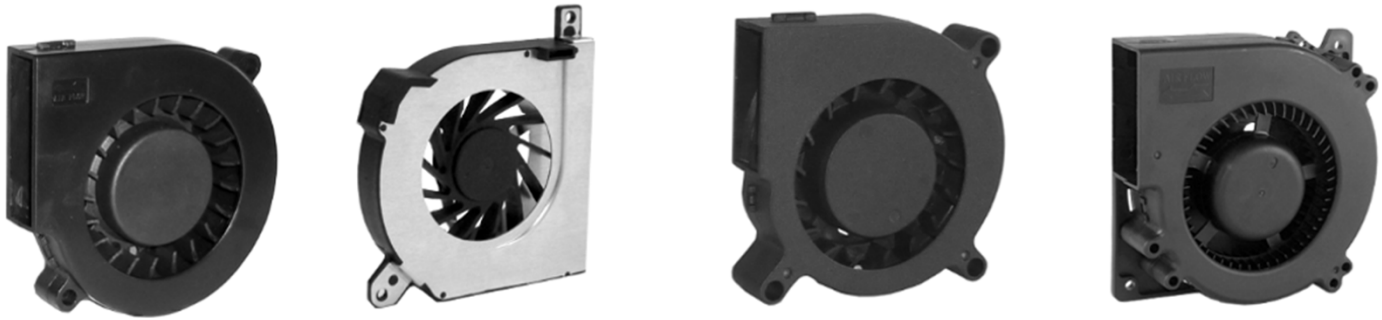


DC Blowers



Wakefield Thermal produces unique powerful DC blowers that are perfect for cooling applications. The DC blower range in size from 40x40mm to 120x120mm with the most common sizes in between. The standard configurations include 2 wire, 3 wire (tach) or 4 wire (PWM) and can be customized to support any range of connectors.





The DC blower design provides exceptional balancing characteristics and low power consumption. Our DC blowers are designed to output high pressure so that they can be applied into high impedance systems. Our DC blowers are used in industries such as Medical, Telecommunications, Automotive, Network servers, etc.

Options:

- IP-55 water protection rating
- Pulse width modulation control (PWM)
- Frequency generator output (FG signal/tach)
- Custom sizes and performances

Features & Benefits:

- Sizes include:
 - Thickness range 14 - 33 MM
 - Various Footprints
 - Custom sizes available Upon Request
- Operating temperature- -10°C to +70°C
- Long life - Rated L10 – 70000 hrs @ 40C
- Dual Ball Bearing
- Optimized blade design
- Ultra-quiet (as low as 24db)

Quick Reference Guide

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0402012	40x40x20	DC BLOWER 40x40x20MM	12	1.6 - 3.0	0.13 - 0.56	27 - 45	0.96 - 2.16	3,500 - 6,500
DB0511512	51x51x15	DC BLOWER 51x51x15MM	12	2.5 - 5.3	0.28 - 1.15	27 - 48.5	0.72 - 1.80	3,500 - 7,500
DB0551212	55x62x12	DC BLOWER 55x62x12MM	12	3.5 - 5.1	0.33 - 0.56	27 - 33	1.92 - 3.96	3,500 - 4,900
DB0601512	60x60x15	DC BLOWER 60x60x15MM	12	2.4 - 4.6	0.28 - 0.89	27 - 45	0.84 - 1.56	3,500 - 6,500
DB0602512	60x60x25	DC BLOWER 60x60x25MM	12	5.6 - 12.8	0.21 - 1.13	24 - 47	1.20 - 6.00	2,500 - 5,500
DB0751512	75x77x15	DC BLOWER 75x77x15MM	12	7.4 - 11.9	0.24 - 0.81	43 - 51	2.52 - 6.00	4,000 - 5,500
DB0753012	75x76x30	DC BLOWER 75x76x30MM	12	10.9 - 21.4	0.31 - 0.62	32 - 51	2.88 - 5.40	2,600 - 4,000
DB0973312	97x94x33	DC BLOWER 97x94x33MM	12	24.2 - 45.6	0.75 - 2.90	48 - 63	4.56 -22.80	2,700 - 5,000
DB1203212	120x120x32	DC BLOWER 120x120x32MM	12	24.6 - 37.5	0.56 - 1.29	45 - 52	4.80 - 15.00	2,100 - 3,100

Selection Guide

General Blower Specifications

Operation Temperature:

-10C to +70C (+14F to +158F)

Storage Temperature:

-40C to +70C (-40F to +158F)

Bearing System Life:

Dual Ball Bearing: L10 - 70000 hrs @ 40C

Materials:

FRAME & IMPELLER : PBT (UL94V0)

Lead Wires:

Rating: UL1007 or UL1571, 80C

AWG: 24 or 26 or 28

Wire Length: 300mm +/- 10mm

2 Wire Standard: Red(+), Black(-),

3 Wire Optional: Red(+), Black(-), Yellow(Tach/FG)

4 Wire Optional: Red(+), Black(-), Yellow(Tach/FG), Blue (PWM)

Insulation Resistance:

Standard: 10M Ω at 500VDC Minimum(frame to leads)

Dielectric Strength

Standard: 500VAC(50/60Hz) for 60 seconds with 1mA trip current allowable between frame and leads

Noise Data:

All noise readings are taken in dBA at 1meter from air intake side, fan suspended in a semi-anechoic chamber (<24 dBA max)

Protection:

Locked Rotor (Meets UL standard 72 hr test)

