Product Data Sheets

Customer : _____

Part No. : _____

CoolerMaster Model No. : E1N-7CCCS-06-GP

Edition: A1

Issued Date: 2006/12/08

Revision History：				
Date of Release	Revision No.	Description		
Customer		Cooler Master		
Approved by		DCC	Checked by	Drafted by
Date:		陳如玉 Juyu Date:2006/12/14	許應麟 Ivan Date: 2006/12/08	林婉君 Bonnie Date: 2006/12/08

Cooler Master Co., Ltd.

TEL: +886 (2) 32340050 FAX : +886 (2) 32340051 www.coolermaster.com

1. **Whole Set Photo**

2. **Specification & Dimension**

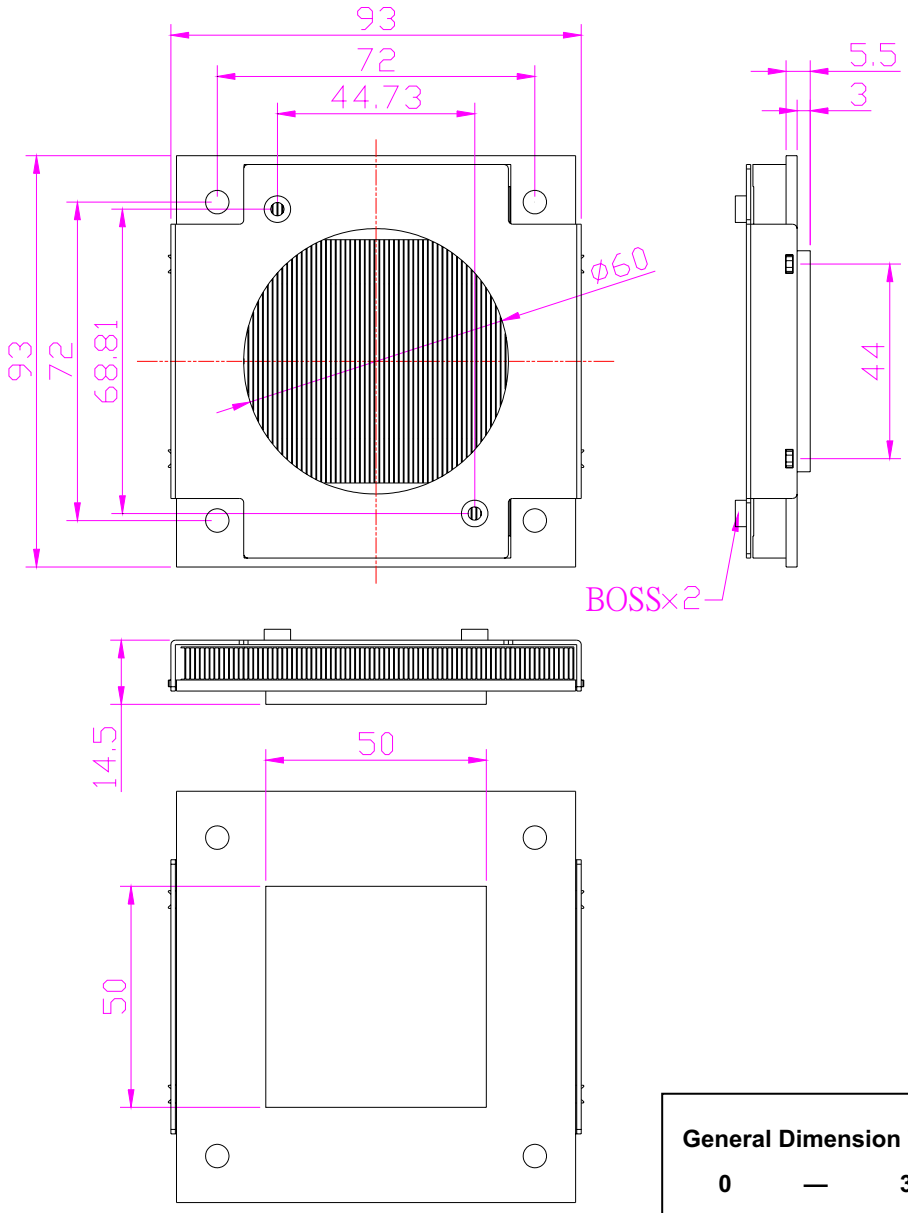
   Heat Sink / Screw / Spring / Interface / Fan Screw / Fan (MTTF) / Fan-Al Cover / Fan-Al Cover Screw

