SPECIFICATION FOR APPROVAL FOR REFERENCE

CUSTOMER : TBD

DESCRIPTION : AXIAL FAN

DIMENSIONS : 120*120*25.4mm

PEAK MODEL : A1225EBMNG2400ST

PEAK PART NO. : CF122500TF0000M0

VERSION : X0

Please send us back one copy as soon as you affirmed this specification, With your signed approval in order to make quick arrangement for product

Issued:	Checked:	Approved:	Customer Approved:	ISSUE DATE	2024.03.13
Yangyang.Xu	Andy.Li Linguang.Song	Hank.He		REVISION DATE	

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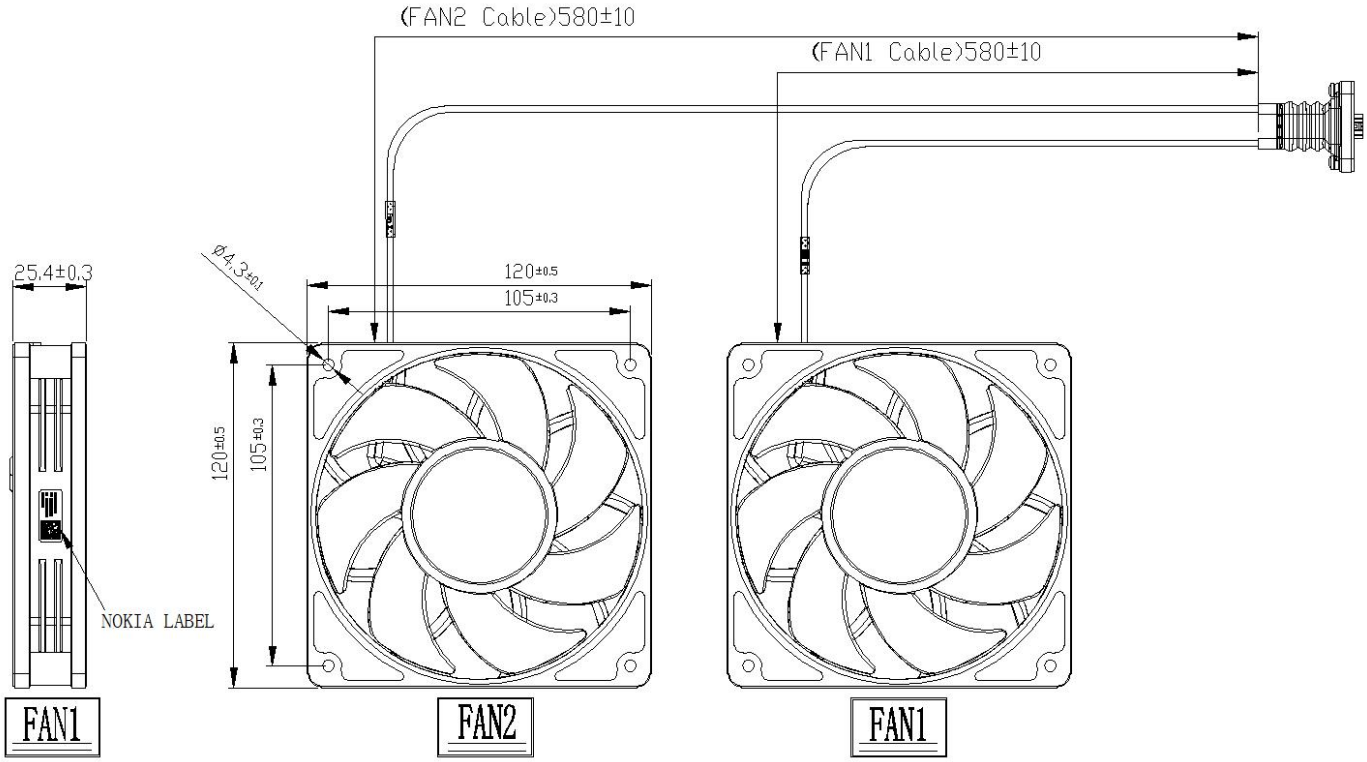
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1. **SCOPE:**THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS FAN.
2. **CHARACTERS:**

