SPECIFICATION FOR APPROVAL FOR REFERENCE

CUSTOMER : **TBD**

DESCRIPTION : **AXIAL FAN**

DIMENSIONS : **92mm*92mm*38mm**

PEAK MODEL : **A9238CBMNG2300TR**

PEAK PART NO. : **CF923800RF0001A0**

VERSION : **A0**

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	2024.07.17
Chaomin.Yuan	Yangyang.Xu	Andy.Li		REVISION DATE	

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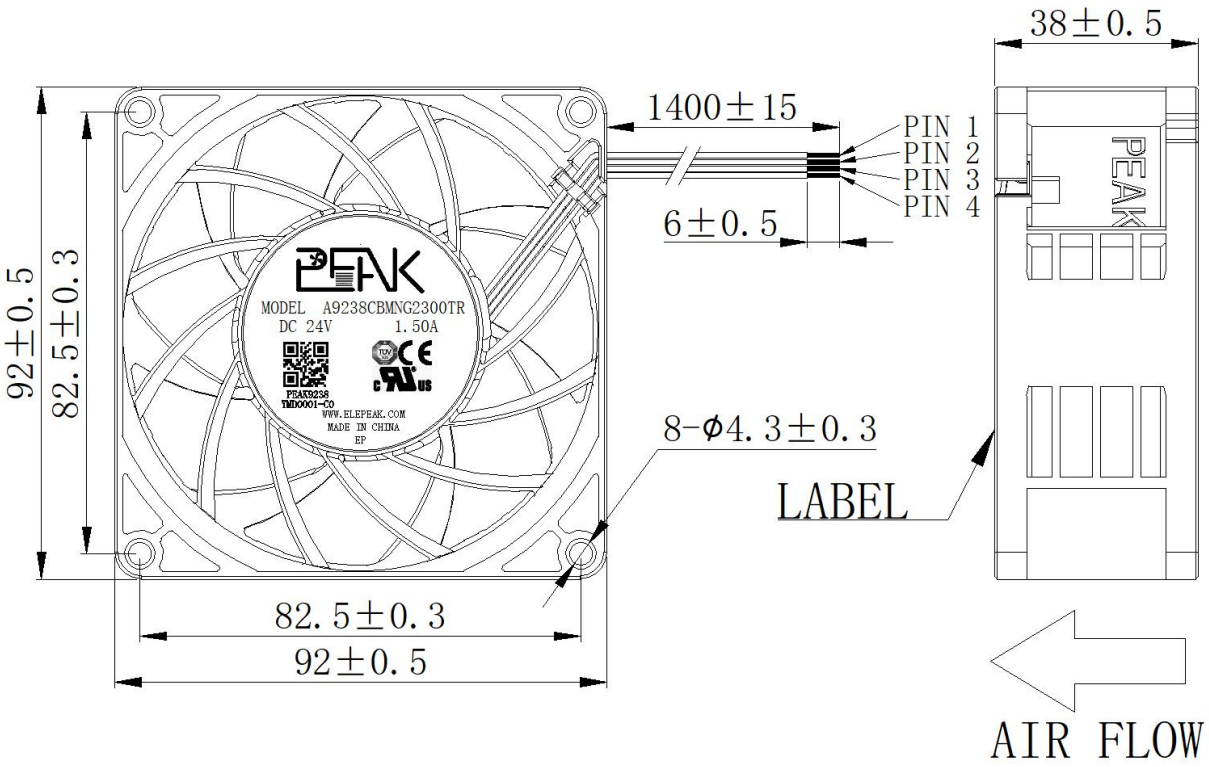
1. SCOPE: THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS FAN.

2.CHARACTERS:

ITEMS	DESCRIPTION	
BEARING SYSTEM	Ball Bearing	
DIRECTION OF ROTATION	Clockwise(viewed from the label side)	
MATERIALS OF FRAME	THERMOPLASTIC UL:94V-0	
MATERIALS OF FAN BLADE	THERMOPLASTIC UL:94V-0	
RATED VOLTAGE	24V	
MINIMUM STARTING VOLTAGE	18V (25℃ POWER ON/OFF)	
OPERATION VOLTAGE	18~27.6V	
RATED CURRENT (IN FREE AIR)	1.25 (MAX. 1.50) A	
RATED POWER (IN FREE AIR)	30 (MAX.36) W	
CURRENT ON LABEL (IN FREE AIR)	1.50A	
SPEED (IN FREE AIR)/100% Duty	10800±10% RPM	
SPEED CONTROL TYPE	PWM CONTROLLER	
SIGNAL OUTPUT	FREQUENCY GENERATOR (FG)	
AIR FLOW(AT ZERO STATIC PRESSURE)	152(Min : 136) CFM	258(Min : 232) m^3/ h
AIR PRESSURE(AT ZERO AIRFLOW)	69(Min : 55) mm-H2O	676 (Min : 547) Pa
	2.716 (Min : 2.200) inch	
ACOUSTIC NOISE	66.5 (Max: 70.5)dB-A	
INSULATION RESISTANCE INSULATION TYPE	10 MEGA OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+ - FG PWM) TERMINAL) CLASS A	
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 60Hz ONE MINUTE, (BETWEEN FRAME AND (+ - FG PWM) TERMINAL)	
LIFE EXPECTANCE(L10)	70000HRS AT 40°C ROOM,HUMIDITY 15%~65%RH	
IP PROTECTION LEVEL IP	IP68	
OPERATING TEMPERATURE	-40 TO +70 °C	
STORAGE TEMPERATURE	-40 TO +75 °C	
OPERATING HUMIDITY	5 TO 90 % RH	
STORAGE HUMIDITY	5 TO 95 % RH	
WEIGHT	277g (REF.)	

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DIMENSION DRAWING



NOTES:

1. LEAD WIRE: UL10368 AWG#22
   PIN1:RED WIRE ------ (+)
   PIN2:BLACK WIRE ------ (-)
   PIN3:WHITE WIRE ------ (FG)
   PIN4:BROWN WIRE ------ (PWM)
2. FRAME TYPE: FLANGE
3. UNITS: mm
4. THIS PRODUCT IS RoHS COMPLIANT