3. **Package**

Whole Set Photo

Specification & Dimension

Heat Sink Assembly:



General Dimension Tolerances (Unit : mm)			
0	—	30	± 0.2
31	—	60	± 0.3
61	—	100	± 0.4
101	and	Over	± 0.5
Angles			± 2˚

Specification & Dimension

Base

Material : C1100

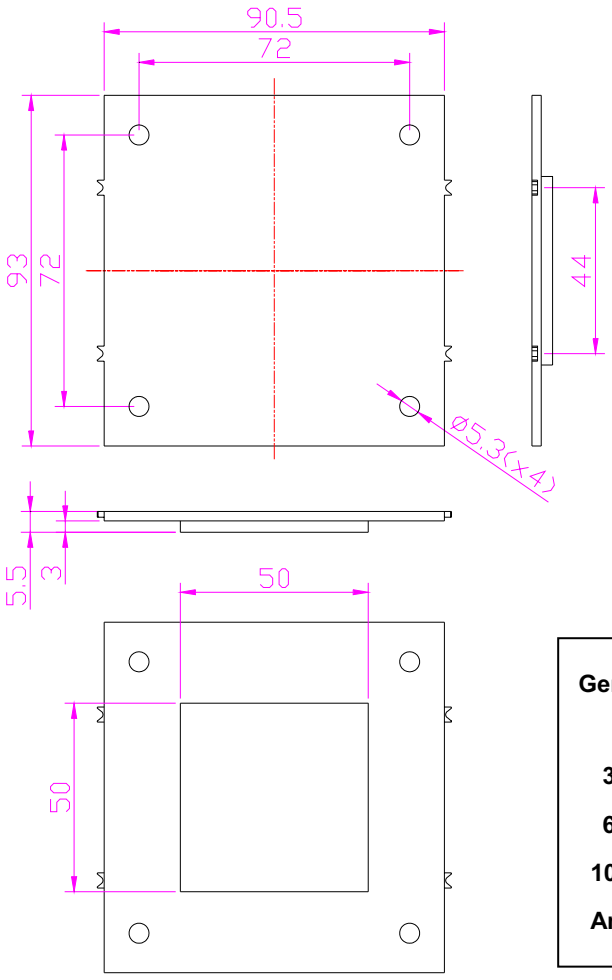
Finished: Anti- Oxidation

Mechanical Characteristics :

Alloy No.	Tensile Strength (26-32kgf/mm^2)	Hardness Test (80-100HV)	Elongation (%)
C1100	26.29	88	98 %

Chemistry Ingredient Characteristics :

Value	Cu	Pb	Fe	Sn	Zn	P
SPECIFIED VALUES	99.9	0	0	0	REN	0



General Dimension Tolerances (Unit : mm)			
0	—	30	± 0.2
31	—	60	± 0.3
61	—	100	± 0.4
101	and	Over	± 0.5
Angles			± 2˚

Fin

Material : C1100

Finished:Anti- Oxidation

Mechanical Characteristics :

Alloy No.	Tensile Strength ($26\text{-}32kgf/mm^2$)	Hardness Test (80-100HV)	Elongation (%)
C1100	26.29	88	98 %

Chemistry Ingredient Characteristics :