Reversed Polarity

Shock and Vibration:

Shock: Meets 100G at 2ms, half sine, X, Y, and Z axis

Vibration: Meets the amplitude of vibration :0.38mm

Frequency: 5-55 Hz

Duration: 60min / axis

Direction: X.Y.Z axis

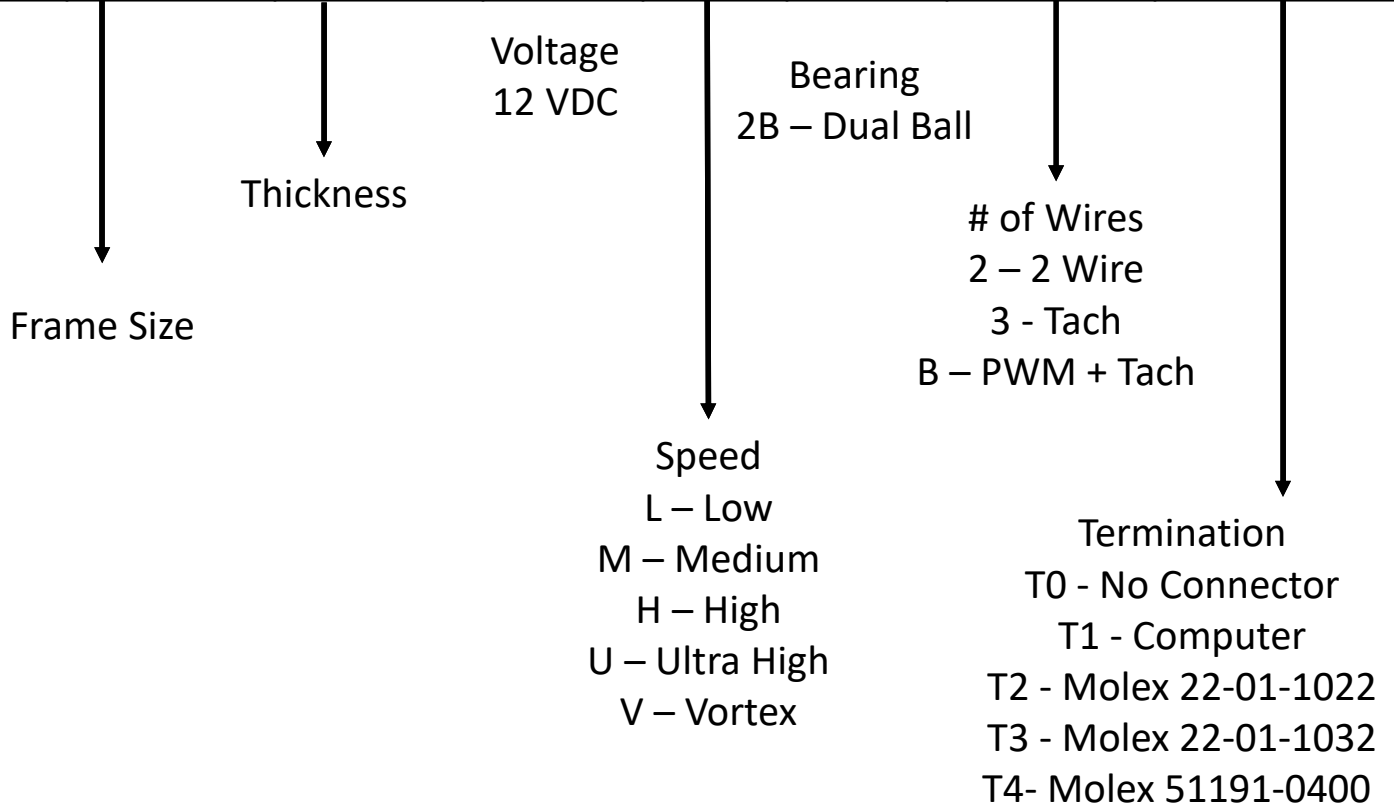


Part Numbering Guide



Example: DB0511512H2B-2Tx

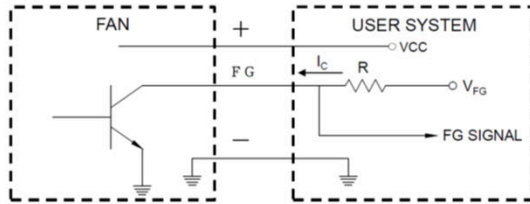
Series	Frame Size(mm)	Thickness(mm)	Voltage	Speed	Bearing	# of Wires	Termination
DB	51	15	12	H	2B	2	Tx



Optional Configuration

- 3 – Tach

FREQUENCY GENERATOR (FG) SIGNAL SCHEMATIC

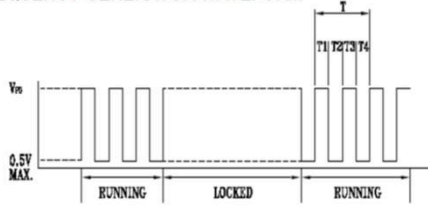


CAUTION:
THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH THE LEAD WIRE OF POSITIVE OR NEGATIVE

SIGNAL SPECIFICATION:

- OUTPUT TYPE: OPEN COLLECT
- V_{FG} MAXIMUM VOLTAGE=13.2V
- I_C MAXIMUM CURRENT= 5mA
- LOW LEVEL VOLTAGE= 0.5V MAX
- $R \geq V_{FG} / I_C$

