



DYNATRON CORPORATION

NEW PRODUCT SPEC SHEET

Part Number: P199

- For Intel® CPU, Socket LGA775
 - Core™ 2 Quad Q6700, Q6600
 - Core™ 2 Extreme X6800
 - Core™ 2 Duo E6850, up to 3.0GHz
 - Pentium® Dual-Core E2180, up to 2.0GHz
 - Pentium® D 960, up to 3.6GHz
 - Pentium® 4 672, up to 3.8GHz
 - Pentium® 4 Extreme Edition, up to 3.73GHz
 - Celeron® D 365, up to 3.6GHz
- Active Cooler for 1U Server

Overall Specification:

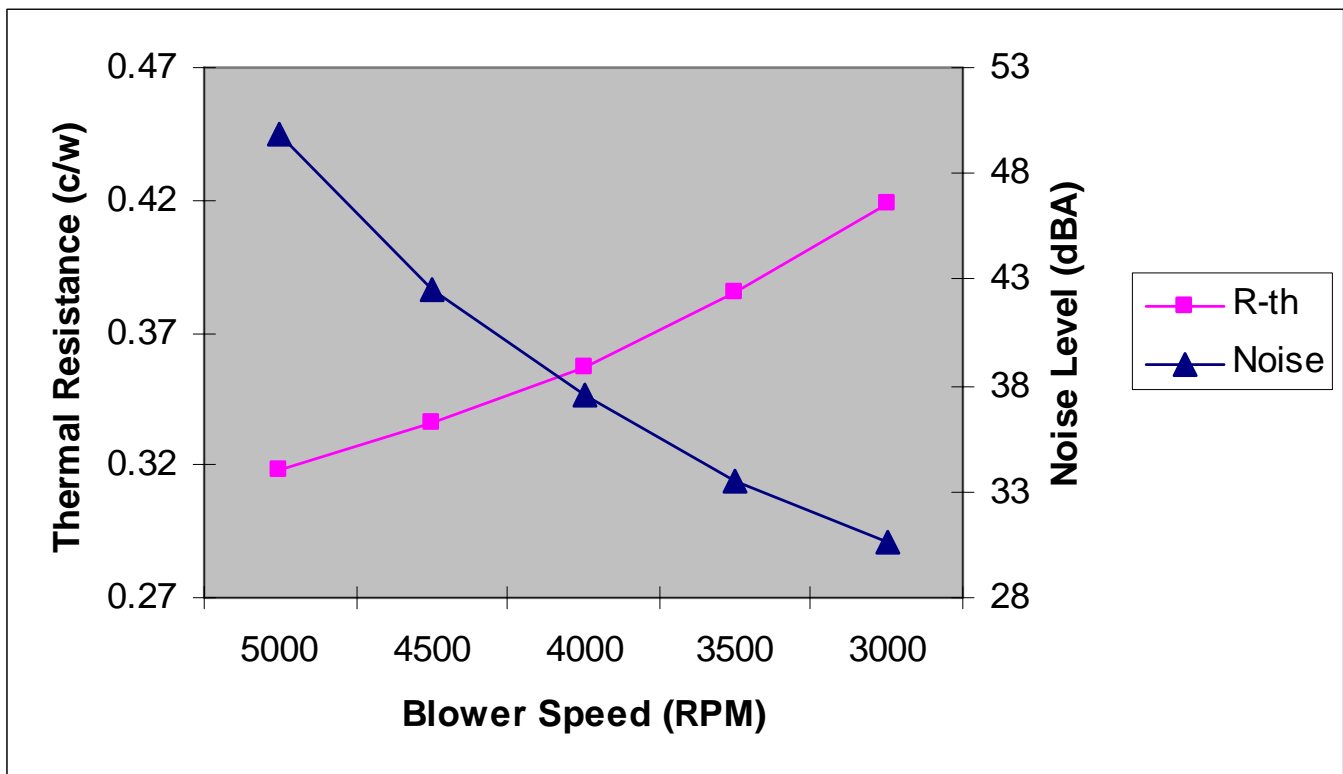
- Dimension: 82.6mm x 81.0mm x 28.5mm
- Weight: 340g ±5g
- Material: Copper Heatsink with Skiving Fins
- Upgraded thermal performance recruited by newly designed Heatsink
- Support Power up to 130Watts refer to system arrangement
- Orientations switchable without board components interference
- Slim sized Backing Plate to avoid solder joint impact from all system-boards including Supermicro board