Value	Cu	Pb	Fe	Sn	Zn	P
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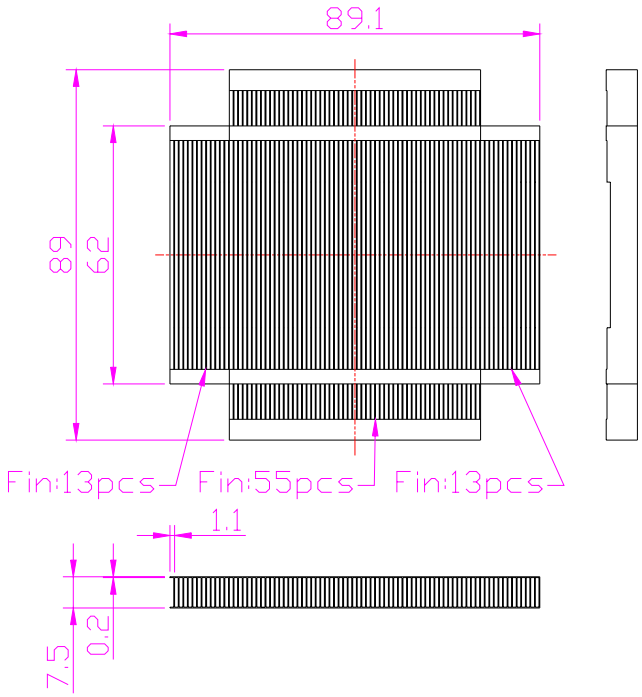


General Dimension Tolerances (Unit : mm)			
0	—	30	± 0.2
31	—	60	± 0.3
61	—	100	± 0.4
101	and	Over	± 0.5
Angles			± 2°

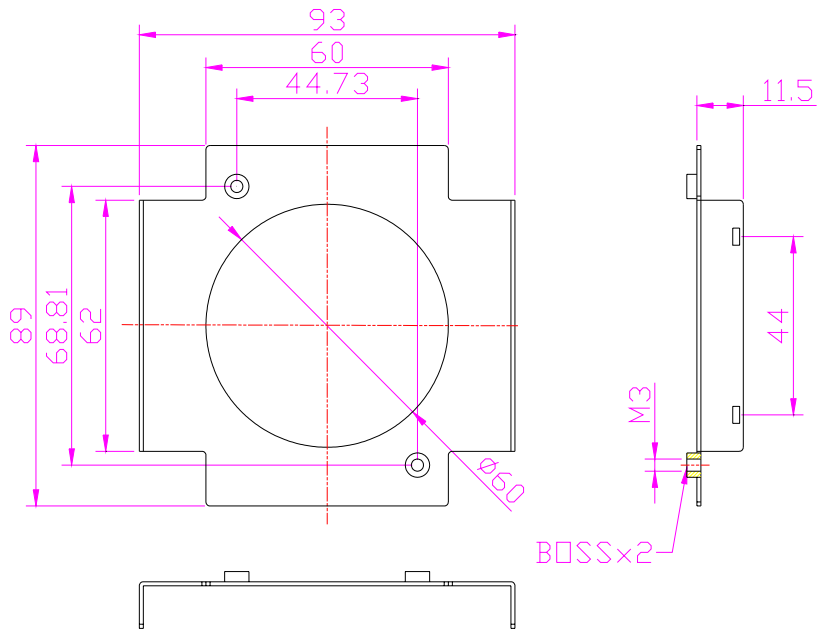
Cover

Material : Aluminum Alloy 1050
Finished: Original Anodize
Boss Material : Free Cutting Steel
Boss Finish : Nickel-Plating
Mechanical Characteristics :

Alloy No.	Tensile Strength	Shear Strength	Thickness
1050	79MPa	62MPa	0.8mm

Chemistry Ingredient & Temper Designation :

Value	Al	Si	Fe	Mn	Mg	V	Cu	Others	Flatness
SPECIFIED VALUES	99.5	0.25Max	0.4Max	0.05Max	0.05Max	0.05Max	0.05Max	0.03Max	<0.1mm



General Dimension Tolerances (Unit : mm)			
0	—	30	± 0.2
31	—	60	± 0.3
61	—	100	± 0.4
101	and	Over	± 0.5
Angles			± 2˚

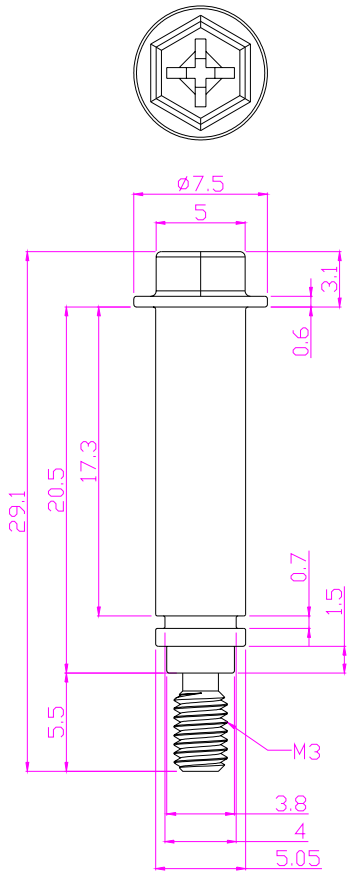
Screw

Material : AISI 1018

Finished: Nickel-Plated

Chemistry Ingredient Characteristics :(%)

