

11925SA (4710SB)

DC Axial Fan Ball Bearing

119[□]X25^L

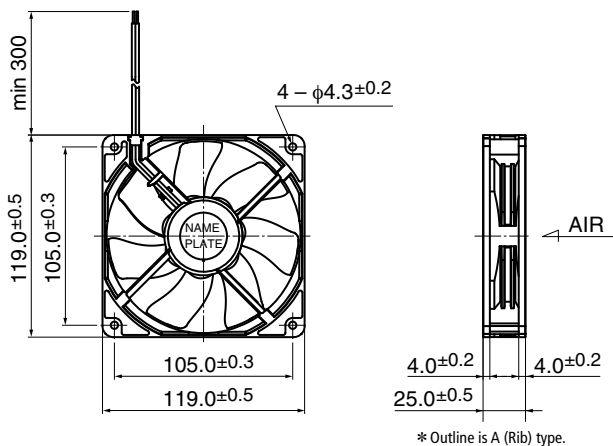


General Specifications

Motor Protection : Auto Restart / Polarity Protection
 Insulation Resistance : 10MΩ or over with a DC500V Megger
 Dielectric Withstand Voltage : AC700V 1s

Allowable Ambient Temperature Range : L, M, N Class : - 10℃ ~ + 70℃ (Operating)
 R Class : -10℃ ~ + 60℃
 (non-condensing environment) **All Classes : - 40℃ ~ +70℃ (Storage)**

Outline

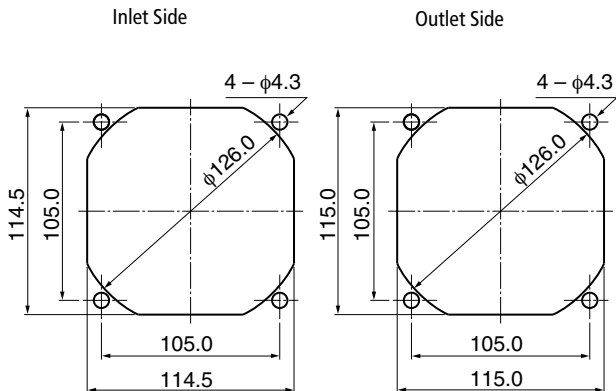


Expected Life

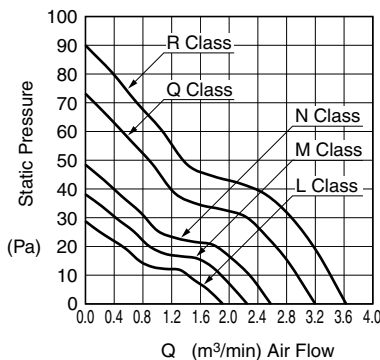
※ Failure Rate: 10% (L10 Life)

60℃ 40,000 (Hours)

Panel Out-cuts



Characteristic Curves



Material

Casing : Plastic (Black) UL94V-0
 Impeller : Plastic (Black) UL94V-0
 Bearing : Ball Bearing
 Lead Wire : UL3385 AWG26 + : Red, - : Black

Specifications

**Flange casing is available

Model**	Product Number	Rating Voltage (V)	Operating Voltage (V)	Current (A)*1	Input Power (W)*1	Speed (min-1)*1	Max Air Flow (m³/min)*1 (CFM)*1	Max Static Pressure (Pa) (In H2O)*1	Noise (dB)*1	Mass (g)
11925SA-12L-AAD-	0	12	7.0 ~ 13.8	0.13	1.56	1900	1.90 67.1	28.5 0.11	30.0	165
11925SA-12M-AAD-	0	12	7.0 ~ 13.8	0.16	1.92	2200	2.25 79.4	38.0 0.15	33.5	
11925SA-12N-AAD-	0	12	7.0 ~ 13.8	0.24	2.88	2500	2.58 91.1	48.0 0.19	37.0	
11925SA-12R-AAD-	0	12	7.0 ~ 13.8	0.62	7.44	3500	3.63 128.2	89.0 0.36	47.0	
11925SA-24L-AAD-	0	24	12.0 ~ 27.6	0.06	1.44	1900	1.90 67.1	28.5 0.11	30.0	
11925SA-24M-AAD-	0	24	12.0 ~ 27.6	0.08	1.92	2200	2.25 79.4	38.0 0.15	33.5	
11925SA-24N-AAD-	0	24	12.0 ~ 27.6	0.11	2.64	2500	2.58 91.1	48.0 0.19	37.0	
11925SA-24P-AAD-	0	24	12.0 ~ 27.6	0.17	4.08	2800	2.89 102.1	60.5 0.24	40.5	
11925SA-24Q-AAD-	0	24	12.0 ~ 27.6	0.20	4.80	3100	3.20 113.0	73.0 0.29	44.0	