Fan Specification:

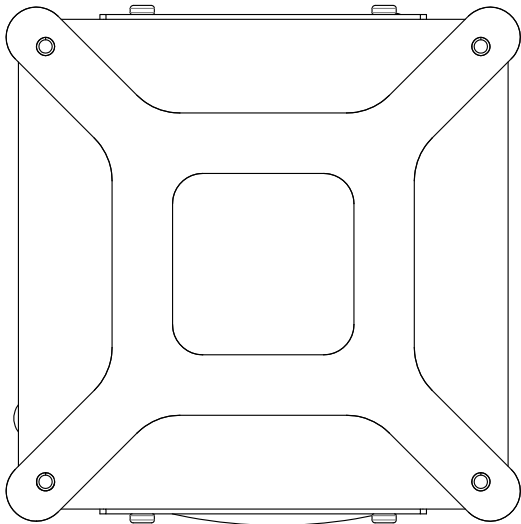
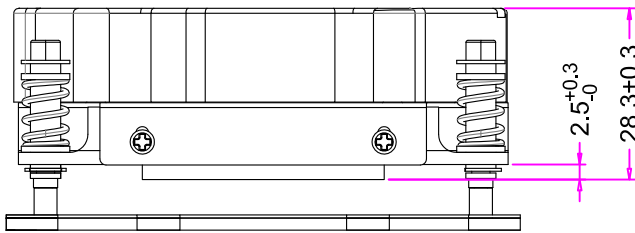
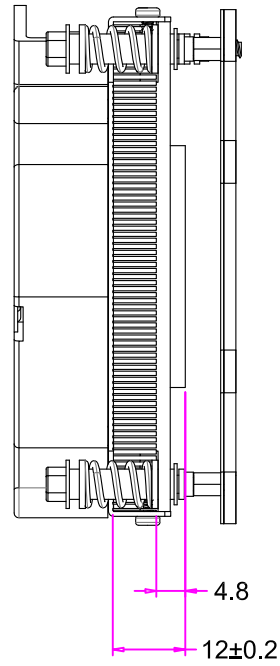
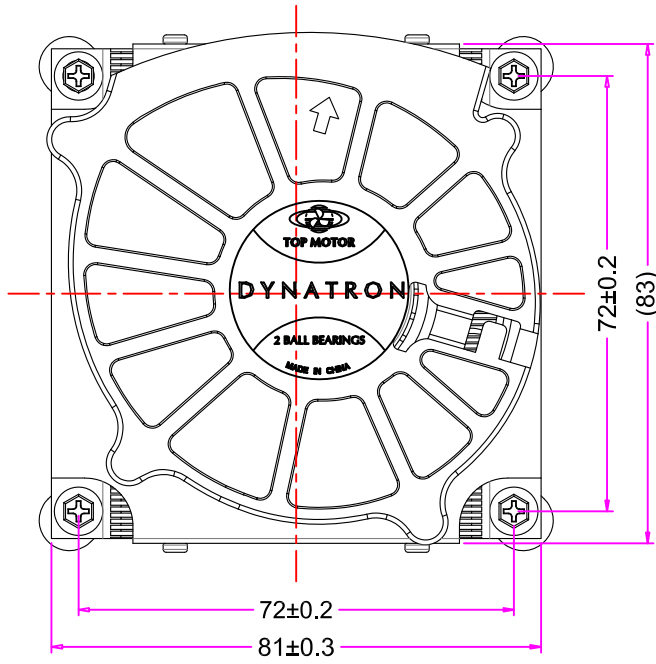
- 8015 Plastic Blower with PWM function
- Dimension: 80.0mm x 80.0mm x 15.7mm
- Rated Speed: 5000±10% RPM
- Bearing: 2 x Ball