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LABEL

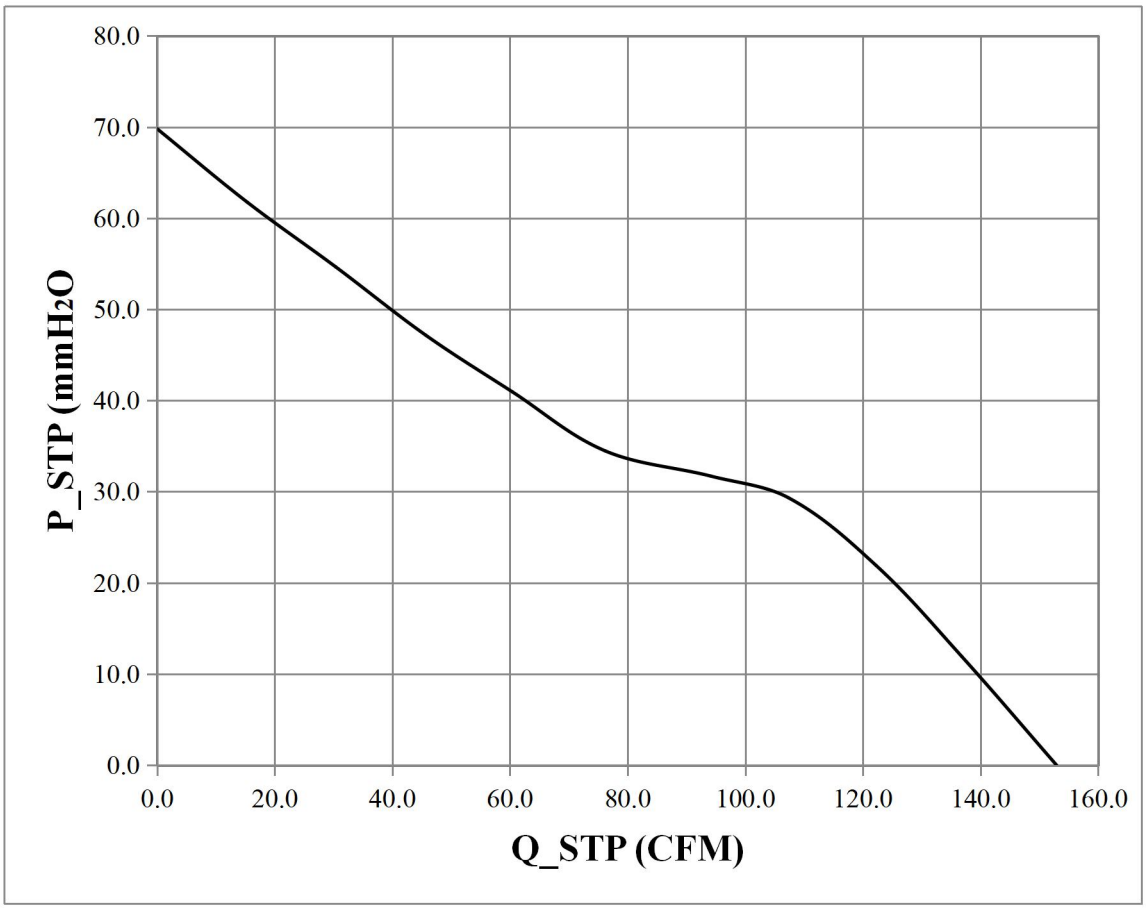


Model name	Dimension	Voltage	Safety
A9238CBMNG2300TR	Φ44	24 V	UL、TUV、CE

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PQ CURVE

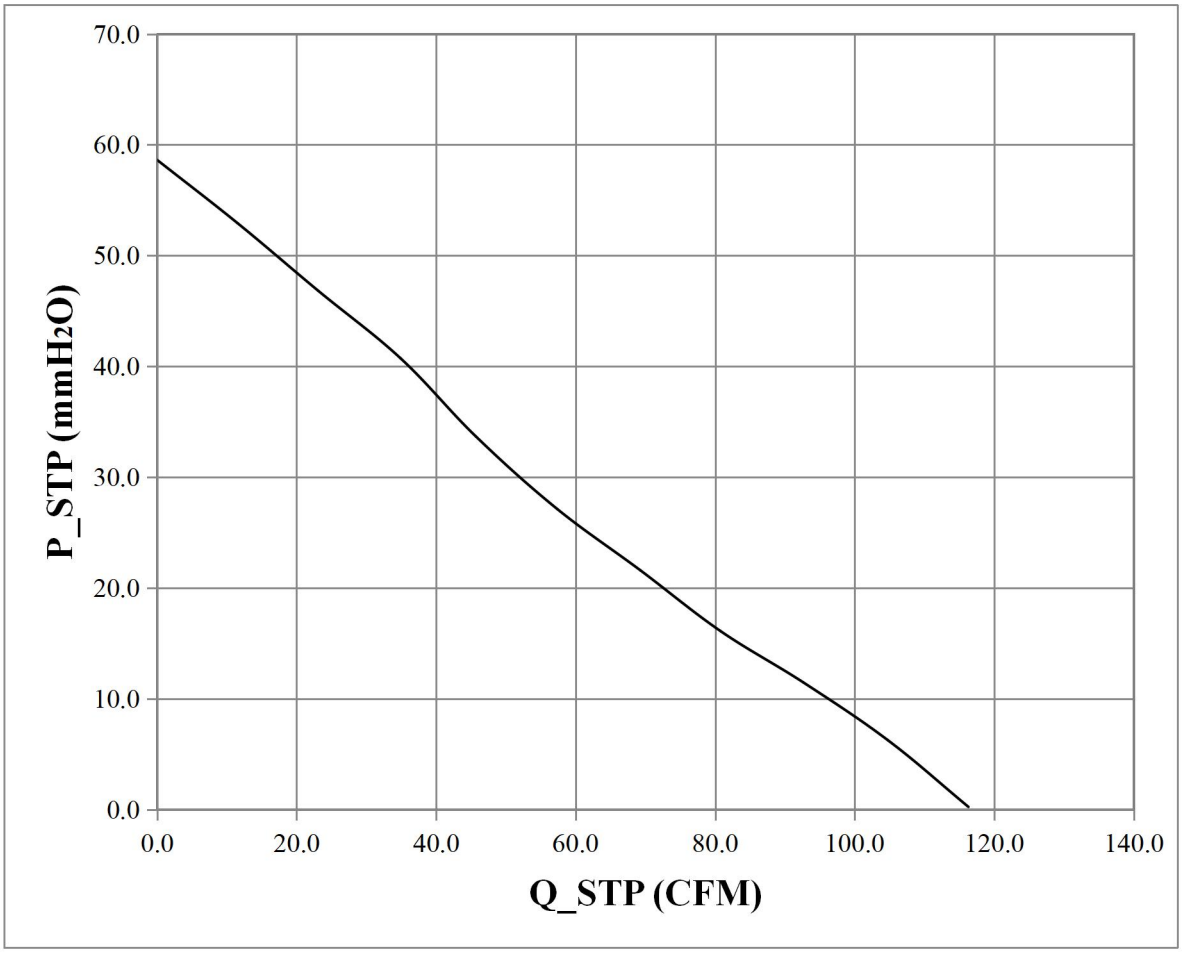
❖ **SPIN CLOCKWISE(DUTY CYCLE IS 100%)**