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

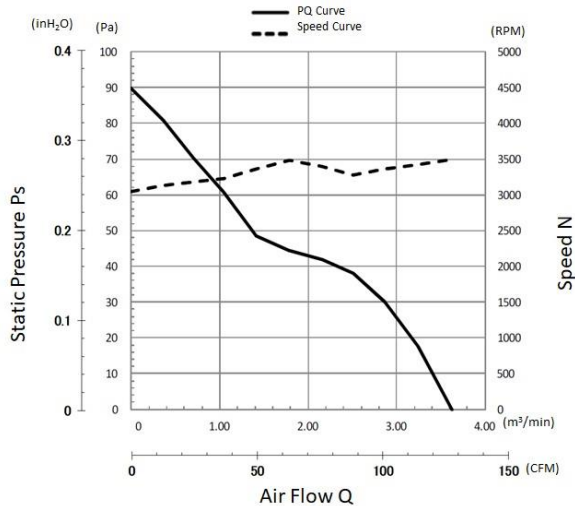
Allowable Ambient Temperature Range:

-10°C ~ +60°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

60°C 40,000 Hours

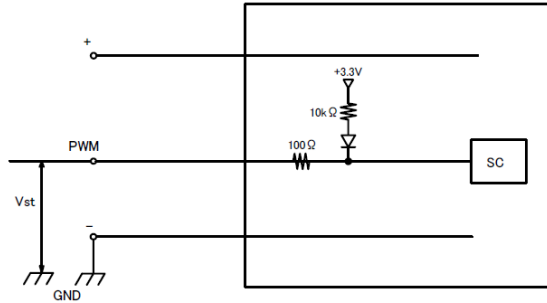
Specifications

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)	(inH ₂ O)	(Pa)	(dB) ^{*1}	(g)
	(V)	(V)	(A) ^{*1}	(A) ^{*1}	(W) ^{*1}	(W) ^{*1}	(min ⁻¹) ^{*1}	(CFM)	(m³/min)	(inH ₂ O)	(Pa)	(dB) ^{*1}	(g)
11925SA-12R-EUD-1	12	7.0~13.2	0.62	0.86	7.44	10.32	3500	128.2	3.63	0.36	89	47.0	165

*1: Values in Free Air

PWM Specifications

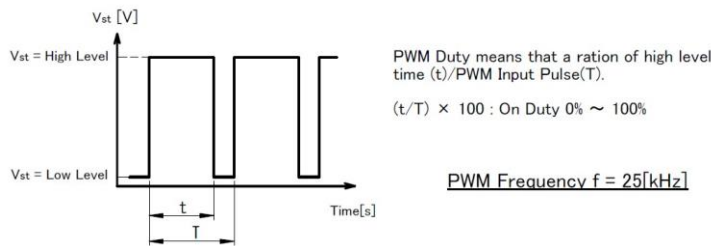
● CONNECTION



1. PWM Control

- $V_{st} = \text{Low Level (0V} \sim 0.4\text{V)}$ → Stop (On Duty 0%)
- $V_{st} = \text{High Level (4.0V} \sim 5.0\text{V)}$ → Full Speed (On Duty 100%)
- $V_{st} = \text{Open}$ → Full Speed

2. PWM Duty & PWM Input Pulse



TACHO Specifications

TACHOMETER SIGNAL

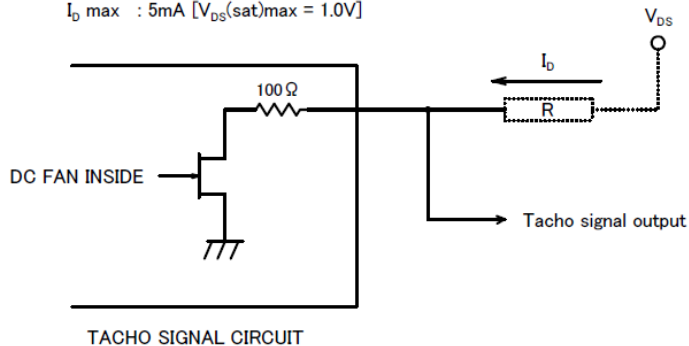
- OUTPUT CIRCUIT : OPEN DRAIN
- SPECIFICATION

$T_a = 25^\circ\text{C}$

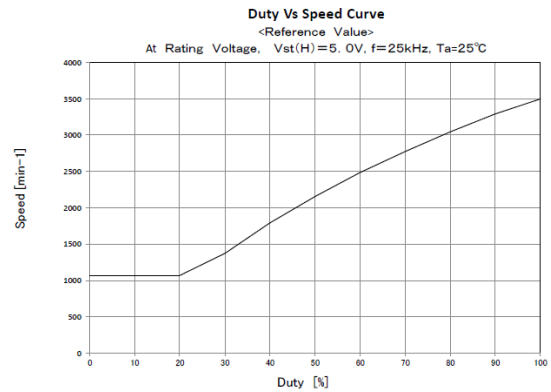
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

