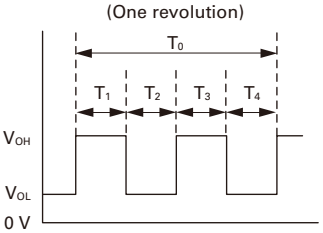


Rated voltage 12 V fan
V_{CE} = +13.8 V max.
Ic = 5 mA max. [V_{OL} = V_{CE} (SAT) = 0.6 V max.]

Rated voltage 24 V fan
V_{CE} = +27.6 V max.
Ic = 5 mA max. [V_{OL} = V_{CE} (SAT) = 0.8 V max.]

Output waveform (Need pull-up resistor)

In case of steady running

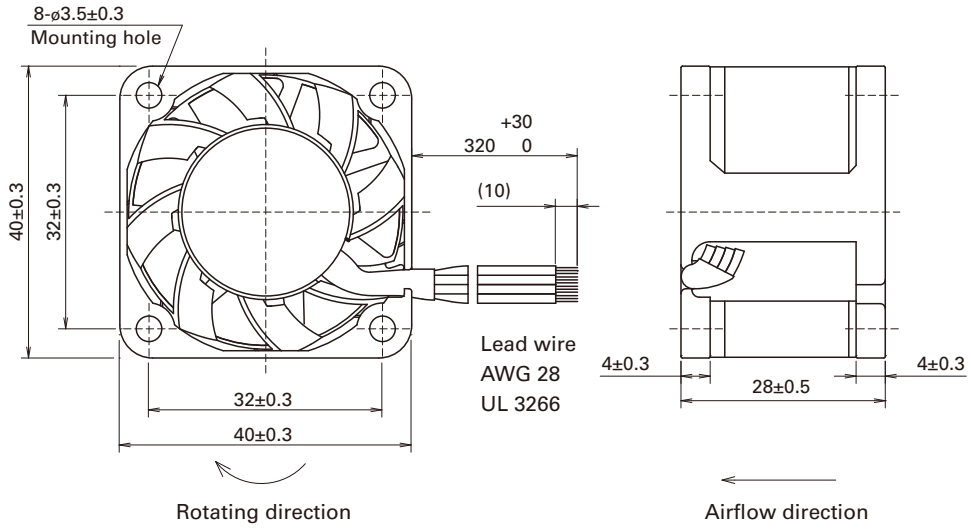


$T_{1\ to\ 4} \fallingdotseq$ (1/4) T_0

$T_{1\ to\ 4} \fallingdotseq$ (1/4) T_0 = 60/4N (s)

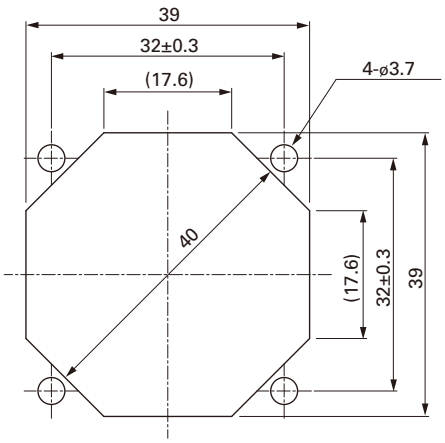
N = Fan speed (min^{-1})

Dimensions (unit: mm)



Reference Dimensions of Mounting Holes and Vent Opening (unit: mm)

Inlet side, Outlet side



Notice

- Please read the "Safety Precautions" on our website before using the product.
- The products shown in this catalog are subject to Japanese Export Control Law. Diversion contrary to the law of exporting country is prohibited.
- For protecting fan bearings against electrolytic corrosion near strong electromagnetic noise sources, we provide effective countermeasures such as Electrolytic Corrosion Proof Fans and EMC guards. Contact us for details.

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