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

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❖ **SPIN COUNTERCLOCKWISE(DUTY CYCLE IS 15%)**

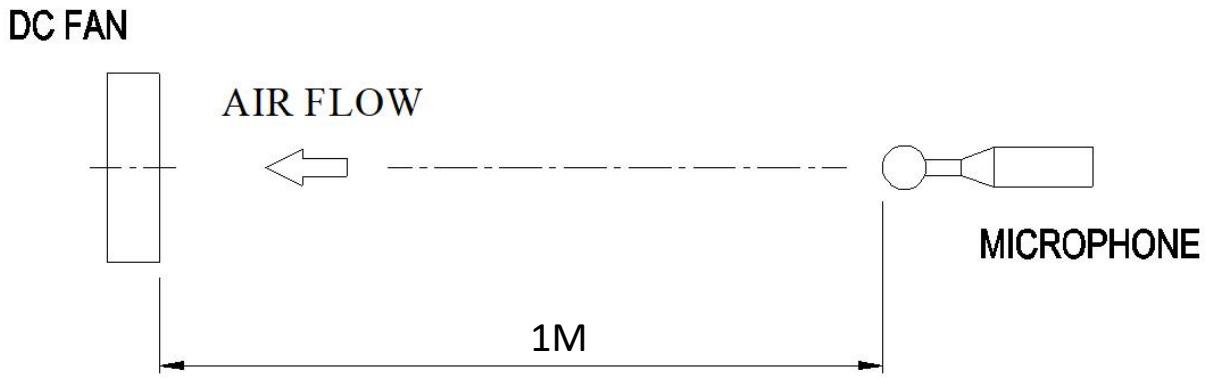


TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE
TEMPERATURE-----ROOM TEMPERATURE
HUMIDITY-----65%RH

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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 HOHIZONTAL CONDITION WITH THE

MICROPHONE AT DISTANCE OF 1 METER FROM THE FAN INTAKE.

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SPEED CONTROL FUNCTION

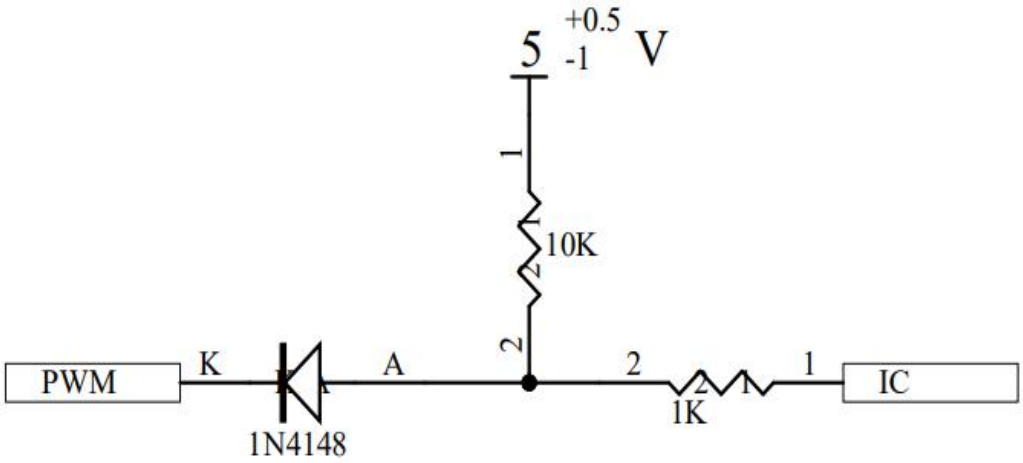
❖ PWM SIGNAL DESCRIPTION

1. CONTROL SIGNAL: PWM CONTROL
2. THE RANGE OF SIGNAL VOLTAGE: LOW LEVEL VOLTAGE: MIN. >0V , MAX.<0.4V
   HIGH LEVEL VOLTAGE: MIN. >2.8V, MAX≤5V
3. THE FREQUENCY OF PWM SIGNAL SHALL BE ABLE TO ACCEPT 15KHZ~30KHZ