- Rated Voltage: DC12V
- Maximum Airflow: 14.72 CFM
- Acoustical Noise: 48.851.7 dBA
- Lead Wire Pin Out: Pin#1 – Black (-)
Pin#2 – Yellow (+)
Pin#3 – Green (Tachometer / Signal output)
Pin#4 – Blue (PWM)

Cooler P199, Thermal Performance VS. Blower Acoustical Level Chart :



ITEM#	DESCRIPTION	CHECKER	DATE
1	Initial Release	LANG	09 / 14 / 07
2	Spec Drawing Update	LANG	02 / 26 / 14



	NAME	DATE
DRAWN BY	enr	09 / 14 / 2007
CHECKED BY	LANG	09 / 14 / 2007
ENG. APPROVED		
MFG. APPROVED	-	-



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TOP MOTOR

TITLE: **1U Active Cooler P199**
Overall Dimension Drawing

CONFIDENTIAL DOCUMENT

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VIEW	
UNITS	MM

DWG. No:

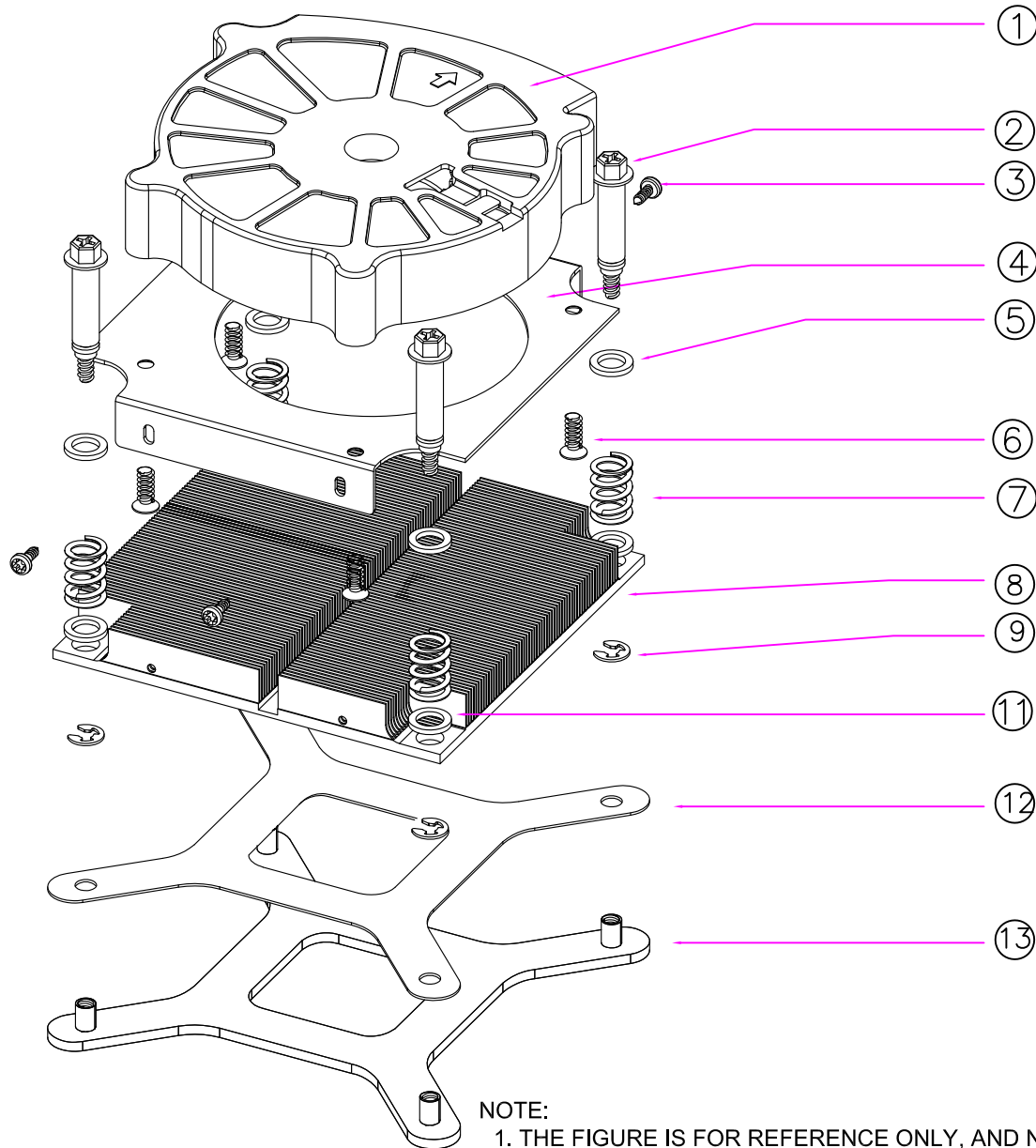
DYN-DM-P199

REV.

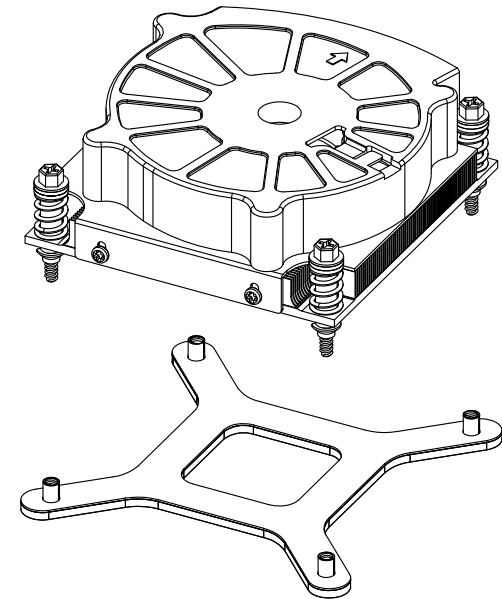
01

ITEM#	DESCRIPTION	CHECKER	DATE
1	Initial Release	LANG	09/14/07
