IP68 Protected DC Fan with PWM and Tach Output
08025VE-12P (D-Type)

NMB

General Specifications

Motor Type:
DC Brushless Motor
Motor Protection:
Auto Restart / Polarity Protection (Motor withstands reverse connection for positive and negative leads.)
Insulation Resistance:
10MΩ or over with a DC 500V Megger
Dielectric Withstand Voltage:
AC 500V 1min or AC 700V 1sec
Allowable Ambient Temperature Range:
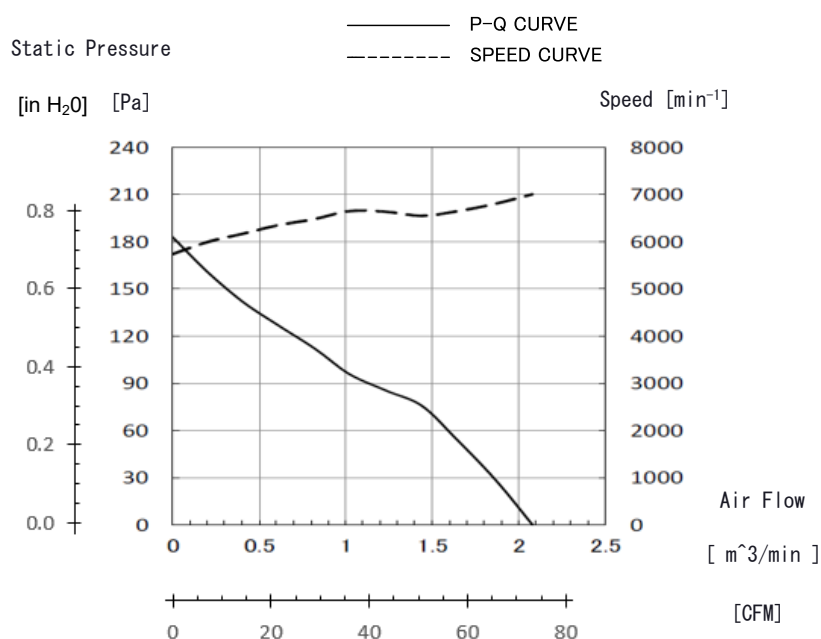
-10˚C ~ + 60˚C (Operating)
-40˚C ~ + 70˚C (Storage)
(non-condensing environment)

For reference only. Please see fan outline for details

Characteristic Curves

Static Pressure

——————— P–Q CURVE
- - - - - - - - SPEED CURVE

[in H$_2$0] [Pa]   Speed [min^{-1}]

Air Flow
[m^3/min]
[CFM]

Features

- DC axial fan with outstanding P-Q performance, IP68 protection, PWM speed control, and tach output
- Vertically integrated manufacturing, with key components made in-house
- IP68 with highest level of protection from water/dust ingress
- Outfitted with NMB precision machined stainless steel ball bearings for long life
- Ideal for applications such as EV chargers, PV inverters, telecom cabinets, small cell 5G network and many other outdoor applications

Life Expectancy L10

40,000 Hours at 60 Celsius

*Fan life expectation is based on free air operation at 60°C, rated voltage, and indoor benign lab environment*

*1: Values in Free Air

Specifications

| MODEL	Rating Voltage	Operating Voltage	Current		Input Power		Speed	Max. Air Flow		Max. Static Pressure		Noise	Mass
			Avg	Max	Avg	Max							
	(V)	(V)	(A)*1	(A)*1	(W)*1	(W)*1	(min^{-1})*1	(CFM)	(m³/min)	(in H$_2$O)	(Pa)	(dB)*1	(g)
08025VE-12P-CUD-6	12	7.0 to 13.8	0.57	0.68	6.84	8.16	7,000	73.1	2.07	0.76	189.6	53	120

PWM Specifications

Connection
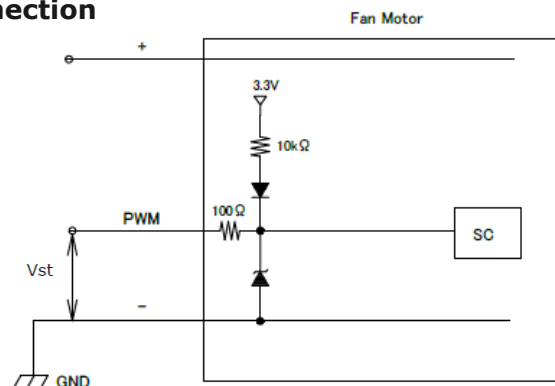
1. PWM Control
   Vst = Low Level (0V~0.4V) → Stop (On Duty 0%)
   Vst = High Level (4.0V~5.0V) → Full Speed (On Duty 100%)
   Vst = Open → Full Speed

