DYNATRON

Model Q10

2U Active Air Cooler

PRODUCT SPECIFICATIONS

Table of Contents

1. PRODUCT DESCRIPTION 3

2. THERMAL PERFORMANCE CURVE 4

3. EP DRAWING 5

4. DM DRAWING..... 6

5. THERMAL GREASE PREPRINTED DIMENSION DRAWING..... 7

6. FAN SPECIFICATION..... 8 ~ 21

7. RoHS CERTIFICATION 22

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Model Number: Q10

- Recommend for Intel® CPU as following
  - Support Intel Core 12th -15th Gen, Socket LGA1700/1851
  - Active Cooler for 2U Server & Up

Overall Specification

Dimension	106 x 106 x 62 mm
Weight	430 g
Material	Aluminum Radial fin Heat Sink with Copper Core Inserted
Fan	7720 Round Fan Top-Down Blowing
Retention	Captive with Screw-on Retention
Push-Pin Set	Included
Thermal Grease	Pre-Printed with Shin-Etsu 7762 or Equivalent
TDP	Support 125 Watts CPU Power Heat Dissipation at 30°C ambient temperature

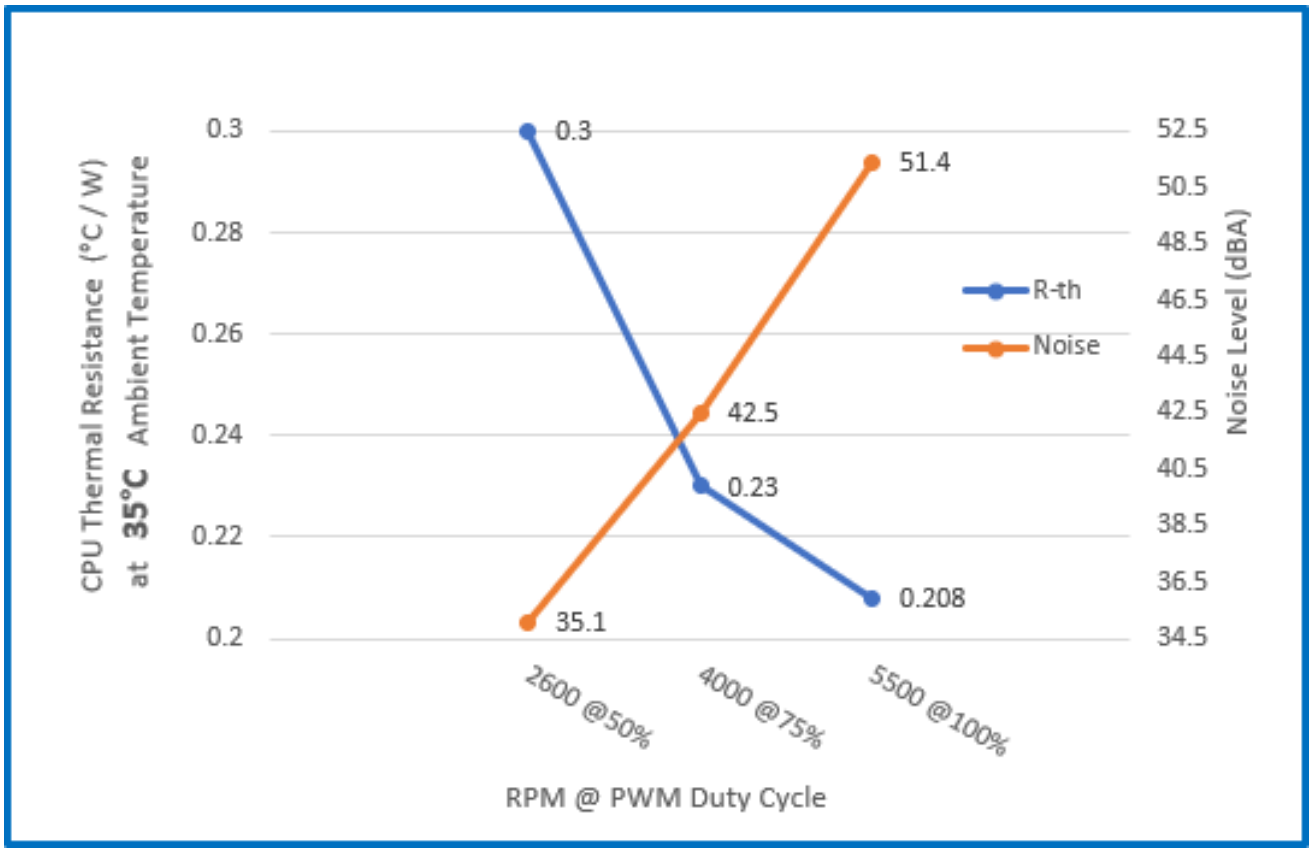
Cooling Fan Specification

Dimension	Ø 77.0 x 20.0 mm
Bearing	Ball Bearing, Dual
Rated Voltage	12V
Rated Speed	At Duty Cycle 0~20%: 1000 RPM At Duty Cycle 50%: 2600 RPM At Duty Cycle 100%: 5500 RPM
Input Power	At Duty Cycle 0~20%: 0.54 W At Duty Cycle 50%: 1.68 W At Duty Cycle 100%: 9.0 W
Maximum Airflow	At Duty Cycle 0~20%: 8.36 CFM At Duty Cycle 50%: 25.5 CFM At Duty Cycle 100%: 53.9 CFM
Rated Static Pressure	At Duty Cycle 0~20%: 0.240 mm- H2O At Duty Cycle 50%: 1.250 mm-H2O At Duty Cycle 100%: 5.590 mm-H2O
Acoustical Noise	At Duty Cycle 0~20%: 20.6 dBA At Duty Cycle 50%: 35.1 dBA At Duty Cycle 100%: 51.4 dBA

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Lead Wire Pin Out	Pin#1- Black(-) Pin#2- Yellow(+) Pin#3- Green(Tachometer/ Signal Output) Pin#4- Blue (PWM)

Performance Chart : Active Cooler Model Q10 Cooling Performance Thermal Resistance VS. Fan Speed @ PWM % Duty Cycle