Value	C	KN	P	S	SI
SPECIFIED VALUES	0.16	0.78	0.24	0.8	0.2



General Dimension Tolerances (Unit : mm)			
0	—	30	± 0.2
31	—	60	± 0.3
61	—	100	± 0.4
101	and	Over	± 0.5
Angles			± 2˚

Spring

Material : SWP

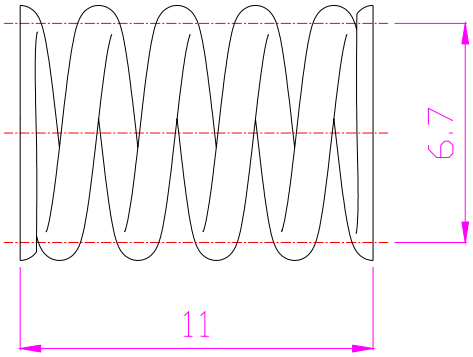
Finished: Nickel-Plated

Mechanical Characteristics :

Size	Free Length
1.1mm	11mm

Chemistry Ingredient Characteristics :(%)

Value	C	Si	Mn	P	S	Cu
SPECIFIED VALUES	0.80	0.19	0.47	0.008	0.007	0.04



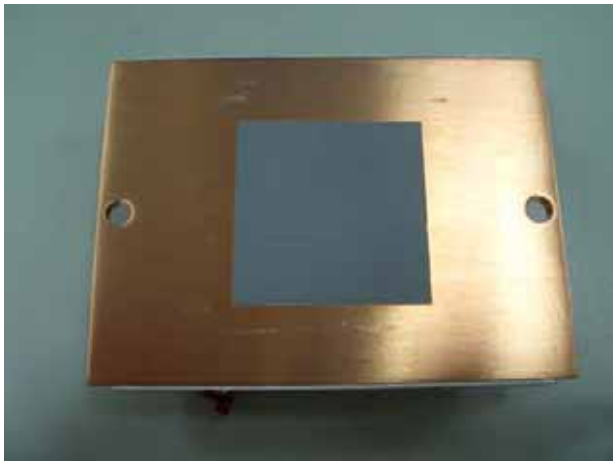
General Dimension Tolerances (Unit : mm)			
0	—	30	± 0.2
31	—	60	± 0.3
61	—	100	± 0.4
101	and	Over	± 0.5
Angles			± 2°

