Server. Storage. Telecom Cooling Solution

*All products are RoHS compliant.
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<th>Air Flow (CFM)</th>
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<th>Noise (dB(A))</th>
<th>Weight (g)</th>
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Function

PF36281BX / 1

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
S99: Auto Restart, F type and with PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**RD / FG Signal**

- RD / FG Output Voltage:
  - \( V_+ = 13.2V \text{ MAX} \)
  - \( I_f = 5mA \)
  - \( V_L = 0.5V \text{ MAX} \)

- PWM Frequency: 25KHZ

- Isource = 0.5mA at PWM Input Voltage 0V

- The speed is default to be maximum if PWM input pin is unconnected.

- Min. start up duty cycle is 10%.

---

**PWM Input Signal**

- System Fan Operation Current:
  - Vcc = rated volt.
  - +5V
  - PWM Input
  - Isource

- RD Output Voltage:
  - OFF
  - RUN
  - Dt
  - LOCKED

- \( V_{H} = 2.3\sim 5.5V \)

- \( V_{L} = 0\sim 0.8V \)

- \( T = \frac{1}{f_{PWM}} = t_1 + t_2 (sec) \)

- \( T = \frac{60}{rpm} \)

- Duty Cycle (D.C.):
  - \( \frac{t_1}{t_1 + t_2} * 100 = \frac{t_1}{T} * 100(\%) \)

- \( V_H = 2.3\sim 5.5V \)

- \( V_L = 0\sim 0.8V \)

- PWM FREQUENCY: 25KHZ

- Isource = 0.5mA at PWM Input Voltage 0V

- The speed is default to be maximum if PWM input pin is unconnected.

- Min. start up duty cycle is 10%.

---

**PWM Curve**

- PF36281BX

- PF36281B1

---

*All model could be customized. Please contact with Sunon Sales.*

*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.*
Specifications

<table>
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<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
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<th>Air Flow (CFM)</th>
<th>Static Pressure (inch-H2O)</th>
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<th>Curve</th>
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Function

VF38281BX / 1
- A9H: AutoRestart
- G9H: AutoRestart and F type
- S9H: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

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**RD / FG Signal**

\[ V_+ = 13.2V \text{ MAX} \]
\[ I_f = 5mA \]
\[ V_L = 0.5V \text{ MAX} \]

**PWM Input Signal**

1. Period: \( T = \frac{1}{f_{\text{PWM}}} = t_1 + t_2 (\text{sec}) \)
2. Duty Cycle (D.C.): \( \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100(\%) \)

\[ V_H = 2.3\sim5.5V \]
\[ V_L = 0\sim0.8V \]

PWM FREQUENCY: 25KHZ
Is\(\text{source} = 0.5mA \) at PWM Input Voltage 0V
The speed is default to be maximum if PWM input pin is unconnected.
Min. start up duty cycle is 10%.

**PWM Curve**

VF38281BX

VF38281B1

*All model could be customized. Please contact with Sunon Sales.
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38x38x28 mm

18.1 CFM

Specifications

<table>
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<tr>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tr>
<td>VAPO</td>
<td>12</td>
<td>574</td>
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Function

PF38281V1

A99: AutoRestart
G99: AutoRestart and F type
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
RD / FG Signal

PWM Input Signal

PWM Curve

**RD Signal**

<table>
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<tr>
<th>Vcc</th>
<th>V+</th>
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<tr>
<td>(+)</td>
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</tr>
<tr>
<td>(-)</td>
<td></td>
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**Rd Output Voltage**

OFF | RUN | DT | LOCKED |

**PWM Input Signal**

PWM Frequency: 25KHZ

Isource = 0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

Min. start up duty cycle is 10%.

**PWM Curve**

**System**

Vcc = rated volt.

PWM Input

Isource

Fan

+5V

4.7K

10K

**Fan Operation Current**

**Fan Operation Voltage**

VH = 2.3~5.5V

VL = 0~0.8V

**Period**:

\[ T = \frac{1}{f_{PWM}} = t_1 + t_2 (sec) \]

**Duty Cycle (D.C.)**:

\[ \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100\% \]

VH = 2.3~5.5V

VL = 0~0.8V

PWM FREQUENCY: 25KHZ

Isource = 0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

Min. start up duty cycle is 10%.