ITEMS	DESCRIPTION		
BEARING SYSTEM	Ball Bearing		
DIRECTION OF ROTATION	Counterclockwise(viewed from the label side)		
MATERIALS OF FRAME	THERMOPLASTIC UL:94V-0		
MATERIALS OF FAN BLADE	THERMOPLASTIC UL:94V-0		
RATED VOLTAGE	48 VDC		
MINIMUM STARTING VOLTAGE	36VDC		
OPERATION VOLTAGE	36~60 VDC		
RATED CURRENT (IN FREE AIR)	300mA（450mA MAX）		
RATED POWER (IN FREE AIR)	14.4W (21.6W MAX)		
CURRENT ON LABEL (IN FREE AIR)	450mA		
SPEED (IN FREE AIR)/0% Duty	4500±5% RPM		
SPEED CONTROL TYPE	PWM CONTROLLER		
SIGNAL OUTPUT	FREQUENCY GENERATOR (FG)		
AIR FLOW(AT ZERO STATIC PRESSURE)	152CFM	258m³/ h	
AIR PRESSURE(AT ZERO AIRFLOW)	19.5 mm-H2O	193 Pa	0.767 inch
ACOUSTIC NOISE	57 (Max : 60) dB - A		
INSULATION RESISTANCE	10 MEGA OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)		
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 60Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)		
LIFE EXPECTANCE(L10)	L10 ＞ 120000h at fan ambient +50degC and 65% of full rpm.		
IP PROTECTION LEVEL IP	IP68		
OPERATING TEMPERATURE	-40 TO +85 °C		
STORAGE TEMPERATURE	-40 TO +85 °C		
OPERATING HUMIDITY	5 TO 90 % RH		
STORAGE HUMIDITY	5 TO 95 % RH		
WEIGHT	600±10g (REF.)		

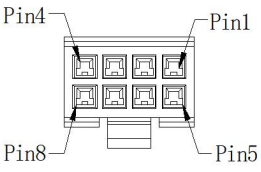
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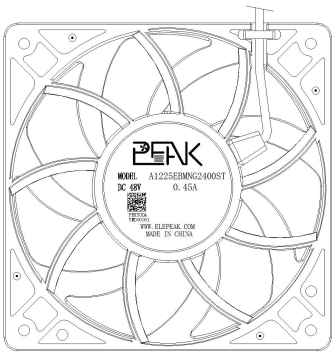
DIMENSION DRAWING



Connection:

CN1	Signal	Description	Color
1	FAN1_PWM	PWM(CTRL)	Green
2	FAN1_RPM	TACHO(RPM)	White
3	FAN2_PWM	PWM(CTRL)	Green
4	FAN2_RPM	TACHO(RPM)	White
5	GND	+ Voltage input FAN1	Red
6	FAN1_-48V	- Voltage input FAN1	Black
7	GND	+ Voltage input FAN2	Red
8	FAN2_-48V	- Voltage input FAN2	Black





1. HOUSING：MOLEX Code 43025-0800
2. TERMINAL: MOLEX Code 43030-0003
3. LEAD WIRE: 2517 24AWG OD=φ5±0.5
4. FRAME TYPE: RIB
5. UNITS: mm
6. THIS PRODUCT IS RoHS COMPLIANT