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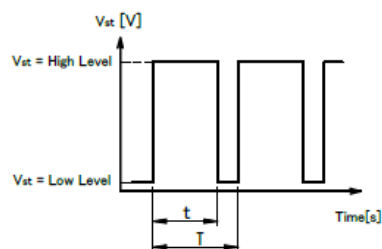
PWM Duty means that a ratio of high level time (t)/PWM Input Pulse(T).

(t/T) × 100 : On Duty 0%~100%

PWM Frequency f = 25[kHz]

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

· Please use the start with Duty 20% or more at 25kHz.[At rated voltage input, Ambient temperature 25℃]
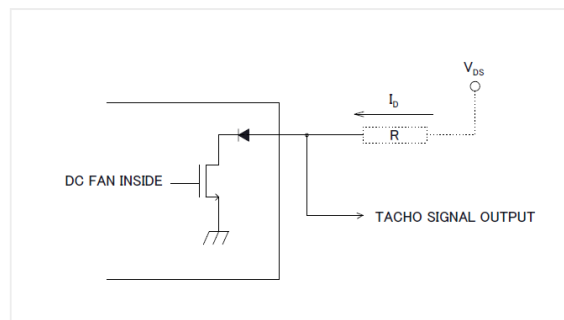
PWM Characteristic Curve

Reference PWM Duty VS Speed
Conditions : at Rating Voltage, Vst=5.0V, f=25kHz, Ta=25°C
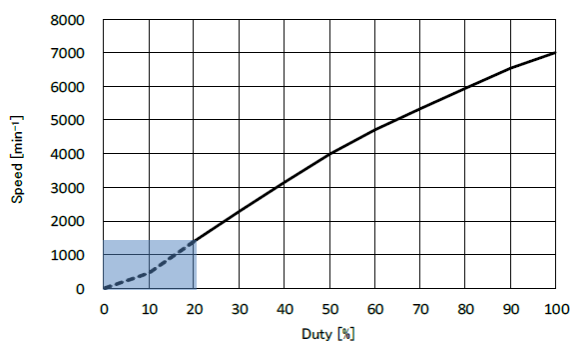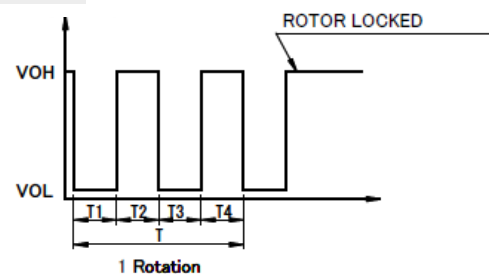

TACHO Specifications

Tachometer Signal
1. Output Circuit: Open Drain
2. Specification
   Absolute Maximum Ratings at Ta=25°C
   V_{DS}max: +15V
   $I_D$max: 5mA[V_{DS}(sat)max=1.5V]

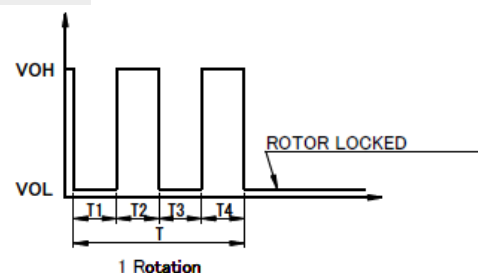

3. Output Waveform: At Rated Voltage
   Output Signal Voltage

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: Fan Speed (min⁻¹)
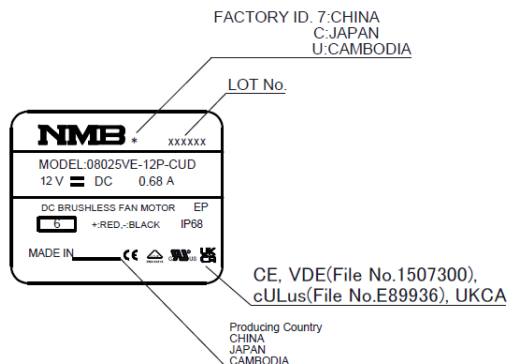
   Tacho Duty Cycle=50%±10%

Outlines

（Name Plate）

FACTORY ID. 7:CHINA
C:JAPAN
U:CAMBODIA

LOT No.