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<th>Power Consumption (WATTS)</th>
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<td>PF38281B1-0000-A99</td>
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<td>1.00</td>
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<td>10000</td>
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<td>0.60</td>
<td>40.8</td>
<td>40.0</td>
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Function

PF38281BX / 1

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

PF38281B2 / 3 / 4

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type

Air Flow-Static Pressure Characteristics

External dimensions (mm)

INLET

OUTLET

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
RD / FG Signal

User System

RD / FG Output

PWM Input Signal

System Fan

PWM Curve

PF38281BX

PF38281B1

*All model could be customized. Please contact with Sunon Sales.
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<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
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Function

VF40281BX / 1
A9H: AutoRestart
G9H: AutoRestart and F type
S9H: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
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RD / FG Signal

Fan Operation Current

RD Output Voltage

OFF  RUN  Dt  LOCKED

[ RD Signal ]

Fan

Operation

Current

RD Output Voltage

VH

VL

Vcc = rated volt.

PWM Input

Isource

Ground

VH = 2.3~5.5V

VL = 0~0.8V

PWM FREQUENCY: 25KHZ

Isource = 0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

Min. start up duty cycle is 10%.

PWM Input Signal

1. Period : 

\[ T = \frac{1}{f_{\text{PWM}}} = t_1 + t_2 (\text{sec}) \]

2. Duty Cycle (D.C.) : 

\[ \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100(\%) \]

VH = 2.3~5.5V

VL = 0~0.8V

PWM FREQUENCY: 25KHZ

Isource = 0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

Min. start up duty cycle is 10%.

PWM Curve

*All model could be customized. Please contact with Sunon Sales.

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40x40x28 mm

24.9 CFM

Specifications

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<th>Noise</th>
<th>Weight</th>
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<td>VAPO</td>
<td>12 (VDC)</td>
<td>740 (mA)</td>
<td>8.88 (WATTS)</td>
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Function

PF40281V1

A99: AutoRestart
G99: AutoRestart and F type
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
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**FG Signal**

- Fan
  - (+)
  - (-)
  - RD / FG Output

**User System**

- Vcc
- IF
- V+
- Ra

- V+ = 13.2V MAX
- If = 5mA
- VL = 0.5V MAX

**PWM Input Signal**

- PWM Curve
- PWM FREQUENCY: 25KHZ
- Isource = 0.5mA at PWM Input Voltage 0V

- The speed is default to be maximum if PWM input pin is unconnected.
- Min. start up duty cycle is 10%.

**PWM Curve**

- VF40281V1

**[ FG Signal ]**

- FG Output Voltage
  - T1
  - T2
  - T3
  - T4
  - T = 1 Rotation

- T = \( \frac{1}{f_{PWM}} \)
- T = t1 + t2 (sec)

- Duty Cycle (D.C.)
  - \( \frac{t1}{t1 + t2} \times 100\% = \frac{t1}{T} \times 100\% \)

- \( VH = 2.3 \sim 5.5V \)
- \( VL = 0 \sim 0.8V \)
- PWM FREQUENCY: 25KHZ
- Isource = 0.5mA at PWM Input Voltage 0V
- The speed is default to be maximum if PWM input pin is unconnected.
- Min. start up duty cycle is 10%.