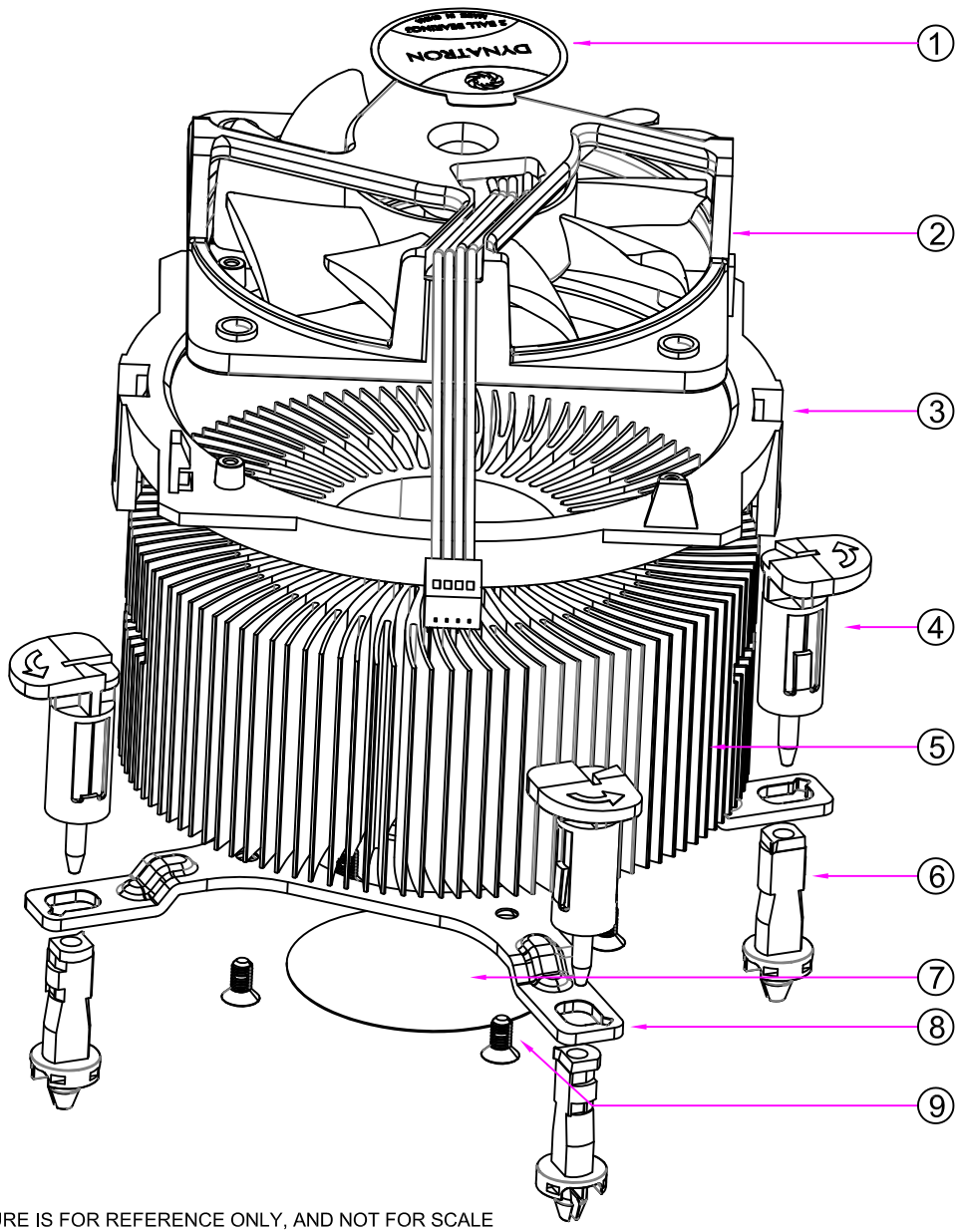
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CONFIDENTIAL DOCUMENT

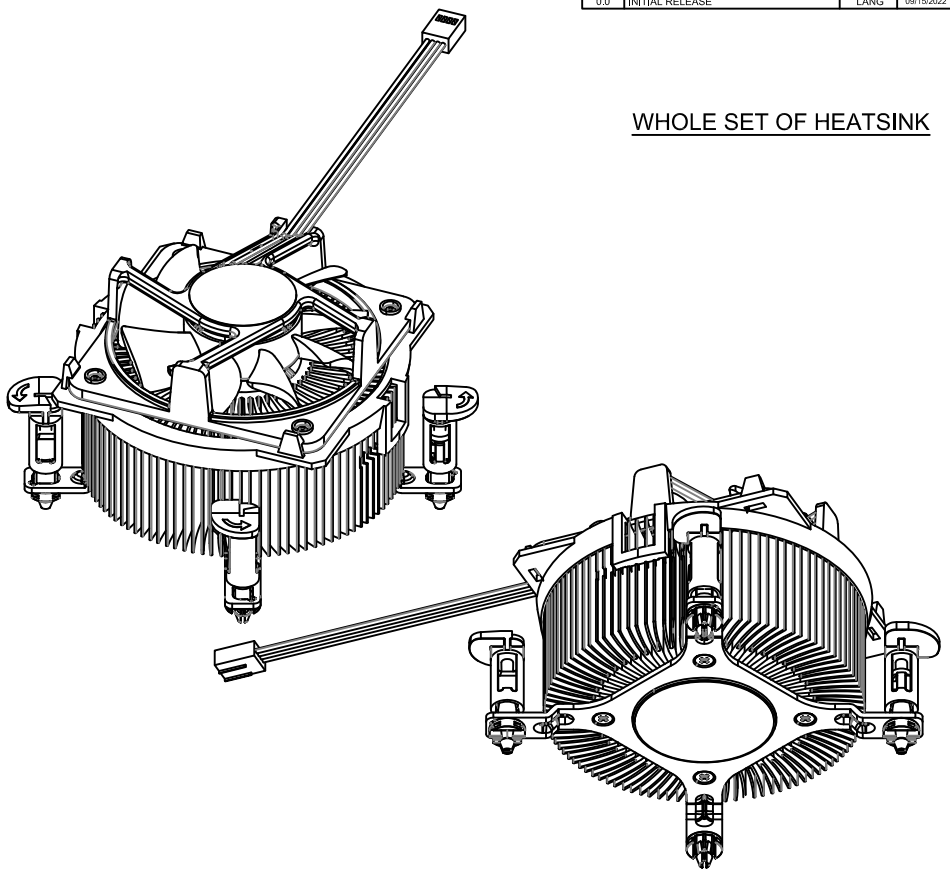
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REV#	DESCRIPTION	CHECKER	DATE
0.0	INITIAL RELEASE	LANG	09/15/2022