$V_{DS} \text{ max} : +15\text{V}$

$I_D \text{ max} : 5\text{mA}$ [$V_{DS}(\text{sat}) \text{ max} = 1.0\text{V}$]



PWM Characteristics Curve



3. The condition for PWM control are as follows.

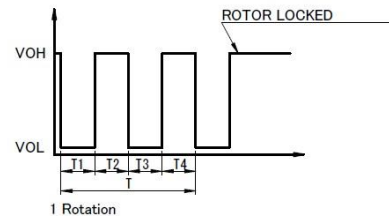
- When you use this under PWM control, always be sure the motor's operation under practical mounting state. Fan motor may not start up caused by PWM control at very low speed condition.

- To run at Rating Voltage.

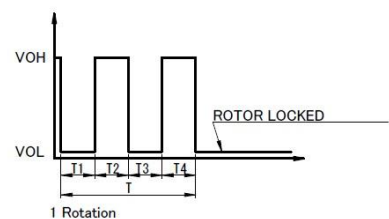
3. OUTPUT WAVEFORM : AT RATED VOLTAGE

4. OUTPUT SIGNAL VOLTAGE

3-1 Case-1



3-2 Case-2

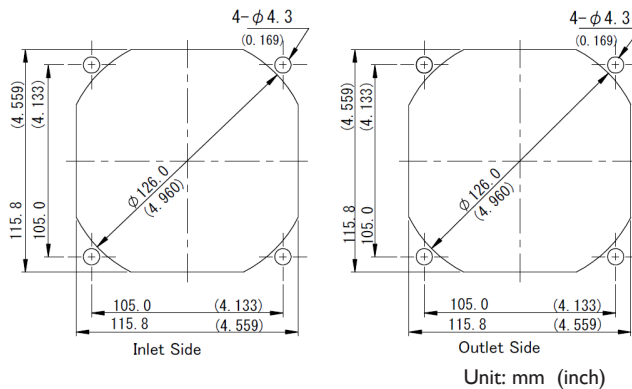


- When the rotor is locked at VOH position of signal, signal keeps VOH position.
- When the rotor is locked at VOL position of signal, signal keeps VOL position.
- $T = T1 + T2 + T3 + T4 = 60^\circ / m = 1 \text{ rotation}$

$m : \text{min} - 1$

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

Panel Cut-Outs



Materials

Casing : Plastic (Black UL94V-0)

Impeller : Plastic (Black UL94V-0)

Bearing : Ball Bearing

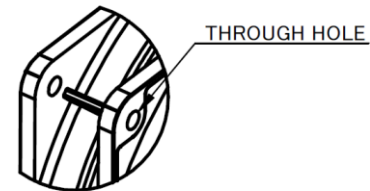
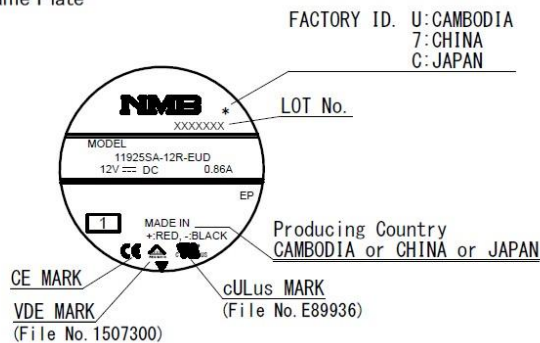
Lead Wire : UL3385 AWG26

(+) : Red (-) : Black

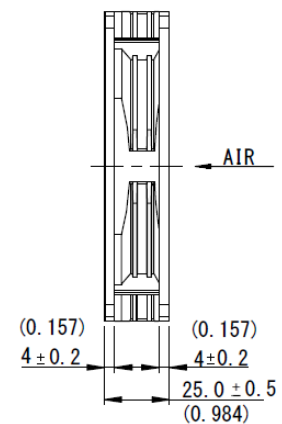
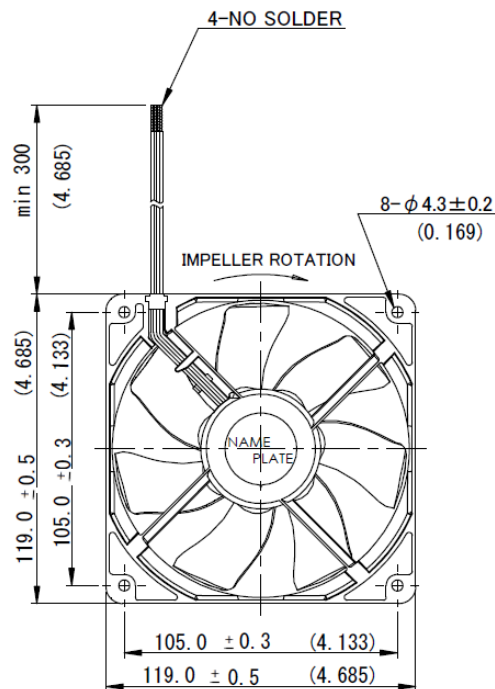
PWM : Brown Tach : White