*All model could be customized. Please contact with Sunon Sales.*

*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.*
40x40x28 mm

12.8~31.3 CFM

Specifications

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<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
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<td>0.54</td>
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<td>45.0</td>
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</tbody>
</table>

Function

PF40281BX / 1
A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

PF40281B2 / 3 / 4
A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type

Air Flow–Static Pressure Characteristics

External dimensions (mm)

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*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**FG Signal**

![FG Signal Diagram]

- Vcc = rated volt.
- PWM Input: +5V
- Isource: 10K
- Ground: 10K

**PWM Input Signal**

![PWM Input Signal Diagram]

- 1. Period: \( T = \frac{1}{f_{PWM}} = t_1 + t_2 \) (sec)
- 2. Duty Cycle (D.C.): \( \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100\%

**PWM Curve**

![PWM Curves for PF40281BX and PF40281B1]

- Speed (RPM) vs. Duty Cycle (%)

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40x40x56 mm

26.9~31.7 CFM

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed in / out (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
<tr>
<td>PF40561BX-0000-A99</td>
<td>6 BALL</td>
<td>12</td>
<td>1390</td>
<td>16.68</td>
<td>21500/18000</td>
<td>31.7</td>
<td>3.60</td>
<td>65.9</td>
<td>87.0</td>
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<td>6 BALL</td>
<td>12</td>
<td>890</td>
<td>10.68</td>
<td>18000/15000</td>
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<td>2.56</td>
<td>62.3</td>
<td>87.0</td>
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Function

PF40561BX / 1

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

*All model could be customized. Please contact with Sunon Sales.
Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
**FG Signal**

![Diagram of FG Signal]

- All models can be customized. Please contact Sunon Sales.
- Specifications are subject to change without notice. Please visit the SUNON website at www.sunon.com for the latest information.

**PWM Input Signal**

1. **Period**: \[ T = \frac{1}{f_{PWM}} = t_1 + t_2 (\text{sec}) \]
2. **Duty Cycle (D.C.)**: \[ \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100(\%) \]

- \( V_H = 2.3 \sim 5.5V \)
- \( V_L = 0 \sim 0.8V \)
- PWM FREQUENCY: 25KHZ
- \( I_{source} = 0.5mA \) at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected. Min. start up duty cycle is 10%.

**PWM Curve**

*All model could be customized. Please contact with Sunon Sales.*

*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.*
40x40x56 mm

19.7~25.0 CFM

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed in / out (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tr>
<td>VG40561BX-0000-A9H</td>
<td>6 BALL</td>
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<td>1400</td>
<td>16.80</td>
<td>25500/22300</td>
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<td>6.19</td>
<td>65.0</td>
<td>87.0</td>
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<td>VG40561B1-0000-A9H</td>
<td>6 BALL</td>
<td>12</td>
<td>750</td>
<td>9.00</td>
<td>20400/17800</td>
<td>19.7</td>
<td>4.16</td>
<td>62.5</td>
<td>87.0</td>
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Function

VG40561BX / 1
A9H: AutoRestart
G9H: AutoRestart and F type
S9H: AutoRestart, F type and PWM

External dimensions (mm)

Air Flow-Static Pressure Characteristics

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
*All model could be customized. Please contact with Sunon Sales.

*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
60x60x38 mm

60.6~75.2 CFM

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
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<tr>
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<td>12</td>
<td>2500</td>
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<td>PF60381B1-0000-A99</td>
<td>6</td>
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<td>13200</td>
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</table>

Function

PF60381BX / 1
A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**FG Signal**

![FG Signal Diagram]

**PWM Input Signal**

![PWM Input Signal Diagram]

**PWM Curve**

![PWM Curve Diagram]

---

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
60x60x38 mm

54.1~67.8 CFM

Specifications

<table>
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<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tr>
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<td>4.84</td>
<td>64.1</td>
<td>120.0</td>
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<tr>
<td>VF60381B1-0000-A9H</td>
<td>5</td>
<td>12</td>
<td>1000</td>
<td>12.00</td>
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<td>54.1</td>
<td>4.23</td>
<td>60.9</td>
<td>120.0</td>
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Function

VF60381BX / 1
A9H: AutoRestart
G9H: AutoRestart and F type
S9H: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**RD / FG Signal**

- **Fan**
  - RD / FG Output
  - (+)
  - (-)
  - Vcc
  - V+ (RD Signal)
  - V+ (FG Signal)
  - V+ (Vcc)
  - V+ (If)
  - V+ (Ra)