ASSEMBLY PARTS



WHOLE SET OF HEATSINK



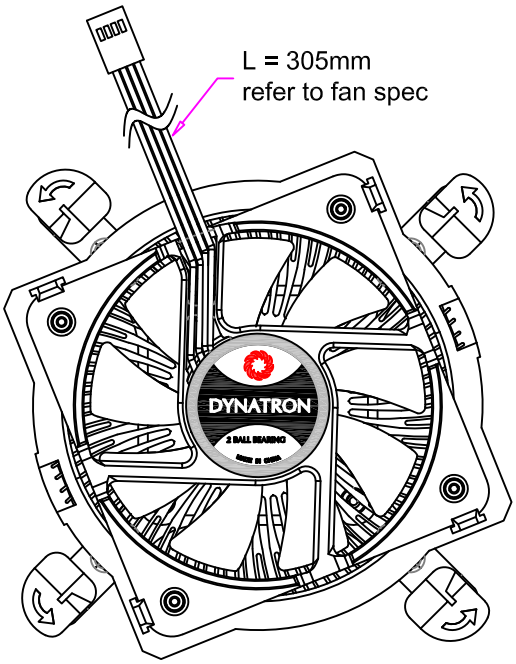
ITEM#	DESCRIPTION	MATERIAL	QTY.
9	SCREW, RETENTION MOUNTING	STEEL	4
8	RETENTION, PUSH-PIN	SK7	1
7	THERMAL GREASE, PREPRINTED THK. = 0.2 mm , WHOLE CIRCLE	SHIN-ETSU 7762	1
6	PUSH-PIN, WHITE	PLASTIC	4
5	HEATSINK, RADIAL	COPPER CORE + AL.FIN	1
4	PUSH-PIN, BLACK	PLASTIC	4
3	FAN BRACKET	PLASTIC	1
2	FAN, DF127720BH - PWM (5500RPM)	PLASTIC	1
1	FAN LABEL	PC	1

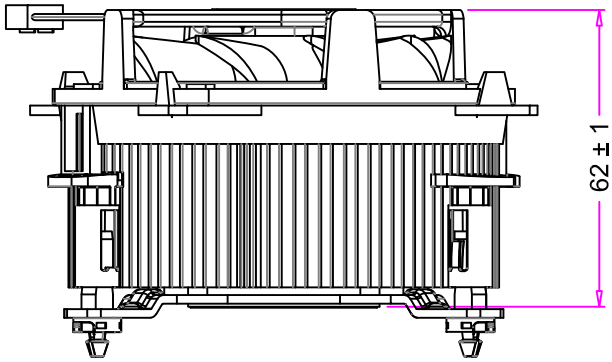
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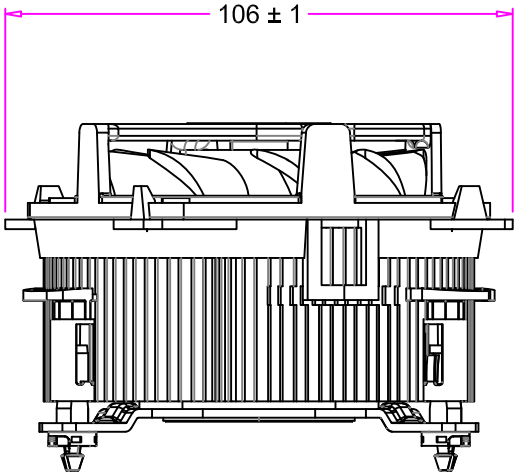
1. THE FIGURE IS FOR REFERENCE ONLY, AND NOT FOR SCALE
2. OVERALL DIMENSION: 106 x 106 x 62 mm
3. OVERALL WEIGHT 430 g

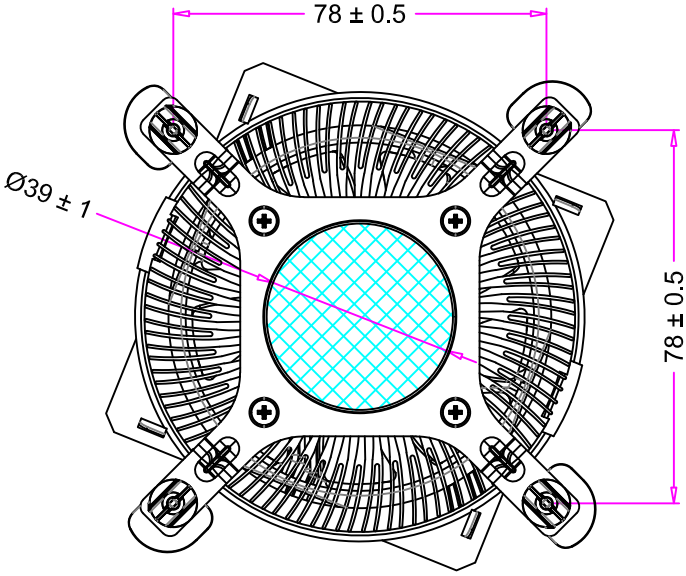
	DATE	NAME	DYNATRON CORPORATION
DRAWN	09/15/2022	Engr	TITLE: 2U Active Cooler Model **Q10** BOM & Exploded Assembly Drawing
CHECKED	09/15/2022	LANG	
ENG. APPR.			
MFG. APPR.			
Q.A.			
COMMENTS:			DWG. No: DYN - EP - Q10 REV 0.0