2	Spec Drawing Update	LANG	02/26/14

ASSEMBLY PARTS



WHOLE SET OF COOLER



WHOLE PIECE OF BACKPLATE

13	THERMAL GREASE	SHIN-ETSU G75i	1
12	BACK PLATE	SPCC	1
11	INSULATOR	FORMEX GK-17	1
10	WASHER	STEEL	4
9	C-RING	STEEL	4
8	HEATSINK	COPPER	1
7	SPRING	SUS 304	4
6	SCREW, FAN	STEEL	4
5	WASHER	STEEL	4
4	COVER, FAN	AL5052	1
3	SCREW, COVER	STEEL	4
2	SCREW, HEATSINK	STEEL	4
1	BLOWER, DB128015BU-PWM	PLASTIC	1
ITEM NO.	DESCRIPTION	MATERIAL	QTY.

NOTE:

1. THE FIGURE IS FOR REFERENCE ONLY, AND NOT FOR SCALE
2. OVER ALL DIMENSION: 82.6MM x 81.0MM x 28.5MM
3. HEATSINK DIMENSION: 81.0MM x 81.0MM x 12.0MM

DATE	NAME	TOP MOTOR DYNATRON CORPORATION	
DRAWN 02/26/14	ENGR.	TITLE:	
CHECKED 02/26/14	LANG	1U Active Cooler P199	
ENG. APPR.		BOM & Exploded Assembly Drawing	
MFG. APPR.			
Q.A.			
COMMENTS:		DWG. No:	REV
		DYN-EP-P199	01



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Dynaeon Industrial Co., Ltd.