- **User System**
  - V+ = 13.2V MAX
  - If = 5mA
  - VL = 0.5V MAX

**PWM Input Signal**

- **System**
  - Vcc = rated volt.
  - +5V
  - PWM Input
  - Isource
  - Ground

- **Fan Operation Current**
  - OFF
  - RUN
  - Dt
  - VL

- **FG Output Voltage**
  - OFF
  - RUN
  - Dt
  - LOCKED

- **Period**
  - \[ T = \frac{1}{f_{PWM}} = t_1 + t_2 \text{ (sec)} \]

- **Duty Cycle (D.C.)**
  - \[ \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100\% \]

- **Speed (RPM)**
  - VH = 2.3 - 5.5V
  - VL = 0 - 0.8V
  - PWM FREQUENCY: 25KHZ
  - Isource = 0.5mA at PWM Input Voltage 0V
  - The speed is default to be maximum if PWM input pin is unconnected.
  - Min. start up duty cycle is 10%.

**PWM Curve**

- **VF60381BX**
  - Duty Cycle (%)
  - Speed (RPM)

- **VF60381B1**
  - Duty Cycle (%)
  - Speed (RPM)

---

*All model could be customized. Please contact with Sunon Sales.*

*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.*

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Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Voltage (VDC)</th>
<th>Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed in / out (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
<tr>
<td>PF60561BX-0000-A9H</td>
<td>5 BALL</td>
<td>12</td>
<td>2500</td>
<td>30.00</td>
<td>15300/14300</td>
<td>72.9</td>
<td>3.44</td>
<td>71.7</td>
<td>172.0</td>
<td>1</td>
</tr>
<tr>
<td>PF60561B1-0000-A9H</td>
<td>5 BALL</td>
<td>12</td>
<td>1400</td>
<td>16.80</td>
<td>12300/11500</td>
<td>58.5</td>
<td>2.35</td>
<td>67.0</td>
<td>172.0</td>
<td>2</td>
</tr>
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</table>

Function

PF60561BX / 1
A9H: AutoRestart
F9H: AutoRestart and R type
G9H: AutoRestart and F type
H9H: AutoRestart and PWM
Q9H: AutoRestart, R type and PWM
S9H: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
**RD / FG Signal**

- **Fan Operation Current**
- **RD Output Voltage**

**PWM Input Signal**

- **System**
- **Fan**

**PWM Curve**

*All model could be customized. Please contact with Sunon Sales. *Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed in / out (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (inchH2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
<tr>
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<td>5 Ball</td>
<td>12</td>
<td>2800</td>
<td>33.60</td>
<td>18200/14700</td>
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<td>3.96</td>
<td>68.6</td>
<td>270.0</td>
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</tr>
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<td>PF60761B1-0000-A99</td>
<td>5 Ball</td>
<td>12</td>
<td>1600</td>
<td>19.20</td>
<td>14600/11700</td>
<td>58.7</td>
<td>2.54</td>
<td>62.8</td>
<td>270.0</td>
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</table>

**Function**

PF60761BX / 1

- A99: AutoRestart
- F99: AutoRestart and R type
- G99: AutoRestart and F type
- H99: AutoRestart and PWM
- Q99: AutoRestart, R type and PWM
- S99: AutoRestart, F type and PWM

**External dimensions (mm)**

**Air Flow-Static Pressure Characteristics**

*All model could be customized. Please contact with Sunon Sales.*

*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.*
RD / FG Signal

- **RD Output**
  - **VH**: 2.3~5.5V
  - **VL**: 0~0.8V

- **PWM Frequency**: 25KHZ

- **Isource**: 0.5mA at PWM Input Voltage 0V

- The speed is default to be maximum if PWM input pin is unconnected.

- **Min. start up duty cycle**: 10%

---

PWM Input Signal

- **Vcc = rated volt.**
- **PWM Input**
- **Isource** = 0.5mA at PWM Input Voltage 0V

- The speed is default to be maximum if PWM input pin is unconnected.