NMB * XXXXXX
MODEL:08025VE-12P-CUD
12 V ⎓ DC   0.68 A
DC BRUSHLESS FAN MOTOR   EP
b   +:RED,-:BLACK   IP68
MADE IN

CE, VDE(File No.1507300),
cULus(File No.E89936), UKCA

Producing Country
CHINA
JAPAN
CAMBODIA

Materials

Casing: Plastic (Black UL 94V-0)
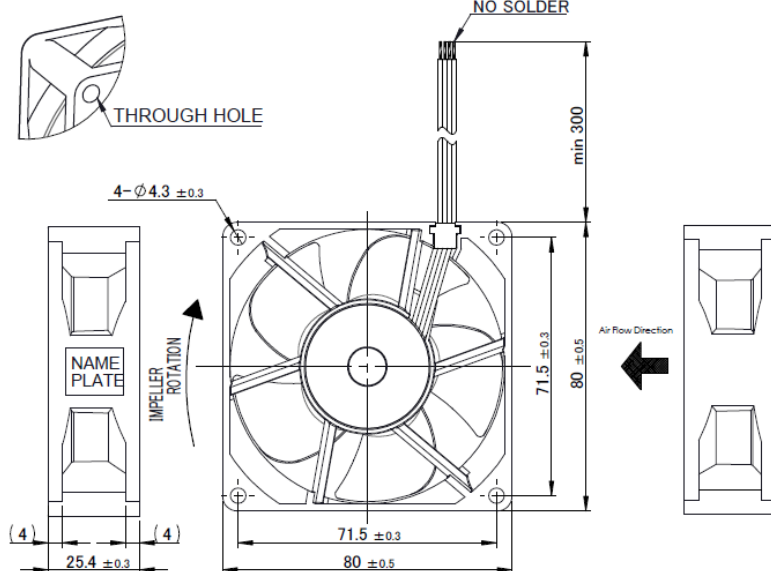**Impeller:** Plastic (Black UL 94V-0)
Bearing: Stainless Steel Ball Bearing
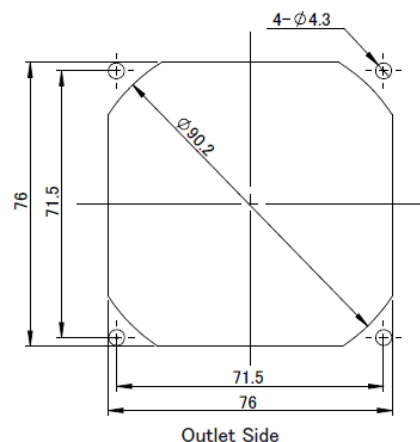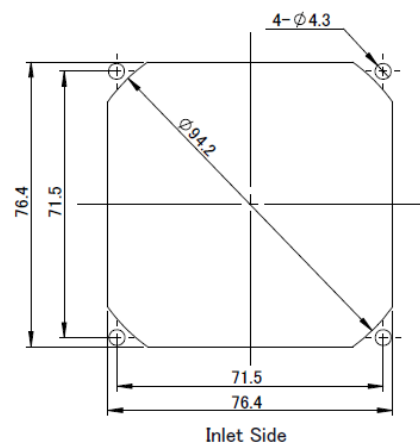**Lead Wire:** UL10368 AWG24 or
UL3443 AWG24 for

Red (+)
Black (-)
White (Tach)
Brown (PWM)

（Outline）

RIB TYPE

NO SOLDER

THROUGH HOLE

min 300

4-Φ4.3 ±0.3

NAME PLATE

IMPELLER ROTATION

Air Flow Direction

71.5 ±0.3

80 ±0.5

(4)   (4)
25.4 ±0.3

71.5 ±0.3
80 ±0.5

（Panel Out-line）

4-Φ4.3

Φ94.2

76.4
71.5

71.5
76.4

Inlet Side

4-Φ4.3

Φ90.2

76
71.5

71.5
76

Outlet Side

Mouser Electronics

Authorized Distributor

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[08025VE-12P-CUD-6](#)