REV#	DESCRIPTION	CHECKER	DATE
0.0	INITIAL RELEASE	LANG	09/15/2022









	NAME	DATE
DRAWN BY	ENGR	09/15/2022
CHECKED BY	LANG	09/15/2022
ENG.APPROVED		
MFG.APPROVED	-	-

TOP MOTOR

DYNATRON CORPORATION

TITLE: 2U Active Cooler Model **Q10**
Overall Dimension Drawing

VIEW		DWG. No:	REV.
UNITS	MM	DYN - DM - Q10	0.0

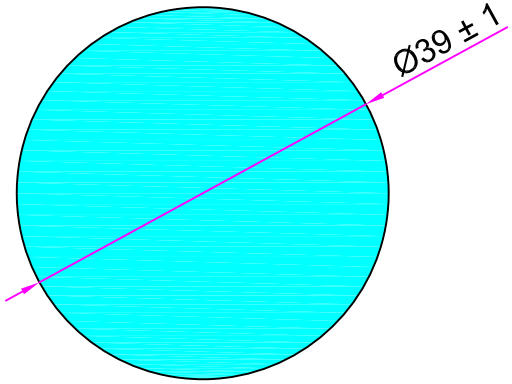
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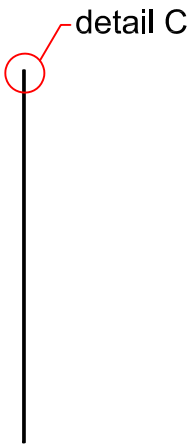
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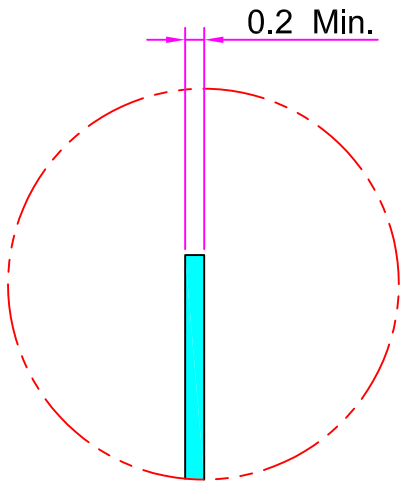
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REV #	DESCRIPTION	CHECKER	DATE
0.0	INITIAL RELEASE	LANG	09/07/2022







detail C
scale 10 : 1

NOTES:
1. UNIT: MM
2. MATERIAL : SHIN-ETSU 7762 OR EQUIVALENT

	DATE	NAME
DRAWN	09/07/2022	engr
CHECKED	09/07/2022	lang
ENG. APPR.		
MFG. APPR.		
Q.A.		
COMMENTS:		

TOP MOTOR DYNATRON CORPORATION

TITLE:
Thermal Grease Pre-printed
Dimension Drawing

DWG. No:

REV
0.0

DYNATRON CORPORATION

TOP MOTOR

TOP MOTOR TECHNOLOGY(HUIZHOU)CO,LTD.

Specification for Approval

Customer:	
Model Number:	DF127720BH-PWM
Part Number:	
Issued Date:	Friday December 26, 2008

Customer Approval	
Approval:	Check:
Corporate Headquarters ***Dynatron Corporation*** 42307 Osgood Road, #F, Fremont, California 94539, U.S.A. Tel: 510-498-8888 Fax: 510-498-8488	Manufactory ***TOP MOTOR TECHNOLOGY(HUI ZHOU)CO,LTD*** Baishi Village,QiuchangTown, Huiyang Dist,HuizhouCity,Guangdong Province,P.R.China Tel: 86-752-353-5591 (Rep.) Fax: 86-752-353-5592
Los Angeles Office (U.S.A.) 337 Paseo Sonrisa, Walnut, California 91789 U.S.A. Tel: 909-598-2222 Fax: 909-598-8158	*Taipei Office (Taiwan, R.O.C.)* 8F, No. 35,Lane:221, Gang Cian Road, Taipei, Taiwan, R.O.C. Tel: 886-2-2799-5799(Rep.) Fax: 886-2-2799-9577

Approval:	Check:	Initiator

CONTENTS Page

1.	SCOPE	3
2.	ELECTRICAL CHARACTERISTICS	3
3.	MECHANICAL CHARACTERISTICS	4
4.	ENVIRONMENTAL	4
5.	PROTECTION	5
6.	ATTACHMENTS	5
	a. Product Dimension	6
	b..Electrical Specifications for pwm production	7

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	10.8V-13.2V		
3.	PWM Frequency 25KHz	Duty Cycle D＝(0~20%)	Duty Cycle D＝50%	Duty Cycle D＝100%
4.	Start Voltage	L: 12V	M: 12V	H: 8V
5.	Air Flow – At rated voltage zero static pressure (minimal value)	0.23m³ /z min (8.36CFM)	0.72 m³ / min (25.5CFM)	1.52m³ / min (53.899CFM)
6.	Static Pressure – At rated voltage At zero air flow	0.24mm-H_2O (0.009inch-H_2O)	1.25mm-H_2O (0.049inch-H_2O)	5. 591mm-H_2O (0.220inch-H_2O)
7.	Input Current (Max.)	0.055A	0.14A	0.75A
8.	Speed (Max.)	1000RPM ±15%	2600RPM ±10%	5500RPM ±10%
9.	Acoustical Noise	20.6dBA	35.1dBA	51.4dBA
10.	Input Power	0.54W	1.68W	9W
11.	Insulation Resistance – Between Frame and Terminal	10 M ohm at DC 500 V		
12.	Dielectric Strength – Between Frame and Terminal	5 mA (Max.) @ AC 500 V 60 Hz 1 min.		
13.	Life – Continuous operating under normal temperature (40°C or 104°F)	70,000 hours		
14.	Rotation	Clockwise Air Discharged		
15	Autorestart Time	3-5sec		
16	Lead Wires	UL 1007, awg 26 or Equivalent “-“: Black; “+”: Yellow;”s”: Green.”PWM”Blue.		

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	60 ± 3grams

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. Lineear 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	20.6/35.1/51.4dBA – Curve (Max)21.1/35.6/51.9 Measuring Condition – Under rated voltage in semi-anechoic chamber equipment sound level meter. (Figure A.)

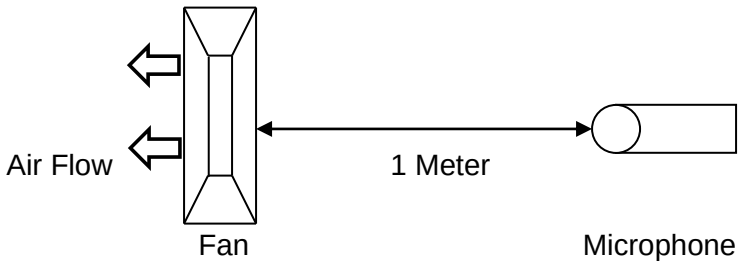


Figure A – Noise Level is measure at rated voltage in anechoic chamber in free air as above.