- **Min. start up duty cycle**: 10%

---

PWM Curve

- **PF60761BX**
- **PF60761B1**

*All model could be customized. Please contact with Sunon Sales.*

*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.*
**80x80x38 mm**

**113.9~141.9 CFM**

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Airflow (CFM)</th>
<th>Static Pressure (inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
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<td>12</td>
<td>4000</td>
<td>48.00</td>
<td>14000</td>
<td>141.9</td>
<td>3.20</td>
<td>72.1</td>
<td>195.0</td>
<td>1</td>
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<td>PF80381B1-0000-A99</td>
<td>6</td>
<td>12</td>
<td>2000</td>
<td>24.00</td>
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<td>113.9</td>
<td>2.23</td>
<td>64.8</td>
<td>195.0</td>
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</tr>
</tbody>
</table>

### Function

**PF80381BX / 1**

- A99: AutoRestart
- F99: AutoRestart and R type
- G99: AutoRestart and F type
- H99: AutoRestart and PWM
- Q99: AutoRestart, R type and PWM
- S99: AutoRestart, F type and PWM

### Air Flow-Static Pressure Characteristics

![Air Flow-Static Pressure Characteristics Graph](image)

### External dimensions (mm)

![External dimensions Diagram](image)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**PWM Input Signal**

1. Period: \[ T = \frac{1}{f_{PWM}} = t_1 + t_2 (\text{sec}) \]
2. Duty Cycle (D.C.): \[ \frac{t_1}{t_1+t_2} \times 100 = \frac{t_1}{T} \times 100(\%) \]

- \( VH = 2.3 \sim 5.5V \)
- \( VL = 0 \sim 0.8V \)
- PWM FREQUENCY: 25KHZ
- \( I_{source} = 0.5mA \) at PWM Input Voltage 0V
- The speed is default to be maximum if PWM input pin is unconnected.
- Min. start up duty cycle is 10%.

**PWM Curve**

- PF80381BX
- PF80381B1

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
80x80x38 mm

105.8~134.3 CFM

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
<tr>
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<td>48</td>
<td>700</td>
<td>33.60</td>
<td>12900</td>
<td>134.3</td>
<td>3.35</td>
<td>67.5</td>
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<tr>
<td>PF80384B1-0000-A99</td>
<td>2 BALL</td>
<td>48</td>
<td>380</td>
<td>18.24</td>
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<td>105.8</td>
<td>2.46</td>
<td>62.6</td>
<td>204.0</td>
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</tr>
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Function

PF80384BX / 1
A99: Auto Restart
F99: Auto Restart and R type
G99: Auto Restart and F type
H99: Auto Restart and PWM
Q99: Auto Restart , R type and PWM
S99: Auto Restart , F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
FG Signal

1. **Period**: 
   \[ T = \frac{1}{f_{\text{PWM}}} = t_1 + t_2 \text{(sec)} \]

2. **Duty Cycle (D.C.)**: 
   \[ \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100 \%
   \]

- **VH** = 2.8~5.5V
- **VL** = 0~0.8V
- **PWM FREQUENCY**: 25KHZ
- **ISource** = 0.5mA at PWM Input Voltage 0V
- The speed is default to be maximum if PWM input pin is unconnected.
- Min. start up duty cycle is 10%.

All model could be customized. Please contact with Sunon Sales.

Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed in / out (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
<tr>
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<td>12</td>
<td>6800</td>
<td>81.60</td>
<td>15600/14100</td>
<td>151.5</td>
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<td>80.4</td>
<td>464.0</td>
<td>1</td>
</tr>
<tr>
<td>PF80801B1-0000-A9H</td>
<td>5 BALL</td>
<td>12</td>
<td>3500</td>
<td>42.00</td>
<td>12600/11300</td>
<td>122.0</td>
<td>3.66</td>
<td>75.1</td>
<td>464.0</td>
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</table>

### Function

- **PF80801BX / 1**
  - A9H: AutoRestart
  - G9H: AutoRestart and F type
  - S9H: AutoRestart, F type and PWM

### External dimensions (mm)

- **INLET**
  - Ø88.8
  - Ø77.5
- **OUTLET**
  - Ø88.0

### Air Flow-Static Pressure Characteristics

*All model could be customized. Please contact with Sunon Sales.