Specification for Approval

Customer:

Model Number: DF128015BU-PWM

Part Number:

Issued Date: Friday , May 04 2007

Customer Approval	
Approval:	Check:

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Approval:	Check:	Initiator
林俊甫 May 4, 2007	蔣尚偉 余大慶 May 4, 2007	王梅菊



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1. SCOPE

This specification defines the electrical and mechanical characteristics of the □ AC / ■ DC Brush less (□ Sleeve Bearing / 1□-Ball Bearing / ■ 2-Balls Bearing) axial flow fan, which is carefully designed and manufactured for your special needs by Dynatron Corporation.

2. ELECTRICAL CHARACTERISTICS

Items		Description		
1.	Rated Voltage	DC 12 V		
2.	Operating Voltage	7V±10%		
3.	Start Voltage(占空比 D=100%)	Low speed:9V 占空比(D=0-25%)	Low speed:7V (D=50%)	Low speed:4.5V (D=100%)
4.	Air Flow – At rated voltage zero static pressure (minimal value)	0.1m ³ / min (3.533CFM)	0.2168 m ³ / min (7.654CFM)	0.417 m ³ / min (14.719CFM)
5.	Static Pressure – At rated voltage At zero air flow	2.083mm-H ₂ O (0.082inch-H ₂ O)	9.78mm-H ₂ O (0.0385inch-H ₂ O)	36.168mm-H ₂ O (1.424inch-H ₂ O)
6.	Input Current (Max.)	0.05A	0.12A	0.8A
7.	Speed	1200RPM±200	2600RPM±10%	5000RPM±10%
8.	Acoustical Noise	20.711d BA	37.5dBA	51.7dBA
9.	Input Power	0.6W	1.44W	9.6W
10.	Insulation Resistance – Between Frame and Terminal	10 M ohm at DC 500 V		
11.	Dielectric Strength – Between Frame and Terminal	5 mA (Max.) @ AC 500 V 60 Hz 1 min.		
12.	Life – Continuous operating under normal temperature (25 °C or 77 °F)	50,000 hours		
13.	Rotation	Clockwise Air Discharged		
14.	Autorestart Time	3-5sec		
15.	Lead Wires	UL 1007, awg 26 or Equivalent “-”: Black; “+”: Red; ”S”: white. ”PWM”: Blue.		



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3. MECHANICAL CHARACTERISTICS

Items		Description
1.	Dimension	Display as Drawing
2.	Frame	PBT UL94V-0 (Black GP)
3.	Impeller	PBT UL94V-0 (Black GP)
4.	Bearing System	Two ball Bearing
5.	Weight	75±5 grams

4. ENVIRONMENTAL

Items		Description
1.	Operating Temperature	- 10 °C ~ + 65 °C (65 %RH)
2.	Storage Temperature	- 30 °C ~ + 70 °C (65 %RH)
3.	Vibration Test	Displacement Amplitude: 0.75mm(Equivalent 10G) Frequency Range:10Hz<->55Hz/30SEC. Linear Scanning 120 Cycle Endurance Timer Per Axis:30Min. Orientation:X,Y,Z.
4.	Drop Test	Motor withstands one free body drop from 30 cm in high onto 10 mm thickness of wooden board for each of the three faces in minimum packing condition.
5.	Acoustic Noise	2.0711/37.5/51.7dBA – Curve (Max) Measuring Condition – Under rated voltage in semi-anechoic chamber equipment sound level meter. (Figure A.)



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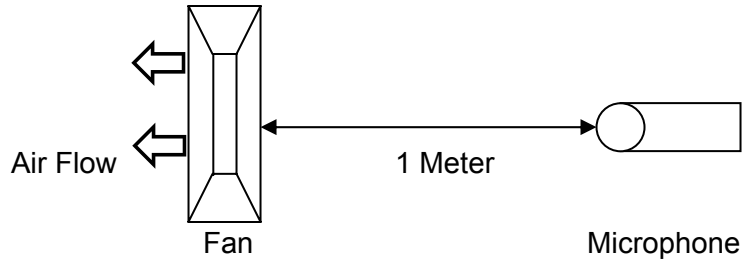


Figure A – Noise Level is measure at rated voltage in anechoic chamber in free air as above.