FREQUENCY GENERATOR WAVEFORM



$T = T1 + T2 + T3 + T4 = 60/N(\text{Sec})$ N: SPEED (RPM)

- B – PWM + Tach

PWM CONTROL

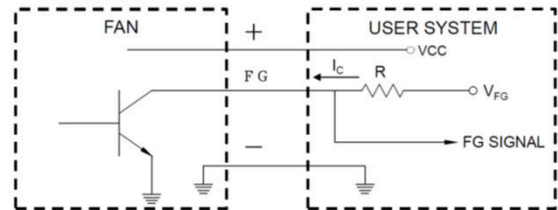
SIGNAL DESCRIPTION

- CONTROL SIGNAL: PWM CONTROL
- SIGNAL TYPE:
INPUT HIGH LEVEL VOLTAGE: MIN. >2.6V , MAX. <5V
INPUT LOW LEVEL VOLTAGE: MAX. <0.5V
- PWM FREQUENCY RANGE: 20K~100KHZ
- MAX. SINK CURRENT: 8mA

FAN SPEED CONTROL

- INPUT VOLTAGE: 5 VDC
- PWM FREQUENCY : 25 KHZ
- THE FAN SPEED SHOULD RUN AT FULL SPEED GIVEN PWM 100% DUTY CYCLE INPUT.
- THE FAN SPEED SHOULD RUN AT ZERO SPEED GIVEN BELOW PWM 0 % DUTY CYCLE INPUT.
- THE FAN WILL GO TO FULL SPEED WHEN IF THE CONTROL SIGNAL IS DISCONNECTED.

FREQUENCY GENERATOR (FG) SIGNAL SCHEMATIC

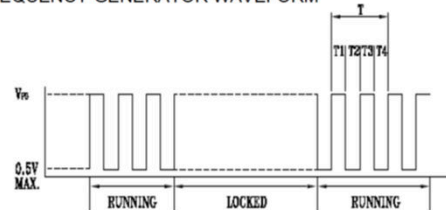


CAUTION:
THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH THE LEAD WIRE OF POSITIVE OR NEGATIVE

SIGNAL SPECIFICATION:

- OUTPUT TYPE: OPEN COLLECT
- V_{FG} MAXIMUM VOLTAGE=13.2V
- I_C MAXIMUM CURRENT= 5mA
- LOW LEVEL VOLTAGE= 0.5V MAX
- $R \geq V_{FG} / I_C$

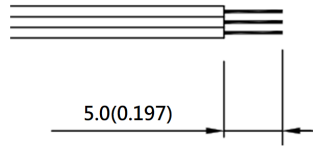
FREQUENCY GENERATOR WAVEFORM



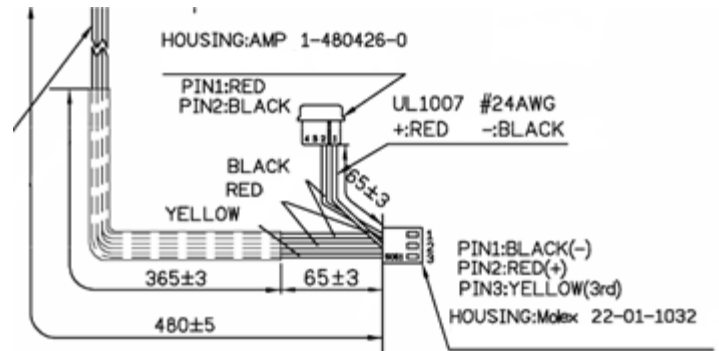
$T = T1 + T2 + T3 + T4 = 60/N(\text{Sec})$ N: SPEED (RPM)

Termination Information

- T0 – 5mm +/-2mm strip length, tinned



- T1 – Computer connector
 - Molex 22-01-1032)
 - Pin1 – Negative
 - Pin2 – Positive
 - Pin3 –Tachometer
 - AMP 1-480426-0
 - Pin1 – Positive
 - Pin2 – Negative



- T2 – Molex 22-01-1022
 - Pin1 – Positive
 - Pin2 – Negative
- T3 – Molex 22-01-1032
 - Pin1 – Positive
 - Pin2 – Negative
 - Pin3 – Tachometer
- T4 – Molex 51191-0400
 - Pin1 – Positive
 - Pin2 – Negative
 - Pin3 – Tachometer
 - Pin4 -- PWM

Typical Ordering Configurations

- 2T0 (2 wire, no connector)
- 2T2 (2 wire, 2 pin connector)
- 3T0 (3 wire, no connector)
- 3T1 (3 wire, computer connector)
- 3T3 (3 wire, 3 pin connector)
- BT0 (4 wire, no connector)
- BT4 (4 wire, 4 pin connector)