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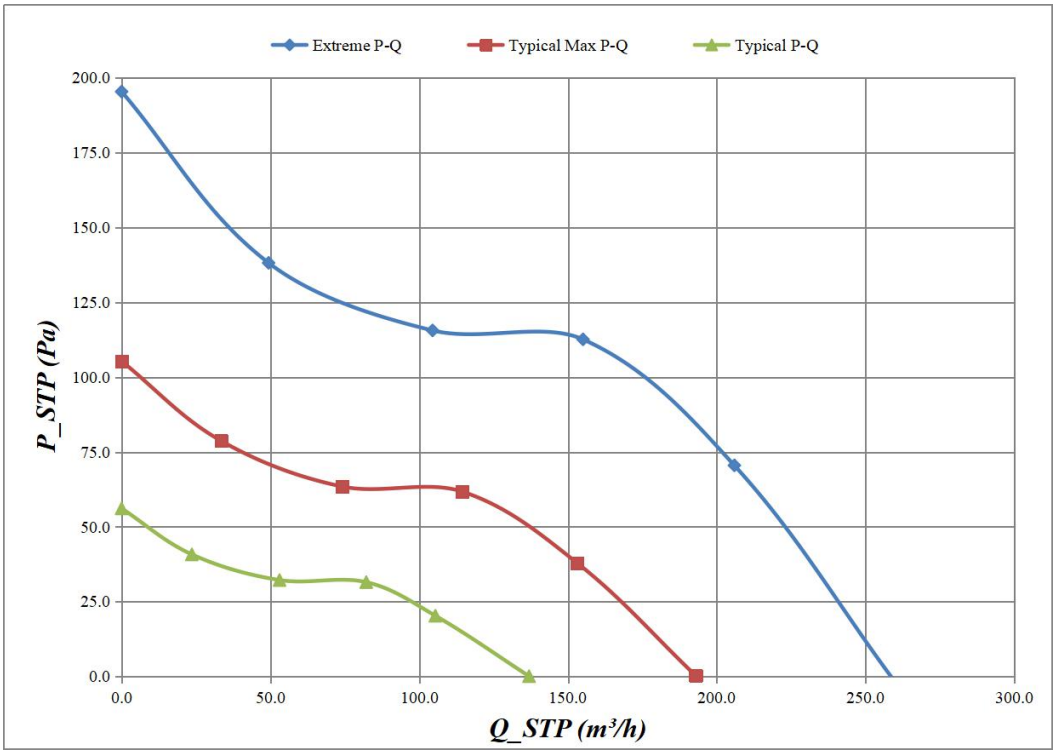
LABEL



Model name	Dimension	Voltage	Safety
A1225EBMNG2400ST	Φ47	48 V	TUV、UL、CE、UKCA

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PQ CURVE

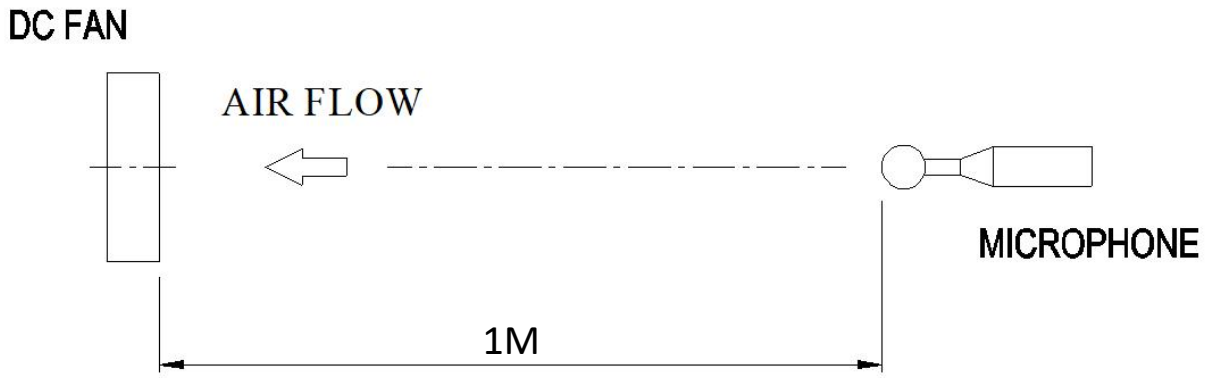


TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE
TEMPERATURE-----ROOM TEMPERATURE
HUMIDITY-----65%RH

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ACOUSTIC NOISE MEASURING

MEASURED IN A SEMI-ANECHOIC CHAMBER WITH BACKGROUND NOISE LEVEL BELOW 18dB(A)



1 METER FROM MICROPHONE TO FAN INTAKE

THE FAN IS RUNNING IN FREE AIR UNDER SHAFT HORIZONTAL CONDITION WITH THE MICROPHONE AT DISTANCE OF 1 METER FROM THE FAN INTAKE.