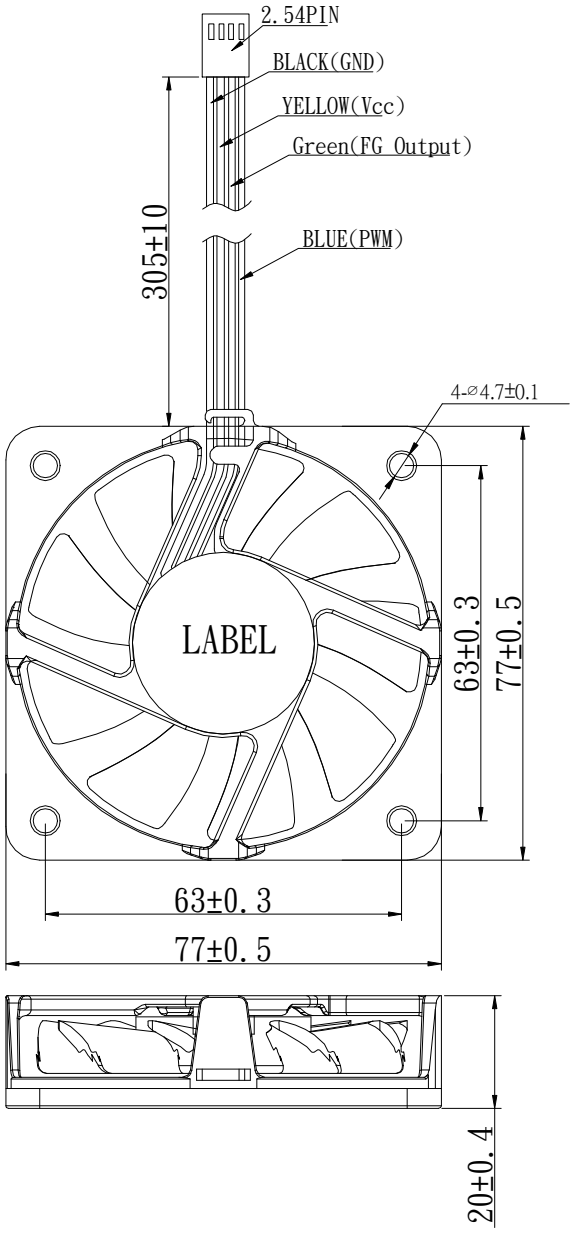
5. PROTECTION

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 con dition at rated voltage.

ATTACHMENTS

a. Product Dimension
b..Electrical Specifications for PWM production

DIMENSIONS



UNIT: MM

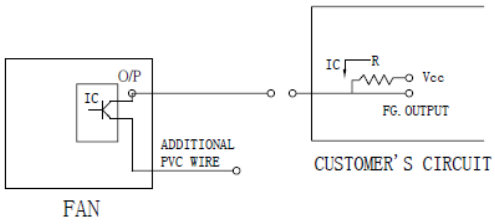
1.LEAD WIRE:1007#28AWG 80°C 300V UL,CSA APPROVAL

TOP MOTOR TECHNOLOGY(HUIZHOU)CO,LTD TOP MOTOR	DF127720BH		Tolerance	Vide Supra	Approval	--
			Unit	mm	Check	--
			Edition	1.0	Initiator	--
	Drawing Type	Dimensions	Remark		Date	2008.07.19

6.2. Frequency Generator Output

FREQUENCY GENERATOR O/P:

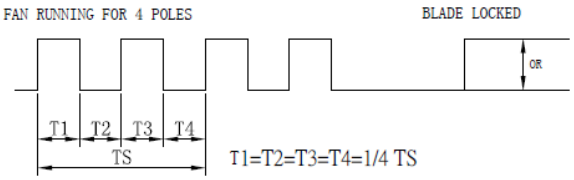
Frequency generator function is activated by an internal IC for customer's application.
Electrical schematic:



CUSTOMER'S CIRCUIT

Vcc = From +5 To +28 VDC (Generally using +12 or +24 VDC)
Ic = 5 mA max.
R = V/I (Output "R" value calculation)

- **SUPPLY A WAVEFORM:**

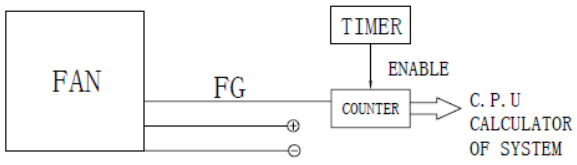


N=R.P.M. (Rotation speed will be different for various models L/M/H/HH/VH/SH)
TS=60/N (Sec)
* Voltage level after blade locked

- **OUTPUT LEVEL:**

High = Vcc 10%
Low = 0~0.5V
Ic = 5 mA max.

- **APPLICATION:**



- **FUNCTIONS:**

. By means of waveform & customer's design, schematic can reach alarm function, either in the form of buzzing or LED flashing. Adjust rotation speed.
. When power supply output voltage level decreases, it will result in the lowering of fan rotation speed. The irregular situation will be controlled by using FG. O/P through P/S circuit to increase the output voltage and result in a stable rotation speed.

6.3. TUV Certificate

Zertifikat ***Certificate***

TÜV

Zertifikat Nr. *Certificate No.*
R 50064443

Blatt *Page*
0007

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
12046290/LC Tech	ZTW1-CCO- 10013649 006	07.05.2007	

Genehmigungsinhaber *License Holder*
Dynaeon Industrial Co., Ltd.
8F, No. 35, 37, Lane 221
Gang Cian Rd.
Neihu, Taipei 114
Taiwan, R.O.C.

Fertigungsstätte *Manufacturing Plant*
Dynaeon Ind. Co., Ltd.
Ta-Li Management Zone
Ching-Hsi, Dongguan
P.R. China

Prüfzeichen *Test Mark*
TÜV Rheinland Product Safety | BAUART GEPRÜFT | TYPE APPROVED

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11

Zertifiziertes Produkt (Geräteidentifikation) **Lizenzentgelte - Einheit**
Certified Product ***(Product Identification)*** ***License Fee - Unit***

Ventilator (DC Fan)

wie Blatt (as page) 01
Ergänzung (Addition)

Bezeichnung : DF(X1)(X2)(X3)(X4)(X5)ZZZZZ-(X6)
(Type Designation)
(X1) steht für (stands for): 05, 12, 24
(X2) steht für (stands for): 12, 14, 15, 25, 40, 50, 60, 70, 77, 80, 92 — 1
(X3) steht für (stands for): 10, 15, 20, 25, 28 — 1
(X4) steht für (stands for): S, B, P, Q
(X5) steht für (stands for): U, H, M, L, E
(X6) steht für (stands for): A, B, C, D — 1
Z steht für (stands for): A-Z, 0-9 oder (or) freibleibend (blank)
Nennspannung (Rated Voltage) : DC 5V ((X1)= 05); DC 12V ((X1)= 12); DC 24V ((X1)= 24)
Nennstrom (Rated Current) : siehe Anlage (see appendix)