5. PROTECTION

Items		Description
1.	Polarity Protection	For polarity error connection to power, the circuit withstands reversed connection between positive and negative leads.
2.	Locked Rotor Protection	Motor winding protects the motor from damage in 72 hours of locked rotor condition at rated voltage.

ATTACHMENTS

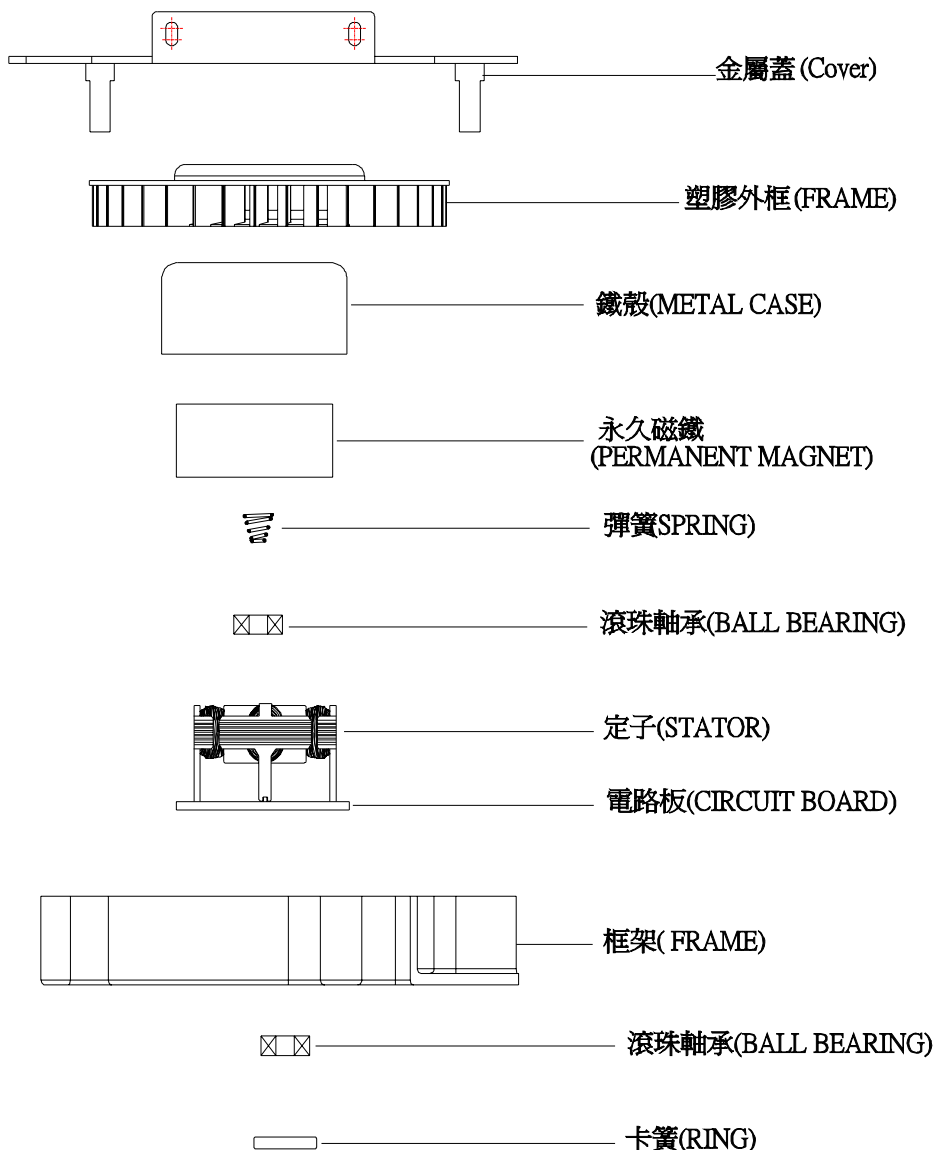
- a. Assembly Drawing
- b. Product Dimension
- c..Electrical Specifications for pwm production



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風扇組立圖



美商政久電子五金廠
TOP MOTOR DYNAEON INDUSTRIAL CO.,LTD.