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SPEED CONTROL FUNCTION

❖ PWM SIGNAL DESCRIPTION

1. CONTROL SIGNAL: PWM CONTROL

2. THE RANGE OF SIGNAL VOLTAGE: LOW LEVEL VOLTAGE: MIN. >0V , MAX.<0.8V
HIGH LEVEL VOLTAGE: MIN. >2.0V， MAX≤60V

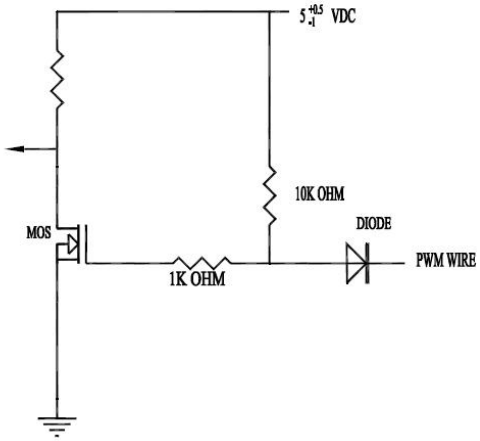
3.THE FREQUENCY OF PWM SIGNAL SHALL BE ABLE TO ACCEPT 1KHZ~50KHZ

❖FAN SPEED CONTROL DESCRIPTION

1. FAN INPUT VOLTAGE (POSITIVE) :48VDC
2. PWM FREQUENCY :1~5KHZ
3. THE FAN SPEED WILL SPIN AT MAXIMUM WHEN THE DUTY CYCLE IS 0%.
4. THE FAN SPEED WILL SPIN AT 0~4500 RPM WHEN THE DUTY CYCLE IS 100%~0%
5. THE FAN SPEED WILL SPIN AT MINMUM WHEN THE LEAD WIRE OF PWM SIGNAL DISCONNECTED（FAN SHUTDOWN&100%duty）.
6. THE FAN WILL BE ABLE TO START WHEN THE DUTY CYCLE IS 80% .

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❖ PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



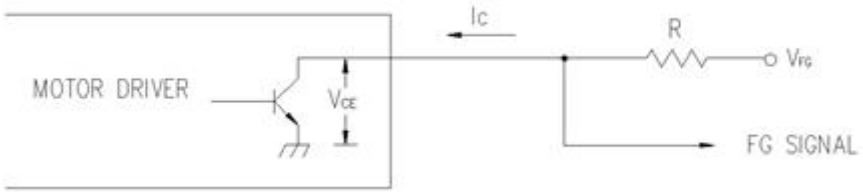
❖ PWM DUTY CYCLE VS. RPM(AT Ta=25°C)

Duty Cycle (%)	R.P.M(REF.)	Current(A)
0	4500±5%	0.30
50	2400±10%	0.06
100	0	0.02

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FREQUENCY GENERATOR (FG) SIGNAL

❖ SCHEMATIC



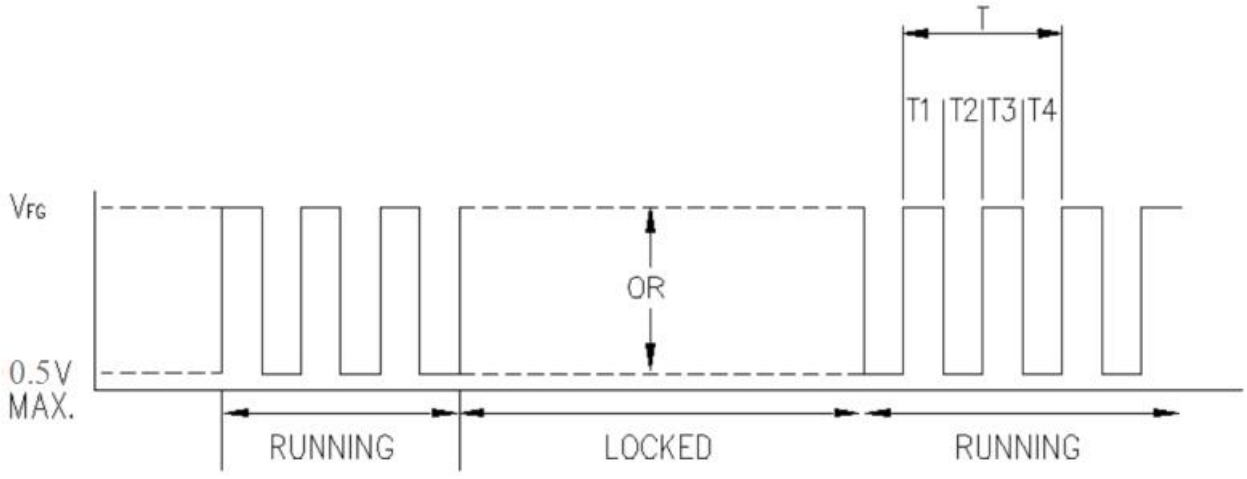
CAUTION:

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

❖ SIGNAL SPECIFICATION

OUTPUT TYPE: OPEN COLLECTOR
VFG MAXIMUM VOLTAGE = 60V
IC MAXIMUM CURRENT =10mA
LOW LEVEL VOLTAGE = 0.5V MAX.
R ≥ VFG / IC

❖ THE WAVEFORM FOR ROTATION DETECTOR:



T=T1+T2+T3+T4=60/N (Sec) N: SPEED (RPM)

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PRODUCT SAFETY INSTRUCTIONS

1. PLEASE DON'T USE THIS PRODUCT BEYOND THIS SPECIFICATION RANGE, IT MAY CAUSE PRODUCT'S BREAKDOWN.
2. BE CAREFUL WITH INSTALLING PRODUCT IN YOUR MACHINE, HIT, DROP, SHAKE MAY CAUSE PRODUCT'S MECHANISM PROBLEM.
3. DO NOT PRESS THE FAN BLADES OR HUB WHEN HANDLING THE FAN, AVOID CUSHING THE FRAME SIDE AND HITTING/PRESSING THE FAN BASE, DO NOT PULL OUT THE ROTOR/BLADES.
4. MAKE SURE THAT V(+) AND GND ARE CONNECTED CORRECTLY, OTHERWISE FAN WILL NOT START UP.
5. TOUCH IMPELLER DURING OPERATING WILL CAUSE INJURY OR FAN'S FAILURE, MAKE SURE FAN IS OPERATING ON ENVIRONMENT WITHOUT LOCKING POSSIBILITY.
6. AVOID PULLING CABLE WHEN TAKING THE FAN, IT MAY CAUSE ELECTRIC/BEARING FAILURE.
7. FANS MUST BE INSTALLED CORRECTLY, IMPROPER MOUNTING MAY CAUSE SEVERE RESONNANCE ,VIBRATION AND NOISE.
8. THE "LIFE EXPECTANCY OF THIS FAN HAS NOT BEEN EVALUATED FOR USE IN COMBINATION WITH ANY END APPLICATION. THEREFORE, THE LIFE EXPECTANCY TEST REPORTS(L10 AND MTTF REPORT) THAT RELATE TO THIS FAN ARE ONLY FOR REFERENCE.
9. THIS FAN IS WARRANTED AGAINST ALL DEFECTS WHICH ARE PROVED TO BE FAULT IN OUR WORKMANSHIP AND MATERIAL FOR ONE YEAR FROM THE DATE OF OUR DELIVERY. THE SOLE RESPONSIBILITY UNDER THE WARRANTY SHALL BE LIMITED TO THE REPAIR OF THE FAN OR THE REPLACEMENT THEREOF, AT PEAK SOLE DISCRETION. PEAK WILL NOT BE RESPONSIBLE FOR THE FAILURES OF ITS FANS DUE TO IMPROPER HANDLING, MISUSE OR THE FAILURE TO FOLLOW SPECIFICATIONS OR INSTRUCTIONS FOR USE. IN THE EVENT OF WARRANTY CLAIM, THE CUSTOMER SHALL IMMEDIATELY NOTIFY PEAK FOR VERIFICATION. PEAK WILL NOT BE RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGE TO THE CUSTOMER'S EQUIPMENT AS A RESULT OF ANY FANS PROVEN TO BE DEFECTIVE.

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