❖ FAN SPEED CONTROL DESCRIPTION

1. FAN INPUT VOLTAGE (POSITIVE) : 24VDC
2. PWM FREQUENCY :25KHZ
3. THE FAN SPEED WILL SPIN AT MAXIMUM(CW) WHEN THE DUTY CYCLE IS 100%.
4. THE FAN SPEED WILL SPIN AT MINIMUM RPM WHEN THE DUTY CYCLE IS 0%.
5. THE FAN SPEED WILL SPIN AT 0~10800 RPM(CCW) WHEN THE DUTY CYCLE IS 0~19%,
6. THE FAN SPEED WILL SPIN AT 2100~10800 RPM(CW) WHEN THE DUTY CYCLE IS 20~100%.
7. WHEN THE LEADS OF THE PWM SIGNAL ARE DISCONNECTED, THE FAN WILL ROTATE AT HIGH SPEED(CW).

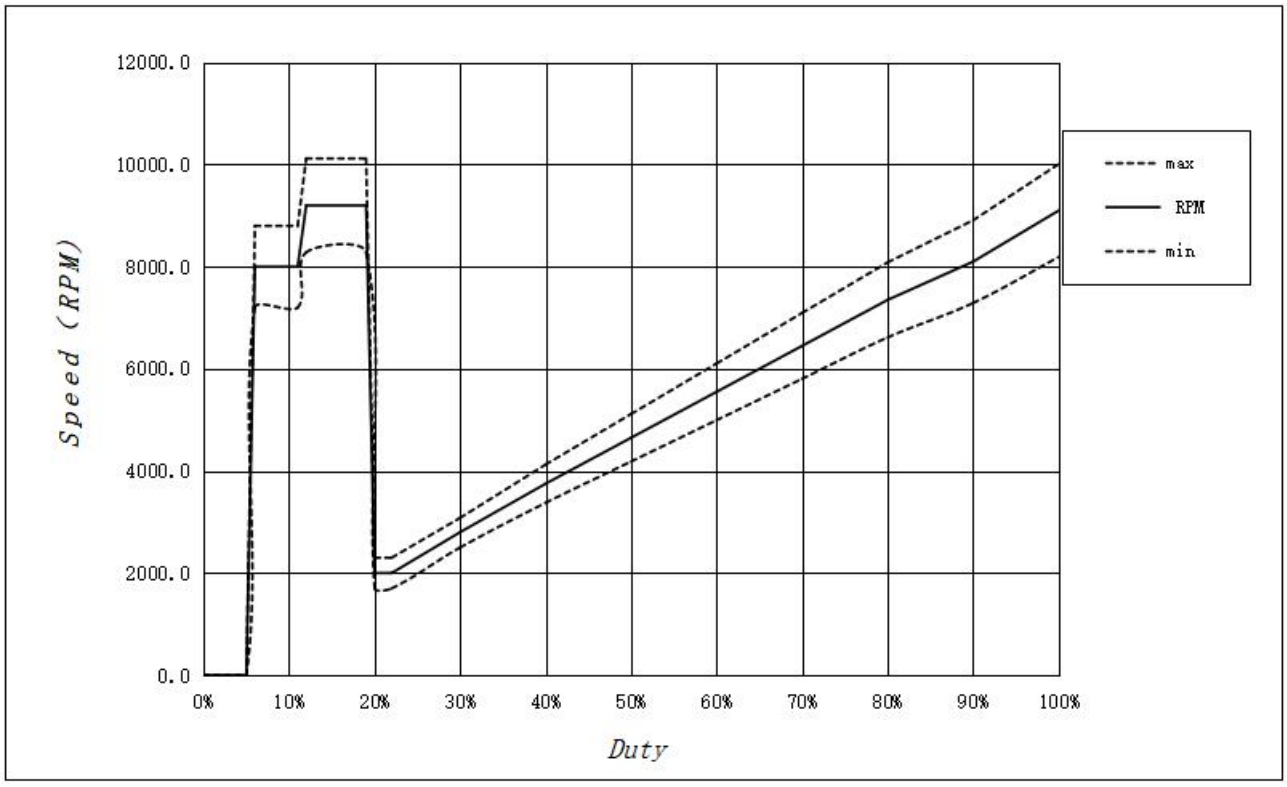
❖ PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