TÜV Rheinland Product Safety GmbH — TÜV Rheinland — Zertifizierungsstelle — 3

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. F. Stoelzel

6.4.UL Certificate

ONLINE CERTIFICATIONS DIRECTORY

GPWV2.E157868
Fans, Electric - Component

Page Bottom

Fans, Electric - Component

See General Information for Fans, Electric - Component

DYNAEON INDUSTRIAL CO LTD E157868
8TH FL 35 LANE 221 GANGCIAN RD
NEIHU DIST
TAIPEI, 114 TAIWAN

DC fans, Models D(F)1206(Z)(Y1)(X1), D(F)1207(Z)(Y1)(X1), where (F) may be F or C, (Z) may be SH, BH, BA, SM, BM, BB, SL, BL, BC, SD, BE, BF, SG, BI, BJ, SK, BN, BO, SP, BQ, BR, SS, BT, BU, SV, BW, BX, SY, BY or BZ, (Y1) may be "-", 0 through 9 or A through Z, (X1) may be 0 through 9 or A through Z.

Models DF248015(S)(X)(Y)(Z)(W), DF488015(S)(X)(Y)(Z)(W), where (S) may be S, B or P, (X) may be U, H, M or L, (Y) and (Z) may be any alphanumeric character, blank, "-" or any symbol, (W) may be seven any alphanumeric character, blank, "-" or any symbol.

Models DF121225(A)(B)(C), DF121225(A)E(C), DF241225(A)(B)(C), DF128015(A)U(C), DF128015(A)(B)(C), DF128025(A)U(C), DF128025(A)(B)(C), DF128025(A)E(C), DF248025(A)U(C), DF248025(A)(B)(C), DF129225(A)(B)(C), DF129225(A)E(C), DF249225(A)U(C), DF249225(A)(B)(C), DF126010(A)(B)(C), DF246025(A)U(C), DF246025(A)(B)(C), DF126025(A)U(C), DF126025(A)(B)(C), DF126025(A)E(C), DB126015BU(C), DB126015B(B)(C), DF123010(A)(B)(C), DF053010(A)(B)(C), DF127015(A)U(C), DF127015(A)(B)(C), DF245010(A)(B)(C), where (A) may be S, B, P or Q, (B) may be H, M or L, (C) may be xxxxxxxxx, where x may be A through Z, 0 through 9, "-" or blank.

Models DF122510(X)(Y2)(Z)-(M), DF124020(X)(Y2)(Z)-(M), DF244020(X)(Y1)(Z)-(M), DF126025(X)(Y3)(Z)-(M), DF246025(X)(Y3)(Z)-(M), DF121225(X)(Y1)(Z)-(M), DF124028(X)(Y3)(Z)-(M), where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be U, H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank, (M) may be A or B.

Models DF054010(X)(Y2)(Z1)(Z2)-A, DF054010(X)L(Z1)(Z2)-B, DF124010(X)(Y2)(Z1)(Z2)-A, DF124010(X)L(Z1)(Z2)-B, DF244010(X)(Y2)(Z1)(Z2)-A, DF125015(X)(Y1)(Z1)(Z2)-A, DF125020(X)(Y3)(Z1)(Z2)-A, DF126015(X)(Y1)(Z1)(Z2)-A, DF246015(X)M(Z1)(Z2)-A, DF246015(X)L(Z1)(Z2)-A, DF128020(X)(Y1)(Z1)(Z2)-A, DF128020(X)L(Z1)(Z2)-B, DB127015(X)(Y2)(Z)-A series, where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be H, M, L or E, (Z1) may be blank or 3, (Z2) is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF125010(X)(Y)(Z)-A, DF126020(X)(Y)(Z)-A, DF246020(X)(Y)(Z)-A, DF121525(X)(Y1)(Z)-A, DF121525(X)(Y2)(Z)-B series, Where (X) may be S, B, P or Q, (Y) may be H, M or L, (Y1) may be U, H or M, (Y2) may be L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 th1rough 9 or blank.

Models DF128025(X)(a)(Y)-A, DF121225(X)(b)(Y)-C, DF121225(X)E(Y)-C, DF127720(X)(a)(Y)-A, DF121425(X)(c)(Y)-A, DF126010(X)E(Y)-A series, where (X) may be S, B, P, Q, (a) may be H, M, L or E, (b) may be M or L, (c) may be U, H, M, L or E, (Y) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF054010(X)(Y1)(Z1)(Z2)-C, DF124010(X)(Y2)(Z1)(Z2)-C, DF244010(X)(Y2)(Z1)(Z2)-C, DF124020BU(Z1)(Z2)-C, DF124020(X)(Y1)(Z1)(Z2)-C, DF124028BU(Z1)(Z2)-C, DF124028(X)(Y1)(Z1)(Z2)-C, DF126025BU(Z1)(Z2)-C, DF126025(X)(Y1)(Z1)(Z2)-C, DF127015BU(Z1)(Z2)-A, DF127015(X)(Y1)(Z1)(Z2)-A, DF128025BU(Z1)(Z2)-B, DF128025(X)(Y1)(Z1)(Z2)-B, DF129225BU(Z1)(Z2)-A, DF129225(X)(Y1)(Z1)(Z2)-A, DF121225BU(Z1)(Z2)-D, DF121225(X)(Y1)(Z1)(Z2)-D, DF121425(X)(Y1)(Z1)(Z2)-B, DB127015BU(Z1)(Z2)-B, DB127015(X)(Y1)(Z1)(Z2)-B, DB058015(X)(Y3)(Z1)(Z2)-A, where (X) may be S, B, P or Q, where(Y1) may be H, M, L or E, where (Y2) may be U, H, M, L or E, where (Y3) may be M or L, where (Z1) may be blank or 3, where (Z2) may be is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DB128015(X)(Y1)-(Z)-A, DF128038(X)(Y1)-(Z)-A, DB121225(X)(Y2)-(Z)-A, DF054010(X)(Y2)-(Z)-D, DF124010(X)(Y3)-(Z)-D, DF244010(X)(Y4)-(Z)-D, DF125010(X)(Y2)-(Z)-B, DF126010(X)(Y5)-(Z)-B series, where (X) may be S, B, P, Q, (Y1) may be U, H, M, L or E, (Y2) may be H, M or L, (Y3) may be U, M, L or E, (Y4) may be U, H, M or L, (Y5) may be H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Series 7515: Models DB127515(X)U-ZZZZZ-(A), DB127515(X)H-ZZZZZ-(A), DB127515(X)M-ZZZZZ-(A), DB127515(X)L-ZZZZZ-(A).