*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
**FG Signal**

- All model could be customized. Please contact with Sunon Sales.
- Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.

### PWM Input Signal

1. Period: \[ T = \frac{1}{f_{PWM}} = t_1 + t_2 \text{(sec)} \]

2. Duty Cycle (D.C.): \[ \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100\% \]

- \( V_H = 2.3 \sim 5.5 \text{V} \)
- \( V_L = 0 \sim 0.8 \text{V} \)
- PWM FREQUENCY: 25KHZ
- \( I_{source} = 0.5 \text{mA} \) at PWM Input Voltage 0V
- The speed is default to be maximum if PWM input pin is unconnected.
- Min. start up duty cycle is 10%.

### PWM Curve

- *All model could be customized. Please contact with Sunon Sales.*
- *Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.*
### Specifications

<table>
<thead>
<tr>
<th>Model</th>
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<th>Power Current (mA)</th>
<th>Power Consumption (Watts)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (In-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
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<td>72.1</td>
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<td>2ball</td>
<td>12</td>
<td>1700</td>
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<td>138.1</td>
<td>1.95</td>
<td>63.7</td>
<td>210.0</td>
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</tr>
</tbody>
</table>

### Function

PF92381BX / 1

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

### Air Flow-Static Pressure Characteristics

![Air Flow-Static Pressure Characteristics Graph]

### External dimensions (mm)

![External dimensions Diagram]

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**FG Signal**

- **User System**

  ![](image1)

  - V+ = 13.2V MAX
  - If = 5mA
  - VL = 0.6V MAX

- **FG Output Voltage**

  ![](image2)

- **PWM Input Signal**

  ![](image3)

- **PWM Curve**

  ![](image4)

---

*All model could be customized. Please contact with Sunon Sales.*

*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.*
140x140x38 mm

238.5~297.9 CFM

 Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Voltage (VDC)</th>
<th>Current (mA)</th>
<th>Power Consumption (Watts)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFE0381BX-0000-A99</td>
<td>6 BALL</td>
<td>12</td>
<td>3300</td>
<td>39.60</td>
<td>6800</td>
<td>297.9</td>
<td>2.05</td>
<td>68.3</td>
<td>472.0</td>
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<tr>
<td>PFE0381B1-0001-A99</td>
<td>6 BALL</td>
<td>12</td>
<td>1720</td>
<td>20.64</td>
<td>5500</td>
<td>238.5</td>
<td>1.20</td>
<td>62.0</td>
<td>472.0</td>
<td>2</td>
</tr>
</tbody>
</table>

 Function

PFE0381BX / 1

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
**FG Signal**

- **User System**
  - V+ = 13.2V MAX
  - If = 5mA
  - VL = 0.5V MAX

- **PWM Input Signal**
  1. **Period**: \( T = \frac{1}{f_{\text{PWM}}} = t1 + t2 \) (sec)
  2. **Duty Cycle (D.C.)**:
     \[ \frac{t1}{t1+t2} \times 100 = \frac{t1}{T} \times 100(\%) \]

- **PWM Curve**
  - **PFE0381BX**
  - **PFE0381B1**

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*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
140x140x38 mm

282.6 CFM

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Rating Voltage</th>
<th>Power Current</th>
<th>Power Consumption</th>
<th>Speed</th>
<th>Air Flow</th>
<th>Static Pressure</th>
<th>Noise</th>
<th>Weight</th>
<th>Curve</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFE0384BX-0000-A99</td>
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<td>560.0</td>
<td>282.6</td>
<td>6600</td>
<td>1.88</td>
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<td>560.0</td>
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</table>

Function

PFE03848X

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.
**FG Signal**

- All models can be customized. Please contact Sunon Sales.
- Specifications are subject to change without notice. Please visit SUNON’s website at www.sunon.com for update information.