Interface

SIZE(mm): L*W =40*40mm

Position: middle

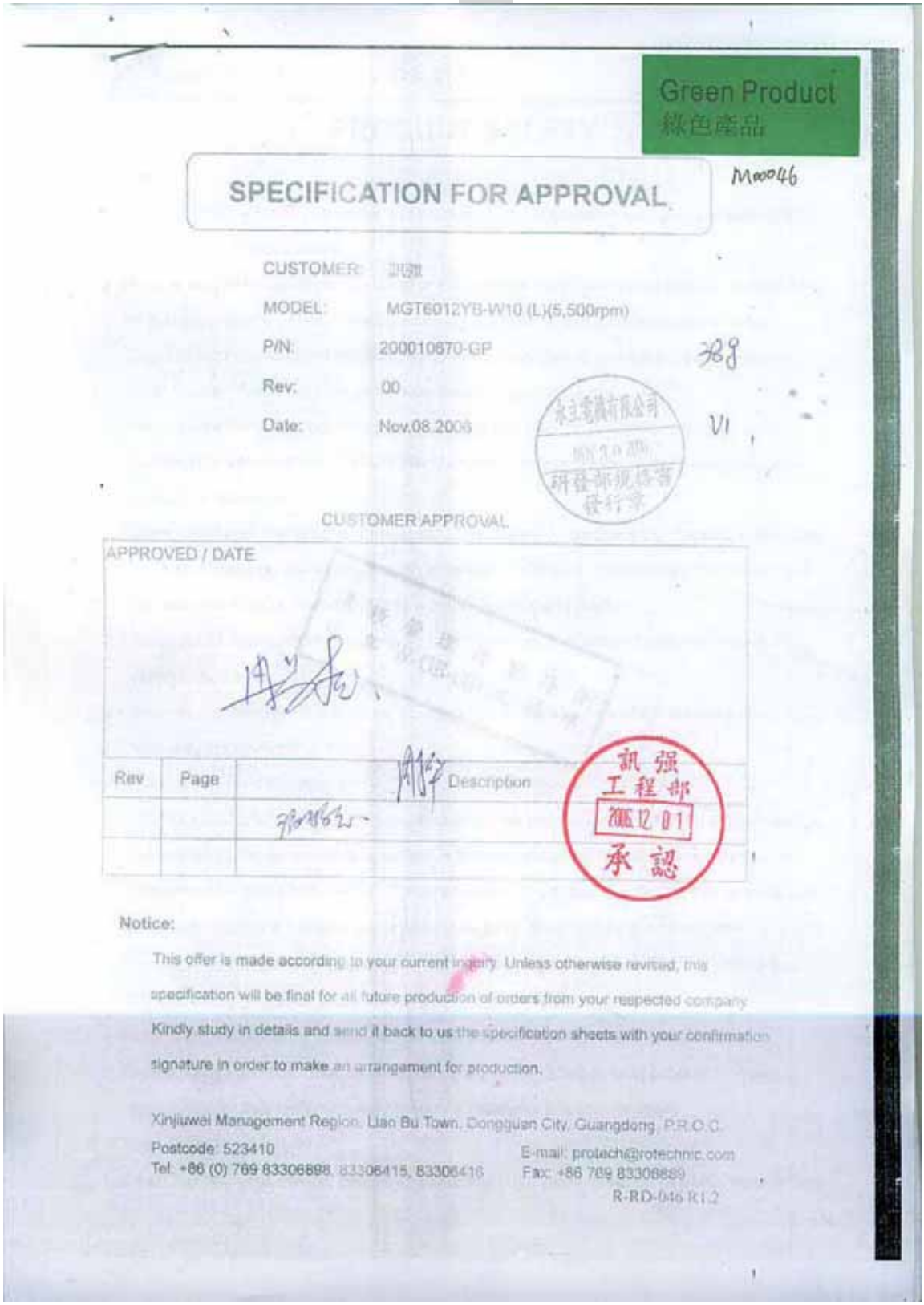
Specification	Brand
X-23-7783	Shin Etsu



Fan Screw

Specification	Color	Quantity
M3*8.5	Nickel-plating	2

Fan



Green Product
綠色產品

SPECIFICATION FOR APPROVAL

M00046

CUSTOMER:
MODEL: MGT6012YB-W10 (L)(5,500rpm)
P/N: 200010670-GP
Rev: 00
Date: Nov.08.2008

CUSTOMER APPROVAL

APPROVED / DATE

Rev	Page	Description

訊強 工程部 2008.12.01 承認

Notice:

This offer is made according to your current inquiry. Unless otherwise revised, this specification will be final for all future production of orders from your respected company. Kindly study in details and send it back to us the specification sheets with your confirmation signature in order to make an arrangement for production.

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Tel: +86 (0) 769 83306898, 83306415, 83306416
E-mail: protech@rotechnic.com
Fax: +86 769 83306889
R-RD-046 R1.2

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PRODUCT SAFETY

Ⅰ. Safety

1. PROTECHNIC will not guarantee this product if your application exceeds the limitations outlined in this specification.
2. There is no thermo-protector installed in this product, such as thermo-fuse, or current-fuse or thermo-protector. There may be smoking, ignition, or electric shock by insulation degradation in cases or motor lock, motor lead short circuit, overload, over voltage or other failure. Please add the protection circuit to your product.
3. Please verify that this product is being installed and used in compliance with all safety standards. Please inform PROTECHNIC of any safety concerns prior to releasing your product to production.
4. Please handle and install this product carefully. Hitting or dropping this product may cause damage. Please do not touch or push impeller with fingers or other objects impeller and ball bearings may be damaged. And a noise defect may result.
5. Please install this product precisely, as unfit mounting may cause harsh resonance, vibration and noise.
6. Please do not damage this product including coil and lead wires while installing or wiring. There may be smoking or fire.