Series 9225: Models DF129225(X)U-ZZZZZ-(A), DF129225(X)H-ZZZZZ-(A), DF129225(X)M-ZZZZZ-(A), DF129225(X)L-ZZZZZ-(A).

Models DB128015(X)(Y)-(Z)-B and DF126028(X)(W)-(Z)-A series, where (X) may be S, B, P or Q; (Y) may be U, H, M or L; (W) may be U, H, M, L or E; (Z) stands for five variables, each may be A through Z, 0 through 9 or blank.

Model DF124028(X)(Y)-(Z)-D, where (X) may be S, B, P or Q; (Y) may be U, H, M, L, E; (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Electric fans, Models DC0504, -1204, -1205, -1206 , DF1204, -1208, -2408, -0504, -0505, -1205, -2406 followed by "S" or "B", followed by two alphanumeric characters.

Low voltage fans, Models DB1206, DF1209, -1212, -2409, DH1204 followed by B or S, followed by two alphanumeric characters.

Models DF124056(X)(Y)-(Z)-(Z1), DF126038(X)(Y)-(Z)-(Z1), DB129015(X)(Y)-(Z)-(Z1) and DB129215(X)(Y)-(Z)-(Z1); where (X) may be S, B, P, Q; (Y) may be U, H, M, L, E; (Z) may be a through Z, 0 through 9 or blank; (Z1) may be A, B, C or D.

Marking: Company name or trademark TOP MOTOR and model designation.

Last Updated on 2015-10-06

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GPWV8.E157868
Fans, Electric Certified for Canada - Component

Page Bottom

Fans, Electric Certified for Canada - Component

See General Information for Fans, Electric Certified for Canada - Component

DYNAEON INDUSTRIAL CO LTD E157868
8TH FL 35 LANE 221 GANGCIAN RD
NEIHU DIST
TAIPEI, 114 TAIWAN

DC fans, Models D(F)1206(Z)(Y1)(X1), D(F)1207(Z)(Y1)(X1), where (F) may be F or C, (Z) may be SH, BH, BA, SM, BM, BB, SL, BL, BC, SD, BE, BF, SG, BI, BJ, SK, BN, BO, SP, BQ, BR, SS, BT, BU, SV, BW, BX, SY, BY or BZ, (Y1)may be "-", 0 through 9 or A through Z, (X1) may be 0 through 9 or A through Z.

Models DF248015(S)(X)(Y)(Z)(W), DF488015(S)(X)(Y)(Z)(W), where (S) may be S, B or P, (X) may be U, H, M or L, (Y) and (Z) may be any alphanumeric character, blank, "-" or any symbol, (W) may be seven any alphanumeric character, blank, "-" or any symbol.

Models DF121225(A)(B)(C), DF121225(A)E(C), DF241225(A)(B)(C), DF128015(A)U(C), DF128015(A)(B)(C), DF128025(A)U(C), DF128025(A)(B)(C), DF128025(A)E(C), DF248025(A)U(C), DF248025(A)(B)(C), DF129225(A)(B)(C), DF129225(A)E(C), DF249225(A)U(C), DF249225(A)(B)(C), DF126010(A)(B)(C), DF246025(A)U(C), DF246025(A)(B)(C), DF126025(A)U(C), DF126025(A)(B)(C), DF126025(A)E(C), DB126015BU(C), DB126015B(B)(C), DF123010(A)(B)(C), DF053010(A)(B)(C), DF127015(A)U(C), DF127015(A)(B)(C), DF245010(A)(B)(C), where (A) may be S, B, P or Q, (B) may be H, M or L, (C) may be xxxxxxxxx, where x may be A through Z, 0 through 9, "-" or blank.

Models DF122510(X)(Y2)(Z)-(M), DF124020(X)(Y2)(Z)-(M), DF244020(X)(Y1)(Z)-(M), DF126025(X)(Y3)(Z)-(M), DF246025(X)(Y3)(Z)-(M), DF121225(X)(Y1)(Z)-(M), DF124028(X)(Y3)(Z)-(M), where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be U, H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank, (M) may be A or B.

Models DF054010(X)(Y2)(Z1)(Z2)-A, DF054010(X)L(Z1)(Z2)-B, DF124010(X)(Y2)(Z1)(Z2)-A, DF124010(X)L(Z1)(Z2)-B, DF244010(X)(Y2)(Z1)(Z2)-A, DF125015(X)(Y1)(Z1)(Z2)-A, DF125020(X)(Y3)(Z1)(Z2)-A, DF126015(X)(Y1)(Z1)(Z2)-A, DF246015(X)M(Z1)(Z2)-A, DF246015(X)L(Z1)(Z2)-A, DF128020(X)(Y1)(Z1)(Z2)-A, DF128020(X)L(Z1)(Z2)-B, DB127015(X)(Y2)(Z)-A series, where (X) may be S, B, P, Q, (Y1) may be H, M or L, (Y2) may be U, H, M or L, (Y3) may be H, M, L or E, (Z1) may be blank or 3, (Z2) is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF125010(X)(Y)(Z)-A, DF126020(X)(Y)(Z)-A, DF246020(X)(Y)(Z)-A, DF121525(X)(Y1)(Z)-A, DF121525(X)(Y2)(Z)-B series, Where (X) may be S, B, P or Q, (Y) may be H, M or L, (Y1) may be U, H or M, (Y2) may be L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 th1rough 9 or blank.