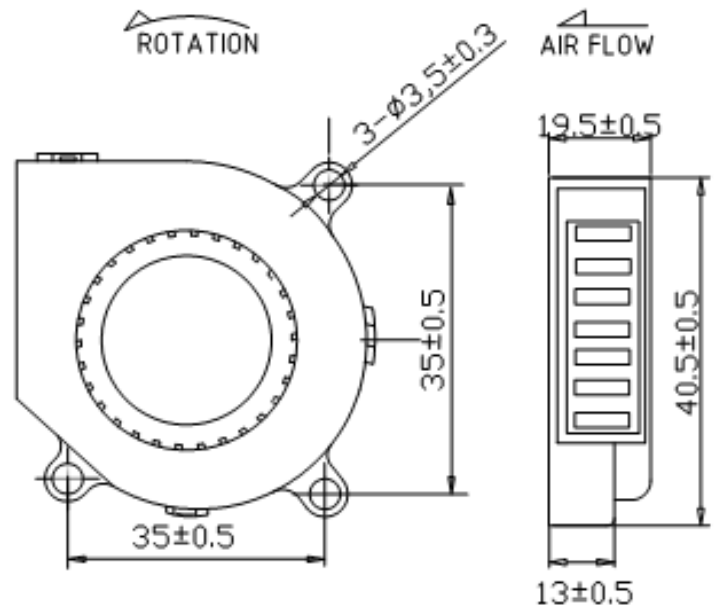
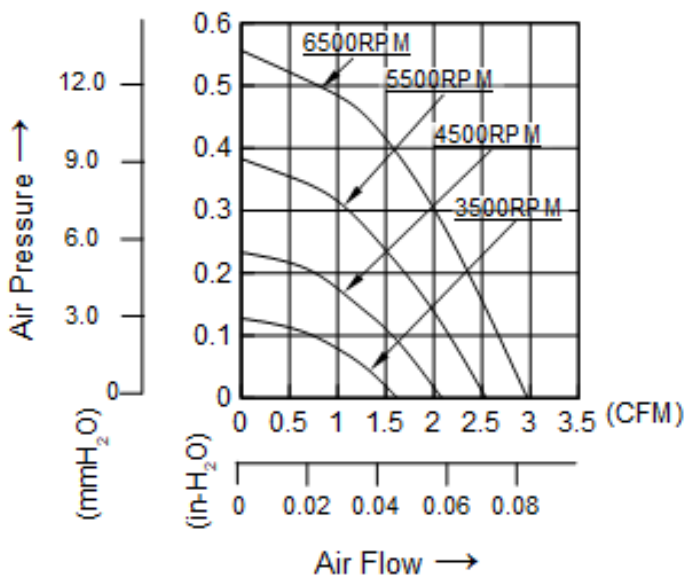
DB0402012

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0402012L2B	40x40x20	DC BLOWER 40x40x20MM 12V 1.6CFM	12	1.6	0.13	27	0.96	3500
DB0402012M2B	40x40x20	DC BLOWER 40x40x20MM 12V 2.1CFM	12	2.1	0.23	33	1.20	4500
DB0402012H2B	40x40x20	DC BLOWER 40x40x20MM 12V 2.5CFM	12	2.5	0.38	37	1.80	5500
DB0402012U2B	40x40x20	DC BLOWER 40x40x20MM 12V 3.0CFM	12	3.0	0.56	45	2.16	6500

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 26g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



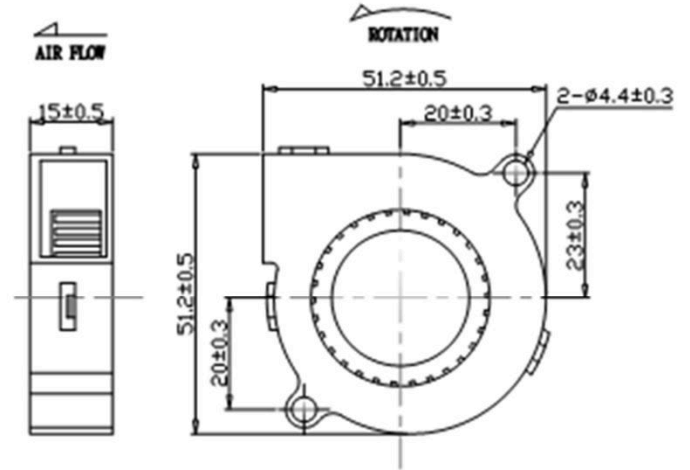
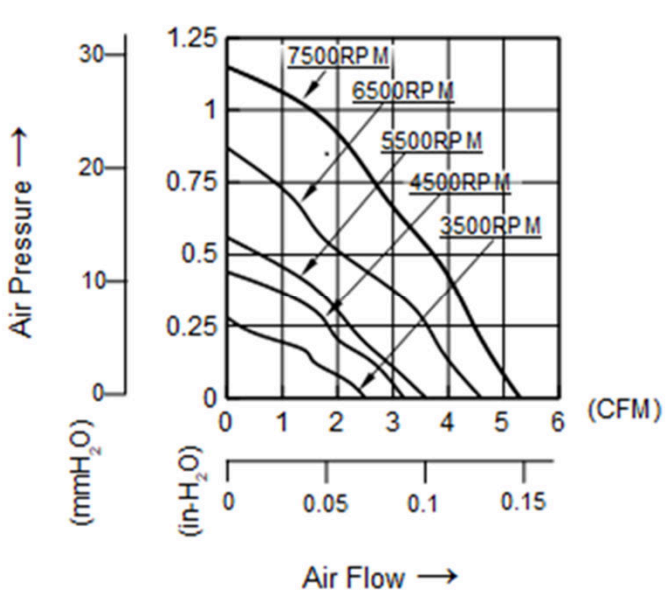
DB0511512

WVFN PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0511512L2B	51x51x15	DC BLOWER 51x51x15MM 12V 2.5CFM	12	2.5	0.28	27	0.72	3500
DB0511512M2B	51x51x15	DC BLOWER 51x51x15MM 12V 3.2CFM	12	3.2	0.44	33	0.84	4500
DB0511512H2B	51x51x15	DC BLOWER 51x51x15MM 12V 3.6CFM	12	3.6	0.55	37	1.08	5500
DB0511512U2B	51x51x15	DC BLOWER 51x51x15MM 12V 4.6CFM	12	4.6	0.87	45	1.8	6500
DB0511512V2B	51x51x15	DC BLOWER 51x51x15MM 12V 5.3CFM	12	5.3	1.15	48.5	1.8	7500