❖ PWM DUTY CYCLE VS. RPM(AT Ta=25°C)

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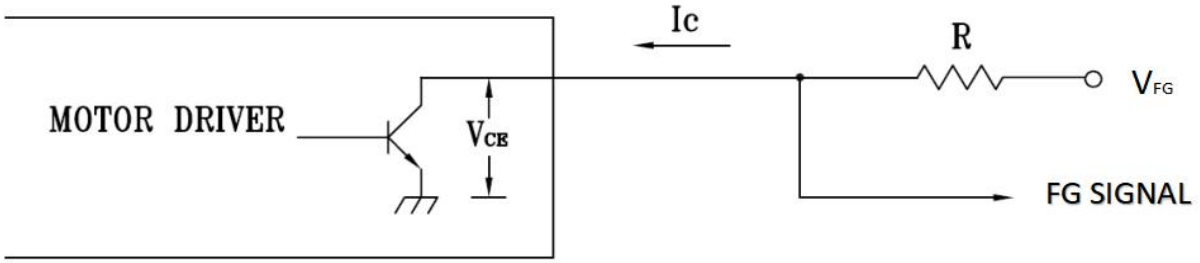
Duty Cycle (%)	Rotation direction	Speed(R.P.M)	Current(mA)
0~5%	N/A	0	20
6~11%	Reverse	8000	400
12~19%		10800	900
20~22%	Positive	2100	40
30%		3200	70
40%		4250	120
50%		5400	200
60%		6500	300
70%		7550	470
80%		8700	630
90%		9750	880
100%		10800	1200



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FREQUENCY GENERATOR (FG) SIGNAL

❖ SCHEMATIC



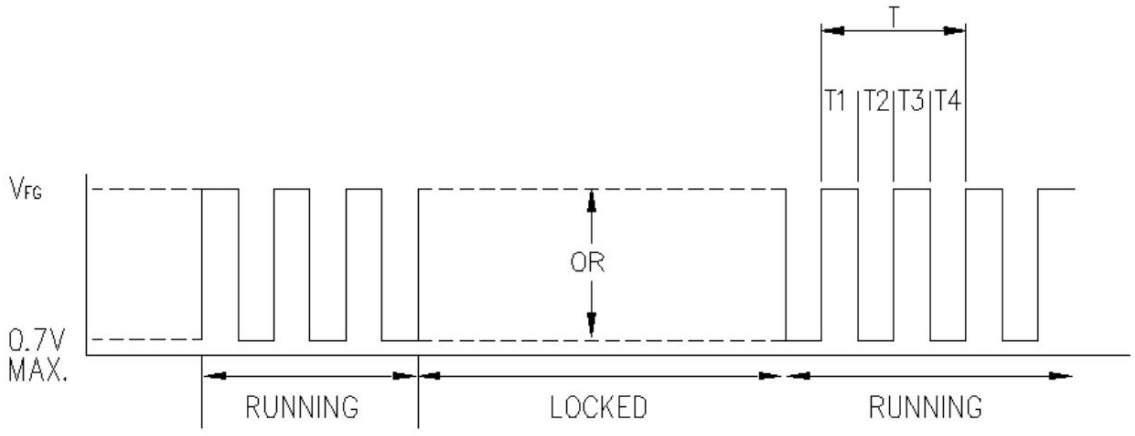
CAUTION:

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 = 27.6V
IC MAXIMUM CURRENT =10mA
LOW LEVEL VOLTAGE = 0.7V MAX.
R ≥ VFG / IC

❖ THE WAVEFORM FOR FREQUENCY GENERATOR:



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

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PRODUCT SAFETY AND USAGE 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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