Models DF128025(X)(a)(Y)-A, DF121225(X)(b)(Y)-C, DF121225(X)E(Y)-C, DF127720(X)(a)(Y)-A, DF121425(X)(c)(Y)-A, DF126010(X)E(Y)-A series, where (X) may be S, B, P, Q, (a) may be H, M, L or E, (b) may be M or L, (c) may be U, H, M, L or E, (Y) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DF054010(X)(Y1)(Z1)(Z2)-C, DF124010(X)(Y2)(Z1)(Z2)-C, DF244010(X)(Y2)(Z1)(Z2)-C, DF124020BU(Z1)(Z2)-C, DF124020(X)(Y1)(Z1)(Z2)-C, DF124028BU(Z1)(Z2)-C, DF124028(X)(Y1)(Z1)(Z2)-C, DF126025BU(Z1)(Z2)-C, DF126025(X)(Y1)(Z1)(Z2)-C, DF127015BU(Z1)(Z2)-A, DF127015(X)(Y1)(Z1)(Z2)-A, DF128025BU(Z1)(Z2)-B, DF128025(X)(Y1)(Z1)(Z2)-B, DF129225BU(Z1)(Z2)-A, DF129225(X)(Y1)(Z1)(Z2)-A, DF121225BU(Z1)(Z2)-D, DF121225(X)(Y1)(Z1)(Z2)-D, DF121425(X)(Y1)(Z1)(Z2)-B, DB127015BU(Z1)(Z2)-B, DB127015(X)(Y1)(Z1)(Z2)-B, DB058015(X)(Y3)(Z1)(Z2)-A, where (X) may be S, B, P or Q, where (Y1) may be H, M, L or E, where (Y2) may be U, H, M, L or E, where (Y3) may be M or L, where (Z1) may be blank or 3, where (Z2) may be is alphanumeric combination of four digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Models DB128015(X)(Y1)-(Z)-A, DF128038(X)(Y1)-(Z)-A, DB121225(X)(Y2)-(Z)-A, DF054010(X)(Y2)-(Z)-D, DF124010(X)(Y3)-(Z)-D, DF244010(X)(Y4)-(Z)-D, DF125010(X)(Y2)-(Z)-B, DF126010(X)(Y5)-(Z)-B series, where (X) may be S, B, P, Q, (Y1) may be U, H, M, L or E, (Y2) may be H, M or L, (Y3) may be U, M, L or E, (Y4) may be U, H, M or L, (Y5) may be H, M, L or E, (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Series 7515: Models DB127515(X)U-ZZZZZ-(A), DB127515(X)H-ZZZZZ-(A), DB127515(X)M-ZZZZZ-(A), DB127515(X)L-ZZZZZ-(A).

Series 9225: Models DF129225(X)U-ZZZZZ-(A), DF129225(X)H-ZZZZZ-(A), DF129225(X)M-ZZZZZ-(A), DF129225(X)L-ZZZZZ-(A).

Models DB128015(X)(Y)-(Z)-B and DF126028(X)(W)-(Z)-A series, where (X) may be S, B, P or Q; (Y) may be U, H, M or L; (W) may be U, H, M, L or E; (Z) stands for five variables, each may be A through Z, 0 through 9 or blank.

Model DF124028(X)(Y)-(Z)-D, where (X) may be S, B, P or Q; (Y) may be U, H, M, L, E; (Z) is alphanumeric combination of five digits and/or alphabets, may be A through Z, 0 through 9 or blank.

Electric fans, Models DC0504, -1204, -1205, -1206 , DF0504, -0505, -1204, -1205, -1208, -2406, -2408 followed by "S" or "B", followed by two alphanumeric characters.

Low voltage fans, Models DB1206, DF1209, -1212, -2409, DH1204 followed by B or S, followed by two alphanumeric characters.

Models DF124056(X)(Y)-(Z)-(Z1), DF126038(X)(Y)-(Z)-(Z1), DB129015(X)(Y)-(Z)-(Z1) and DB129215(X)(Y)-(Z)-(Z1); where (X) may be S, B, P, Q; (Y) may be U, H, M, L, E; (Z) may be a through Z, 0 through 9 or blank; (Z1) may be A, B, C or D.

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6.5. Electrical Specifications for PWM production

USA Dynatron Corp.

Electrical Specifications for PWM production

Voltage

Fan operating voltage shall be whthin the range 12V+/-1.2V.

Current

Peak fan current draw during start-up operation(with 13.2V applied,with fan operating in the free stream condifion)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 cnnector: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 S peed Requirements

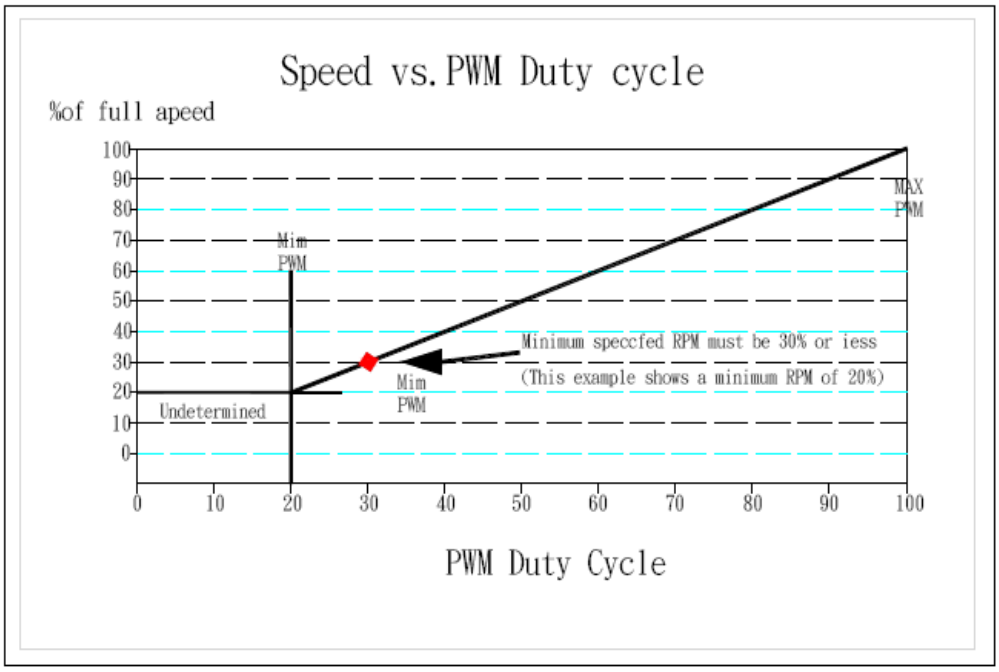
The vendor shall specify the minimum RPM and the corresponding PWM duty cycle. This specified minimum RPM shall be 30% of maximum RPM or less.The fan shall be able to start and run at this RPM. To allow a lower specified minimum RPM,it is acceptable to provide a higher PWM duty cycle to the fan motor 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.

USA Dynatron Corp.

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 ±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 floolw ing graphs and definitions show three recommended solutions to handle PWM duty cycles that are less than the minimum operational PRM,as a percentage of maximum.

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

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環保證明書

Document Number: RH-Q10-R0

Customer: 客戶名稱:	***Company:*** ***Address:*** _____ ***Phone Number:*** _____ - _____ - _____
Issue Date: 發行日期:	09/15/2022
Product Model Number: 產品號碼:	Q10

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