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 30g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



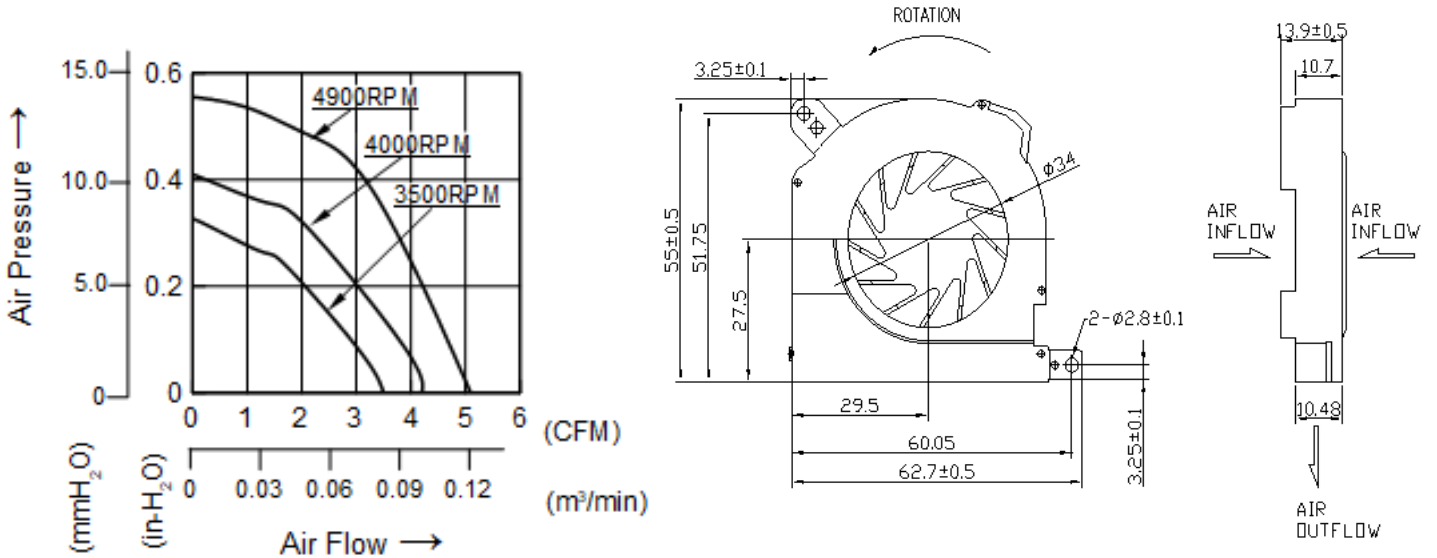
DB0551212

WV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0551212L2B	55x62x12	DC BLOWER 55x62x12MM 12V 3.5CFM	12	3.5	0.33	27	1.92	3500
DB0551212M2B	55x62x12	DC BLOWER 55x62x12MM 12V 4.2CFM	12	4.2	0.41	30	2.76	4000
DB0551212H2B	55x62x12	DC BLOWER 55x62x12MM 12V 5.1CFM	12	5.1	0.56	33	3.96	4900

See page 6 for termination information



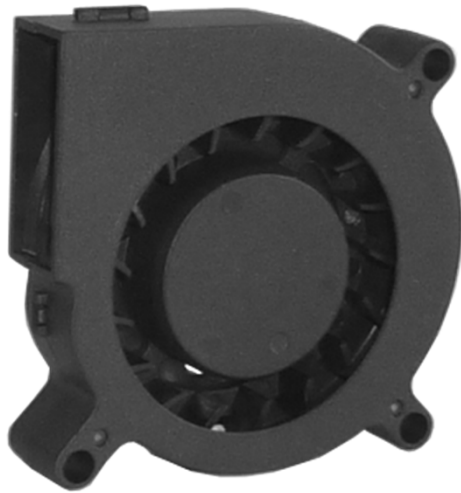
- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 35g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