**PWM Input Signal**

1. **Period**: \( T = \frac{1}{f_{PWM}} = t_1 + t_2 \text{ (sec)} \)

2. **Duty Cycle (D.C.)**: \( \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100 \% \)

**PWM Curve**

- \( VH = 2.3 \sim 5.5V \)
- \( VL = 0 \sim 0.8V \)
- PWM FREQUENCY: 25KHZ
- \( Isource = 0.5mA \) at PWM Input Voltage 0V
- The speed is default to be maximum if PWM input pin is unconnected.
- Min. start up duty cycle is 10%.

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
140x140x51 mm

250.3 CFM

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Bearing</th>
<th>Voltage (VDC)</th>
<th>Current (mA)</th>
<th>Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
</tr>
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<tbody>
<tr>
<td>PFE0514B1-0000-A99</td>
<td>2BALL, Sleeve</td>
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<td>470</td>
<td>22.56</td>
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Function

PFE0514B1

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.
**FG Signal**

![FG Signal Diagram]

*All model could be customized. Please contact with Sunon Sales.

Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.

**PWM Input Signal**

![PWM Input Signal Diagram]

1. Period: \( T = \frac{1}{f_{PWM}} = t_1 + t_2 \text{ (sec)} \)

2. Duty Cycle (D.C.): \( \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100\% \)

\[ VH = 2.3 \sim 5.5V \]
\[ VL = 0 \sim 0.8V \]

PWM FREQUENCY: 25KHZ

Isource = 0.5mA at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

Min. start up duty cycle is 10%.

**PWM Curve**

![PWM Curve Graph]

*All model could be customized. Please contact with Sunon Sales.

*Specifications are subject to change without notice. Please visit SUNON website at www.sunon.com for update information.*
97x95x33 mm

44.2~54.7 CFM

Specifications

<table>
<thead>
<tr>
<th>Model</th>
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<th>Rating Voltage (VDC)</th>
<th>Power Current (mA)</th>
<th>Power Consumption (WATTS)</th>
<th>Speed (RPM)</th>
<th>Air Flow (CFM)</th>
<th>Static Pressure (Inch-H2O)</th>
<th>Noise (dB(A))</th>
<th>Weight (g)</th>
<th>Curve</th>
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<tbody>
<tr>
<td>PF97331BX-B000-A99</td>
<td>☐</td>
<td>12</td>
<td>3500</td>
<td>42.00</td>
<td>6800</td>
<td>54.7</td>
<td>5.22</td>
<td>63.2</td>
<td>184.0</td>
<td>1</td>
</tr>
<tr>
<td>PF97331B1-B000-A99</td>
<td>☐</td>
<td>12</td>
<td>1600</td>
<td>19.20</td>
<td>5400</td>
<td>44.2</td>
<td>3.39</td>
<td>58.0</td>
<td>184.0</td>
<td>2</td>
</tr>
</tbody>
</table>

Function

PF97331BX / 1

A99: AutoRestart
F99: AutoRestart and R type
G99: AutoRestart and F type
H99: AutoRestart and PWM
Q99: AutoRestart, R type and PWM
S99: AutoRestart, F type and PWM

Air Flow-Static Pressure Characteristics

External dimensions (mm)

*All model could be customized. Please contact with Sunon Sales.
*Specifications are subject to change without notice. Please Visit SUNON website at www.sunon.com for update information.

2013/09/30 (198-A)
**FG Signal**

- All model could be customized. Please contact with Sunon Sales.
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**PWM Input Signal**

1. Period: \( T = \frac{1}{f_{PWM}} = t_1 + t_2 (sec) \)

2. Duty Cycle (D.C.): \( \frac{t_1}{t_1 + t_2} \times 100 = \frac{t_1}{T} \times 100(\%) \)

\( V_H = 2.3 \sim 5.5V \)
\( V_L = 0 \sim 0.8V \)

PWM FREQUENCY: 25KHZ

\( I_{source} = 0.5mA \) at PWM Input Voltage 0V

The speed is default to be maximum if PWM input pin is unconnected.

Min. start up duty cycle is 10%.

**PWM Curve**

- PF97331BX
- PF97331B1

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