Fans with PWM speed control function

Technical Material Refer to Page 299

There are following part numbers except ones with **With PWM speed control function** marking in the text.

Photo shows 38×38×28mm fan.

■ Available size and example of characteristics

Please inquire our sales department for specifications other than the following.

ClosedLoop ···Closed Loop Control (No mark denotes open loop control.)

Size (mm)	Model No.	Frame material	Voltage [V]	PWM Frequency [kHz]	Current [A]	Rated Speed (min^{-1}) Duty Cycle 0%	Rated Speed (min^{-1}) Duty Cycle 100%	Max. Air Flow [m^3/min]	Max. Air Flow [CFM]	Max. Static Pressure [Pa]	Max. Static Pressure [inchH_2O]	SPL [dB(A)]	Expected Life [h]
36×36×28mm	9GV3612P3J03	Plastics	12	25.0	0.75	3,200	19,000	0.55	19.42	525	2.11	58.5	40,000
	9GV3612P3G03	Plastics	12	25.0	0.34	3,200	14,000	0.4	14.12	275	1.10	52	40,000
38×38×28mm	9GV0312P3J03	Plastics	12	25.0	0.6	3,000	15,900	0.57	20.13	315	1.27	54	40,000
40×40×28mm	109P0412P3J033	Plastics	12	25.0	0.41	0	12,500	0.46	16.24	210	0.84	44	40,000
	109P0412P3G033	Plastics	12	25.0	0.39	0	11,500	0.42	14.83	179	0.72	42	40,000
	9PH0412P3K033	Plastics	12	25.0	0.5	3,200	15,500	0.59	20.83	340	1.37	50	40,000
	9GV0412P3J02	Plastics	12	25.0	0.6	2,650	14,700	0.68	24.01	330	1.33	55	40,000
	9GV0412P3K03	Plastics	12	25.0	0.84	3,000	16,500	0.76	26.8	415	1.67	58	30,000
	9GV0412P3J03	Plastics	12	25.0	0.6	2,650	14,700	0.68	24.01	330	1.33	55	40,000
	9GV0412P3G03	Plastics	12	25.0	0.47	2,400	13,000	0.6	21.19	260	1.04	52	40,000
40×40×56mm	9CRA0412P5J03	Plastics	12	25.0	1.4	Inlet : 2,850 outlet : 2,250	Inlet : 15,800 outlet : 12,200	0.9	31.78	570	2.29	62	40,000
	9CRA0412P5K03	Plastics	12	25.0	1.8	Inlet : 3,050 outlet : 2,300	Inlet : 17,000 outlet : 13,000	0.95	33.5	650	2.61	65	30,000
	9CR0412P5S03	Plastics	12	25.0	0.88	Inlet : 3,300 outlet : 2,000	Inlet : 15,800 outlet : 10,600	0.7	24.72	450	1.81	57.5	40,000
	9CRA0412P5G03	Plastics	12	25.0	1	Inlet : 2,800 outlet : 2,150	Inlet : 14,000 outlet : 10,400	0.77	27.19	435	1.75	59	40,000
60×60×25mm	9AH0612P4G03	Plastics	12	25.0	0.21	1,120	5,600	0.78	27.54	87.3	0.35	39	30,000
	9AH0612P4H05	Plastics	12	25.0	0.11	0	3,800	0.53	18.71	40.2	0.16	28	40,000
60×60×38mm	9G0612P1G03	Plastics	12	25.0	1.54	3,550	11,800	1.84	64.97	435	1.75	58	40,000
	9G0612P1G04 ClosedLoop	Plastics	12	25.0	1.54	0	11,800	1.84	64.97	435	1.75	58	40,000
	9G0612P1M03	Plastics	12	25.0	0.35	1,200	6,000	0.94	33.19	112	0.45	41	40,000
60×60×76mm	9CR0612P0S03	Plastics	12	25.0	3.2	Inlet : 1,300 outlet : 800	Inlet : 11,500 outlet : 7,000	2.26	79.8	550	2.21	66	40,000
	9CR0612P0H03	Plastics	12	25.0	2.7	Inlet : 1,200 outlet : 800	Inlet : 10,300 outlet : 6,500	1.98	69.91	450	1.81	64	40,000
80×80×15mm	9PH0812P7S06	Plastics	12	1.8	0.26	1,000	4,000	1.17	41.31	49.6	0.20	40	40,000
80×80×25mm	9AH0812P4H04	Plastics	12	25.0	0.11	0	2,900	1.03	36.37	35.3	0.14	29	40,000
80×80×38mm	9G0812P1G04	Plastics	12	25.0	1.1	1,200	6,300	2.55	90.04	211	0.85	51	40,000
	9G0812P1H03	Plastics	12	25.0	0.9	1,000	5,700	2.28	80.51	171	0.69	49	40,000
	9G0848P1G03	Plastics	48	25.0	0.27	1,500	6,300	2.55	90.04	211	0.85	51	40,000
80×80×80mm	9CR0848P8S03	Plastics	48	25.0	1.29	Inlet : 2,000 outlet : 1,300	Inlet : 8,000 outlet : 5,300	4.53	159.95	520	2.09	71	40,000
92×92×25mm	9AH0912P4G03	Plastics	12	25.0	0.3	700	3,900	1.76	62.15	66.5	0.27	43	30,000
	9AH0912P4H03	Plastics	12	25.0	0.17	600	3,150	1.45	51.20	44	0.18	33	40,000
92×92×32mm	9G0912P2G03	Plastics	12	25.0	0.88	1,200	5,000	2.84	100.28	146	0.59	50	40,000
	9G0912P2B03	Plastics	12	25.0	0.52	1,200	4,000	2.27	80.15	93.4	0.38	43	40,000
92×92×38mm	9G0912P1G03	Plastics	12	25.0	1.1	1,000	5,000	3.1	109.46	150	0.60	50	40,000
120×120×25mm	9G1212P4G03	Plastics	12	25.0	0.9	1,000	4,100	3.68	129.94	120	0.48	51	40,000
	9G1212P4G031	Plastics	12	25.0	0.9	1,000	4,100	3.68	129.94	120	0.48	51	40,000
120×120×38mm	9SG1212P1G01	Aluminum	12	16.0	4	3,900 (Duty cycle 50%)	6,000	7.35	259.53	340	1.37	64	40,000
	9SG1224P1G01	Aluminum	24	16.0	2	3,600 (Duty cycle 50%)	6,000	7.35	259.53	340	1.37	64	40,000
	9SG1248P1G01	Aluminum	48	16.0	1	3,600 (Duty cycle 50%)	6,000	7.35	259.53	340	1.37	64	40,000
150×150×50mm	9GV1512P5M03	Plastics	12	25.0	1.2	650	3,000	6.35	224.22	132	0.53	53	40,000
φ 172mm×51mm thick Side Cut Type	109E5712P5K04 ClosedLoop	Aluminum	12	25.0	3.2	0	4,100	8.5	300.14	243	0.98	60	40,000
B97mm×33mm	9BAM12P2G09	Plastics	12	25.0	2.7	2,800	6,000	1.4	49.43	835	3.35	64	40,000