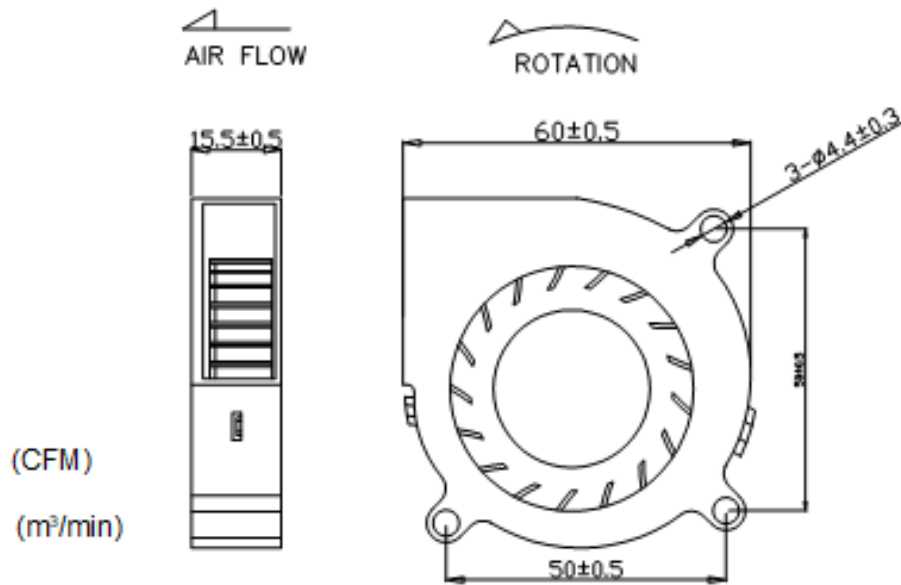
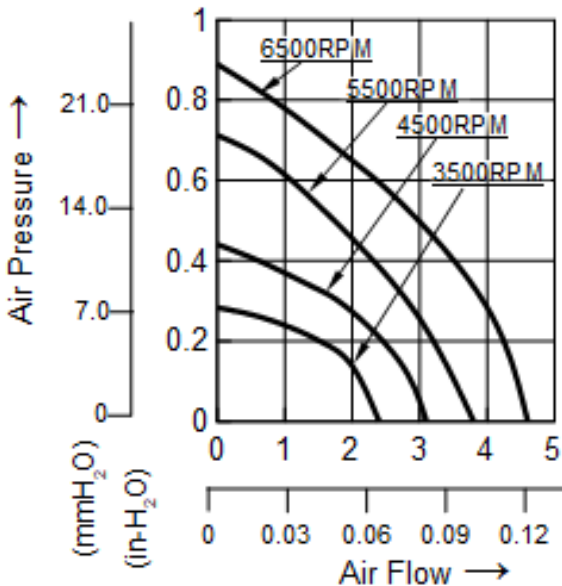
DB0601512

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0601512L2B	60x60x15	DC BLOWER 60x60x15MM 12V 2.4CFM	12	2.4	0.28	27	0.84	3500
DB0601512M2B	60x60x15	DC BLOWER 60x60x15MM 12V 3.1CFM	12	3.1	0.44	33	1.08	4500
DB0601512H2B	60x60x15	DC BLOWER 60x60x15MM 12V 3.8CFM	12	3.8	0.71	37	1.32	5500
DB0601512U2B	60x60x15	DC BLOWER 60x60x15MM 12V 4.6CFM	12	4.6	0.89	45	1.56	6500

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 40g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



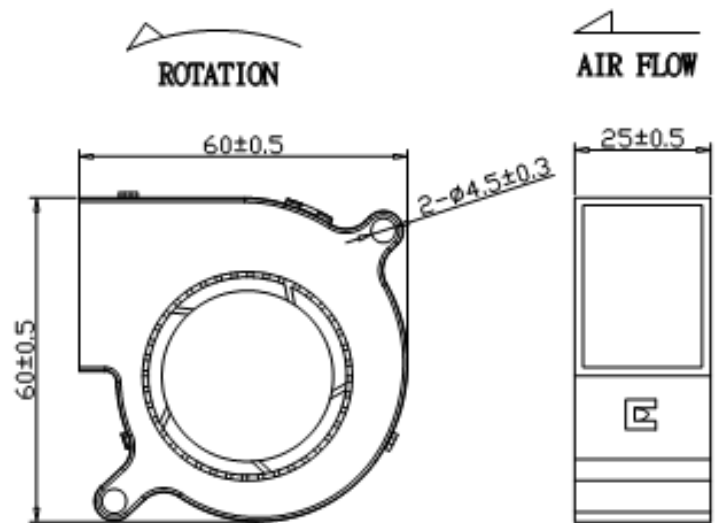
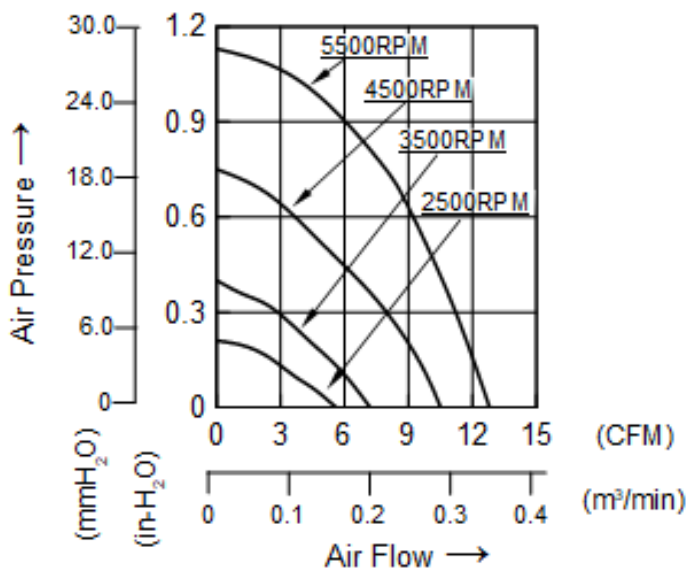
DB0602512

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0602512J2B	60x60x25	DC BLOWER 60x60x25MM 12V 5.6CFM	12	5.6	0.21	24	1.2	2500
DB0602512L2B	60x60x25	DC BLOWER 60x60x25MM 12V 7.2CFM	12	7.2	0.4	27	3	3500
DB0602512M2B	60x60x25	DC BLOWER 60x60x25MM 12V 10.5CFM	12	10.5	0.75	41	4.8	4500
DB0602512H2B	60x60x25	DC BLOWER 60x60x25MM 12V 12.8CFM	12	12.8	1.13	47	6	5500