DB128015BU

公差		核準	林俊甫
單位	MM	審核	謝宏華
版本	1.0	制圖	王梅菊
備註		日期	2007/05/04

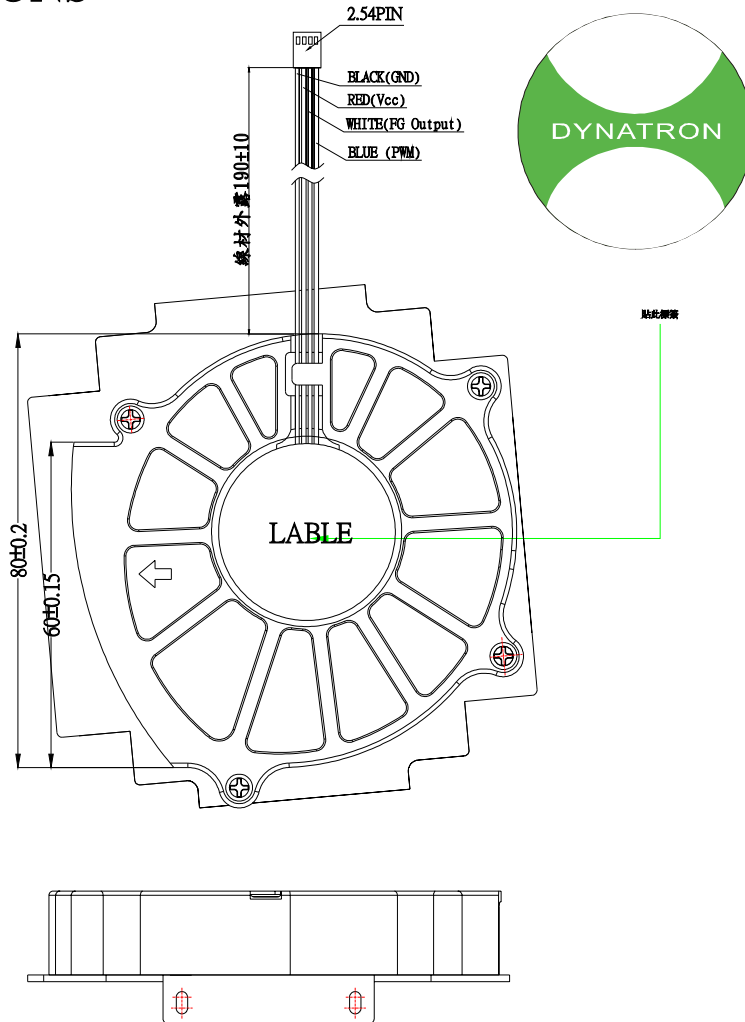
圖檔類型 組裝圖



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DIMENSIONS



UNIT:mm

1. LEAD WIRE:1007 #26 AWG 80°C 300V UL,CSA APPROVAL



DYNAEON INDUSTRIAL CO.,LTD.

DB128015BU

Tolerance	Vide Supra	Approval	林俊甫
Unit	mm	Check	謝宏華
Edition	1.0	Initiator	王梅菊
Drawing Type	Dimensions	Remark	Date
			2007/05/04



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Electrical Specifications for PWM production

Voltage

Fan operating voltage shall be within the range 12V \pm 1.2V.

Current

Peak fan current draw during start-up operation(with 13.2V applied,with fan operating in the free stream condition)shall not exceed 2.0 A.

Fan current spike during start-up operation(with 13.2V applied with fan operating in the free stream condition)shall be allowed to exceed 1.0 A for a duration of no greater than 1.0 sec.