Outline

Name Plate



FLANGE TYPE



Unit: mm (inch)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

NMB Technologies:

<u>11925SA-12J-AA-00</u>	<u>11925SA-12R-AT-D0</u>	<u>11925SA-12L-AL-D0</u>	<u>11925SA-12L-AT-D0</u>	<u>11925SA-12L-EL-D0</u>
<u>11925SA-12L-ET-D0</u>	<u>11925SA-12M-EA-D0</u>	<u>11925SA-12M-ET-D0</u>	<u>11925SA-12N-AT-D0</u>	<u>11925SA-12N-EA-D0</u>
<u>11925SA-12N-ET-D0</u>	<u>11925SA-24L-EA-D0</u>	<u>11925SA-24L-ET-D0</u>	<u>11925SA-24M-AL-D0</u>	<u>11925SA-24M-AT-D0</u>
<u>11925SA-24M-EA-D0</u>	<u>11925SA-24M-ET-D0</u>	<u>11925SA-24P-AT-D0</u>	<u>11925SA-24Q-AT-D0</u>	<u>11925SA-12L-AA-D0</u>
<u>11925SA-12M-AA-D0</u>	<u>11925SA-12N-AA-D0</u>	<u>11925SA-24L-AA-D0</u>	<u>11925SA-24M-AA-D0</u>	<u>11925SA-24N-AA-D0</u>
<u>11925SA-24N-EA-D0</u>	<u>11925SA-24P-AA-D0</u>	<u>11925SA-24Q-AA-D0</u>	<u>11925SA-24Q-EA-D0</u>	<u>11925SA-12L-EA-D0</u>
<u>11925SA-24N-AL-D0</u>	<u>11925SA-12Q-ET-D0</u>	<u>11925SA-24M-EL-D0</u>	<u>11925SA-24Q-EL-D0</u>	<u>11925SA-24Q-ET-D0</u>
<u>11925SA-12N-EL-D0</u>	<u>11925SA-24N-EL-D0</u>	<u>11925SA-24N-ET-D0</u>	<u>11925SA-24P-EA-D0</u>	<u>11925SA-12P-AT-D0</u>
<u>11925SA-12Q-AT-D0</u>	<u>11925SA-12Q-EA-D0</u>	<u>11925SA-12P-EA-D0</u>	<u>11925SA-12M-EL-D0</u>	<u>11925SA-24L-EL-D0</u>
<u>11925SA-12P-ET-D0</u>	<u>11925SA-12J-EA-D0</u>	<u>11925SA-12Q-AA-D0</u>	<u>11925SA-24P-EL-D0</u>	<u>11925SA-12P-EL-D0</u>
<u>11925SA-12N-AL-D0</u>	<u>11925SA-12M-AL-D0</u>	<u>11925SA-24P-ET-D0</u>	<u>11925SA-24P-AL-D0</u>	<u>11925SA-12P-AA-D0</u>
<u>11925SA-12Q-AL-D0</u>	<u>11925SA-12P-AL-D0</u>	<u>11925SA-12Q-EL-D0</u>	<u>11925SA-24L-AL-D0</u>	<u>11925SA-24Q-AL-D0</u>
<u>11925SA-12R-EA-D0</u>	<u>11925SA-12J-EL-D0</u>	<u>11925SA-12K-AA-D0</u>	<u>11925SA-24K-AA-D0</u>	<u>11925SA-12R-ALD-0</u>
<u>11925SA-12K-ELD-0</u>	<u>11925SA-24K-ETD-0</u>	<u>11925SA-24J-AA-D0</u>	<u>11925SA-12J-ETD-0</u>	<u>11925SA-12K-ETD-0</u>
<u>11925SA-24J-ETD-0</u>	<u>11925SA-24R-AA-D0</u>	<u>11925SA-24K-EAD-0</u>	<u>11925SA-12J-AA-D0</u>	<u>11925SA-24R-EA-D0</u>
<u>11925SA-24J-ELD-0</u>	<u>11925SA-24R-ATD-0</u>	<u>11925SA-24K-ELD-0</u>	<u>11925SA-24J-EAD-0</u>	<u>11925SA-12R-AA-D0</u>
<u>11925SA-24R-ALD-0</u>	<u>11925SA-12K-EA-D0</u>			