Ⅱ. Specification modification

1. PROTECHNIC offers engineering assistance on fan installation and cooling system design.
2. Any change to the parameters specified in this document will be determined by mutual agreement between both parties. Parameters which are not specified in this specification will be identical to the final sample which has been approved by your company.
3. Product will be shipped in accordance with this specification unless PROTECHNIC has been previously notified of parameters requiring exception.
4. Parameters modified by mutual consent will be incorporated in this specification.
5. Please notify PROTECHNIC in advance of any modification to your product or new application for this fan which may require a review of this specification.

Ⅲ. Other

1. When building your device, please examine thoroughly any variation of EMC, temperature

rise, life data, quality, etc. of this product by shock/drop/vibration testing, etc. If there are any problems or accidents in connection with this product, it should be mutually discussed and examined.

2. Fan holders or bearings may be damaged if touched with fingers or other objects. Additionally, static electricity (ESD) may damage the internal circuits. Please handle this product carefully.
3. Please avoid operating PROTECHNIC product in poisonous material (organic silicon, cyanogens, formal in, phenol, etc.) or corrosive gas environments (H_2S, SO_2, NO_2, Cl_2, etc).
4. PROTECHNIC does not warrant performance safety against accidents caused by dust, water, droplets, dew, bugs, etc.
5. Please advice us in advance if you require documents for export.
6. Improper mounting may cause harsh resonance, vibration, and noise. Please mount securely.
7. Safety a top priority. Please furnish guard accessories to prevent injury to personnel.
8. Unless special noted, all tests are conducted at 25℃ ambient temperature and 65% relative humidity.
9. Always ensure that fans are stored according to the storage temperatures specified. Do not store in a high humidity environment. If the fans are stored for more than 6 months, PROTECHNIC recommends functional testing before using.
10. PROTECHNIC reserves the right to use components with equivalent specifications from multiple sources.

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This specification is applied to the fan motor described below

CONTENTS:

晁汐 Nov.08.2006	晁汐 Nov.08.2006	毛曉翔　陳用 Nov.08.2006
Approval	Checked	Engineering

PROTECHNIC ELECTRIC CO., LTD.

DC BRUSHLESS FAN

1. Scope:

This standard applies to model No. MGT6012YB-W10 (L)D.C brushless axial flow fan.

2. Objects:

This standard defines the general performance, the mechanical and electrical characteristics as well as the test requirements of the DC brushless axial flow fan.

3. Character:

3-1. Rated Voltage	D.C. 12V
3-2. Operating voltage	D.C. 5.0V~13.8V
3-3. Start up voltage	D.C. 5.0V (At 100% duty cycle)
3-4. Current	0.30A
3-5. Power	3.60W
3-6. Speed	5,500±10%rpm At 25℃,To record speed after fan running normal, This time about 3~5minutes.
3-7. Air flow (at zero static pressure)	0.167m^3/min (5.88cfm) Min:0.150m^3/min (5.30cfm)
3-8. Air pressure (at zero air flow)	13.30mm H_2O (0.524inch H_2O) Min:10.77mm H_2O (0.424inch H_2O)
3-9. Acoustical noise	42.3dB(A) (Ref)
3-10. Insulation resistance	Min 10Meg Ohm between internal stator and lead wire (+) at 500VDC

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3-11. Dielectric strength	5mA max at 500VAC 50Hz 1 minute (600VAC 1 second), between frame and (+) terminal
3-12. Life expectance	70,000 hrs continuous at 40°C,45~85% relative humidity
3-13. Rotation	Clockwise viewed from plate side

4. Construction:

4-1. Bearing system	Two ball bearings
4-2. Frame type	Rib type
4-3. Weight	38±10g
4-4. Lead wire	UL 1061 AWG26# 210±10mm Black wire negative (-) Red wire positive (+) Yellow wire FG signal Blue wire pulse width modulation
4-5. Connector housing	CKM P/N 25410108-04 OR EQUIVALENCE
4-6. Terminal	CKM P/N 25410301 OR EQUIVALENCE
4-7. Tube	N/A