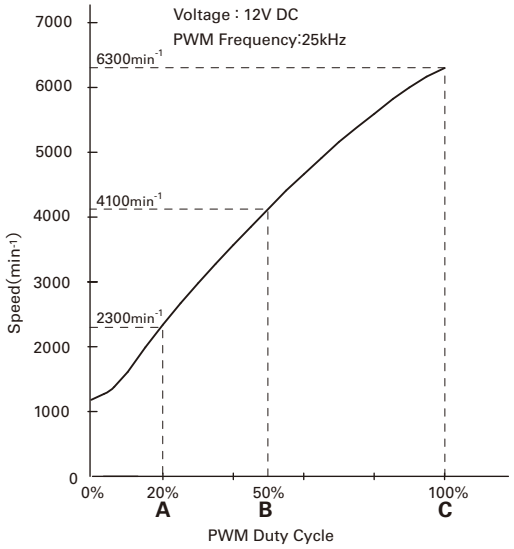
・Rated current, maximum air flow, maximum static pressure, and sound pressure level are the values given when duty cycle 100%.
・Storage temperature is -30˚C to +70˚C. For operating temperature range, see individual specification sheet.
・Switching with the PWM control may affect the sensor output. ・Specifications may be changed without notice.

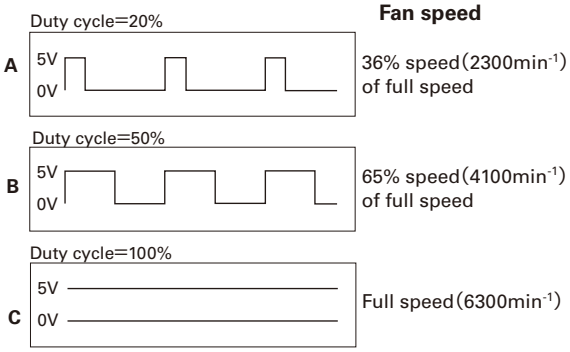
PWM Speed Control Function

The PWM speed control function is a function that externally controls the rotation speed of the fan by changing the duty of the input pulse signal between the control terminal and GND.
It regulates optimum airflow for efficient cooling when necessary, and is effective for lowering power consumption and reducing equipment noise level.
* Some models can not have PWM speed control function. Contact us for more information.

● Typical standard model: 9GV0812P4K03

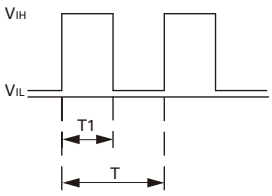
PWM Duty - Speed Characteristics





PWM Input Signal

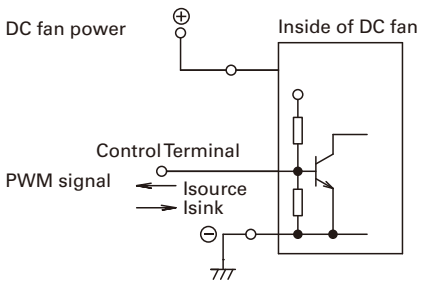
Input Signal Wave Form



V_{IH} = 4.75V to 5.25V
V_{IL} = 0V to 0.4V
PWM Duty Cycle(%) = $\frac{T1}{T} \times 100$
PWM Frequency 25 (kHz) = $\frac{1}{T}$

Source Current (I source) : 1mA Max. at control voltage 0V
Sink Current (I sink) : 1mA Max. at control voltage 5.25V
Control Terminal Voltage : 5.25V Max. (When control terminal is opened)
When the control lead wire is open, speed is same as one at 100% PWM duty cycle.
This fan speed should be controlled by PWM input signal of either TTL input or open collector, drain input.

Example of Connection Schematic



Source Current (I source) : 1mA Max. at control voltage 0V
Sink Current (I sink) : 1mA Max. at control voltage 5.25V
Control Terminal Voltage : 5.25V Max. (When control terminal is opened)