Tachometer Output Signal

Fan shall provide tachometer output signal with the following characteristics:

- * Two pulses per revolution
- * Open-collector or open-drain type output
- * Motherboard will have a pull up to 12V, maximum 13.2V

PWM Control Input Signal

The following requirements are measured at the PWM(control) pin of the fan cable

connector:PWM Frequency:Target frequency 25kHz,

acceptable operational range 21 kHz to 28 KHz

Maximum voltage for logic low:VIL=0.8V

Absolute maximum current sourced:Imax=5mA(short circuit current)

Absolute maximum voltage level:Vmax=5.25V(open circuit voltage)

Fan Speed Control

1.1Maximum Fan Speed Requirements

The maximum fan speed shall be specified for the fan model by the vendor and correspond to 100% duty cycle PWM signal input.

1.2 Minimum Fan Speed Requirements

The vendor shall specify the minimum RPM and the corresponding PWM duty cycle. This specified minimum RPM shall be 30% of maximum RPM or less.The fan shall be able to start and run at this RPM. To allow a lower specified minimum RPM,it is acceptable to provide a higher PWM duty cycle to the fan motor for a short period of time for startup conditions.This pulse should not exceed 30% maximum RPM and should last no longer than 2 seconds.



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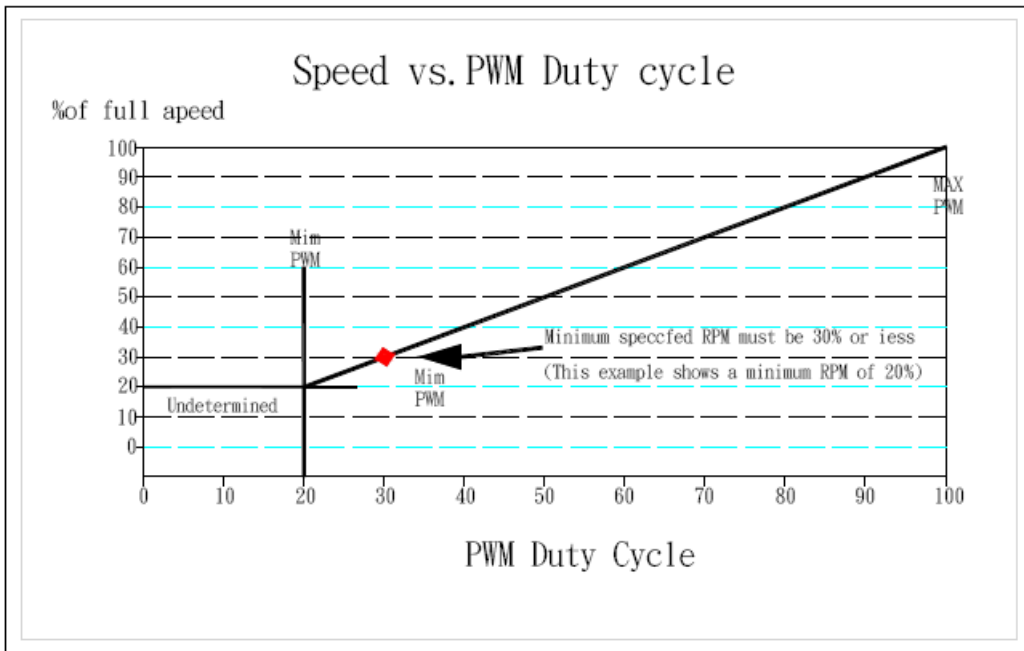
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1.3 Fan Speed Response PWM Control Input Signal

The PWM input shall be delivered to the fan through the control signal on Pin4. Fan speed response to this signal shall be a continuous and monotonic of the duty cycle of the signal, from 100% to the minimum specified RPM. The fan RPM (as a percentage of maximum RPM) should match the PWM duty cycle within $\pm 10\%$. If no control signal is present the fan shall operate at maximum RPM.

Figure 1 Fan speed Response to PWM Control input Signal



1.4 Operation Below Minimum RPM

For all duty cycles less than the minimum duty cycle, the RPM shall not be greater than the minimum RPM. The following graphs and definitions show three recommended solutions to handle PWM duty cycles that are less than the minimum operational PWM, as a percentage of maximum.

Reference resource by Intel's 4-wire PWM Fan controlled specification.