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 45g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



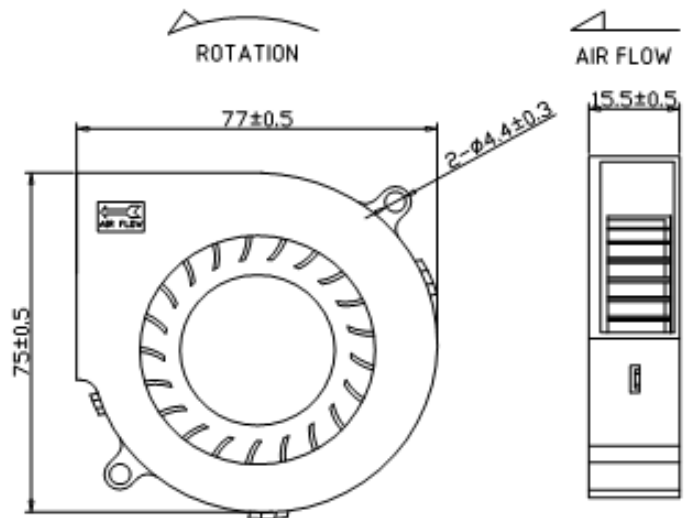
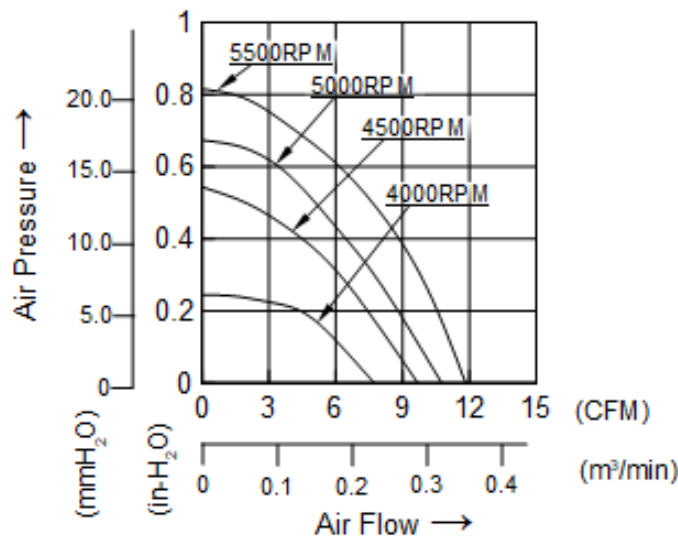
DB0751512

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0751512L2B	75x77x15	DC BLOWER 75x77x15MM 12V 7.4CFM	12	7.4	0.24	43	2.52	4000
DB0751512M2B	75x77x15	DC BLOWER 75x77x15MM 12V 9.7CFM	12	9.7	0.54	47	3.84	4500
DB0751512H2B	75x77x15	DC BLOWER 75x77x15MM 12V 10.8CFM	12	10.8	0.67	49	4.8	5000
DB0751512U2B	75x77x15	DC BLOWER 75x77x15MM 12V 11.9CFM	12	11.9	0.81	51	6	5500

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 45g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



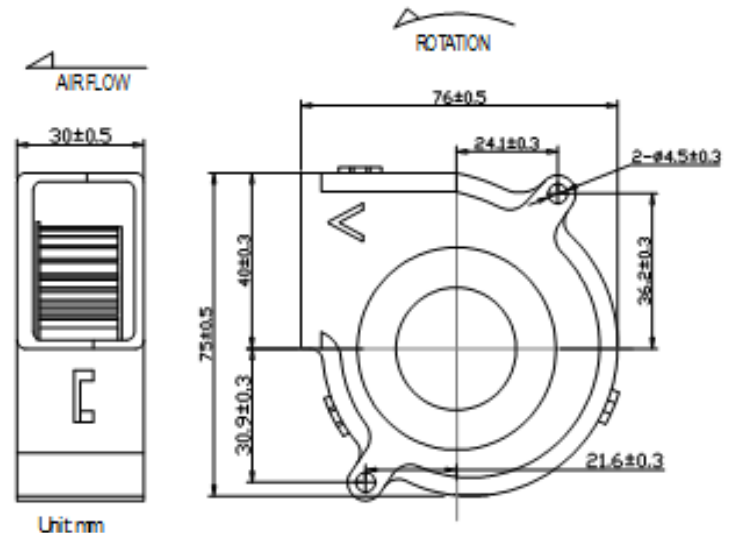
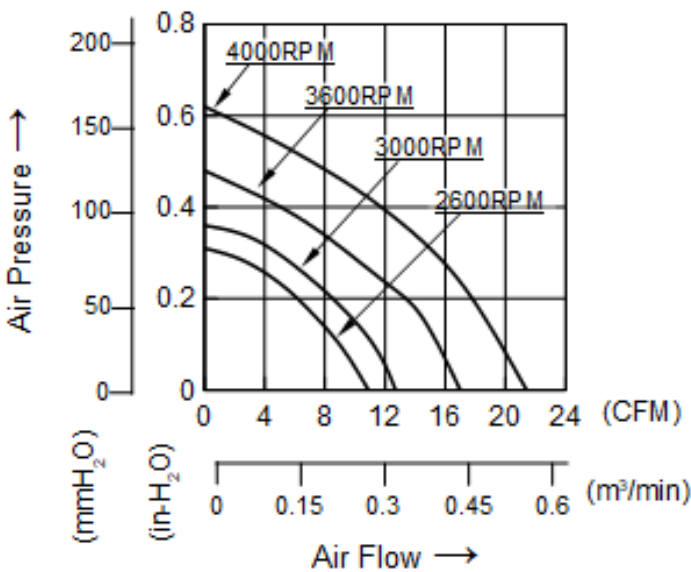
DB0753012

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0753012J2B	75x76x30	DC BLOWER 75x76x30MM 12V 10.9CFM	12	10.9	0.31	32	2.88	2600
DB0753012L2B	75x76x30	DC BLOWER 75x76x30MM 12V 12.7CFM	12	12.7	0.36	41	3.6	3000
DB0753012M2B	75x76x30	DC BLOWER 75x76x30MM 12V 17.0CFM	12	17	0.48	48	4.56	3600
DB0753012H2B	75x76x30	DC BLOWER 75x76x30MM 12V 21.4CFM	12	21.4	0.62	51	5.4	4000

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 100g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



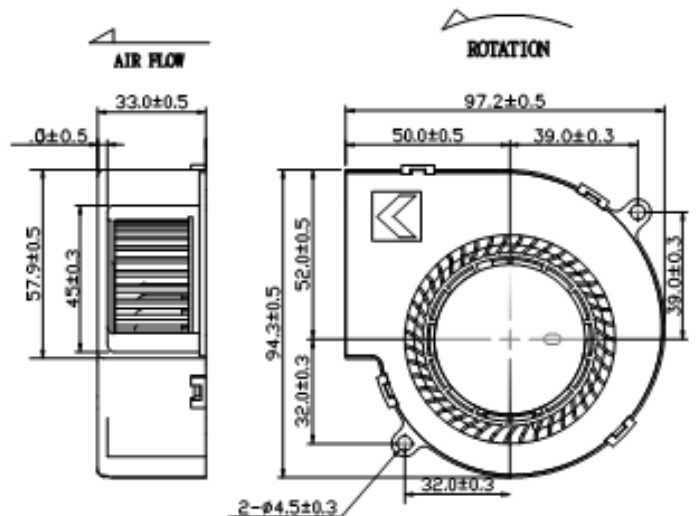
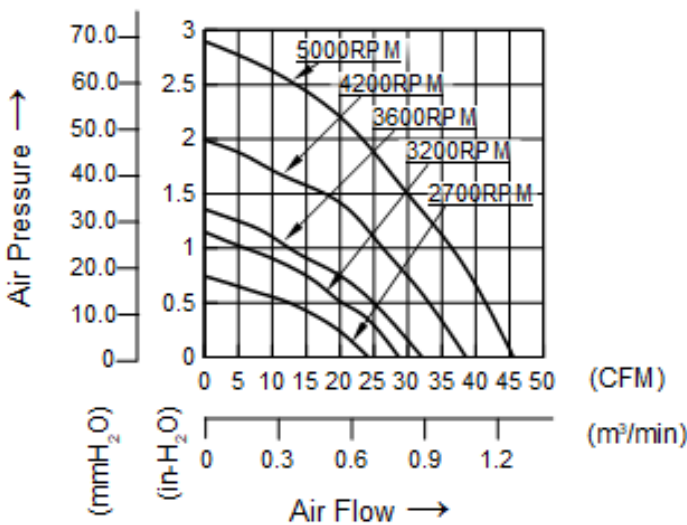
DB0973312

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB0973312L2B	97x94x33	DC BLOWER 97x94x33MM 12V 24.2CFM	12	24.2	0.75	48	4.56	2700
DB0973312M2B	97x94x33	DC BLOWER 97x94x33MM 12V 28.7CFM	12	28.7	1.15	52	7.92	3200
DB0973312H2B	97x94x33	DC BLOWER 97x94x33MM 12V 32.1CFM	12	32.1	1.36	55	10.56	3600
DB0973312U2B	97x94x33	DC BLOWER 97x94x33MM 12V 38.6CFM	12	38.6	1.99	59	18.6	4200
DB0973312V2B	97x94x33	DC BLOWER 97x94x33MM 12V 45.6CFM	12	45.6	2.9	63	22.8	5000

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 180g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional



DB1203212

WFV PN	Frame Size	Description	DC Voltage	Airflow (CFM)	Pressure (InAq)	Noise (dBA)	Power (W)	Speed (RPM)
DB1203212L2B	120x120x32	DC BLOWER 120x120x32MM 12V 24.6CFM	12	24.6	0.56	45	4.8	2100
DB1203212M2B	120x120x32	DC BLOWER 120x120x32MM 12V 28.8CFM	12	28.8	0.83	47	6.96	2500
DB1203212H2B	120x120x32	DC BLOWER 120x120x32MM 12V 32.1CFM	12	32.1	1.06	49	13.32	2800
DB1203212U2B	120x120x32	DC BLOWER 120x120x32MM 12V 37.5CFM	12	37.5	1.29	52	15	3100

See page 6 for termination information



- MOTOR : DC single phase brushless motor
- FRAME : PBT (94V-0) ; IMPELLER : PBT(94V-0)
- OPERATING TEMP.: -10°C~70°C
- STORAGE TEMP.: -40°C~70°C
- WEIGHT : 180g
- Dual Ball Bearing
- Lead Length: 300mm +/- 10mm
- 2 Wire: Standard
- 3 Wire: Tach(FG) Optional
- 4 Wire: PWM Optional