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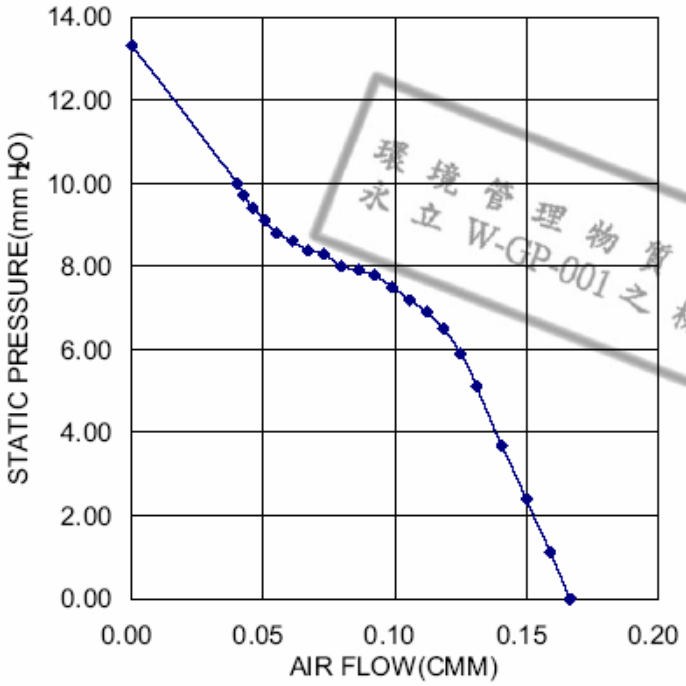
4-8. Nameplate	Please refer to the nameplate drawing

5.Environmental:

5-1. Operating temperature	-10 to +70°C
5-2. Storage temperature	-40 to +80°C
5-3. Operating humidity	5% to 90%RH
5-4. Storage humidity	5% to 90%RH

6.PQ curve: (Input Voltage: 12VDC)



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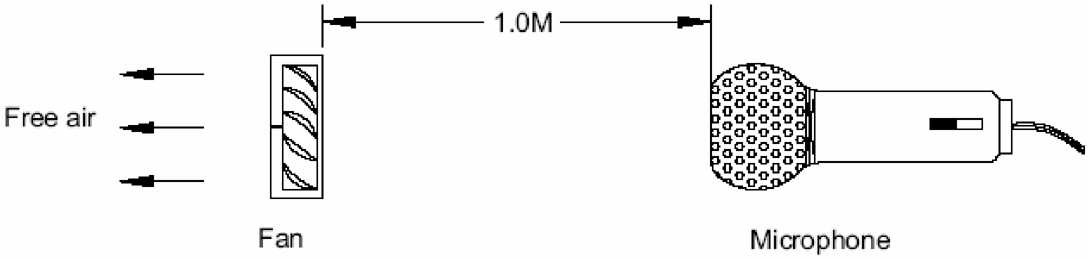
7. Noise Test: (ISO10302)



Noise is measured at rated voltage in free air in anechoic chamber with 3560C S/N 2441457 B & K sound pressure Level meter with 4190-L-001 microphone at a distance of one meter from the fan intake. The background noise is 16 dB (A) Max.

8.Reliability Test:

8-1. Mechanical shock Test: (IEC 60068-2-27)

1. Pulse shape	half-sine
2. Peak acceleration	490m/s^2 (equivalent 50G)
3. Duration	6ms
4. Orientation	x, -x, y, -y, z, -z
5. Shocks	Three shocks each orientation (that is a total of18 shocks)

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8-2. Vibration Test: (IEC 60068-2-34)

1. Orientation	X, Y, Z (3 axes)
2. Overall RMS	3.2G
3. Frequency (Hz)	10,20,40,800,1000
4. Duration	2 hours on each orientation
5. Sample condition	non-packing, non-operation

8-3. Low Temperature Test: (IEC 60068-2-1)

1. Store all samples	under –40 °C for 96 hours
2. Change Temperature	to –10 °C for 12 hours
3. Start fan with minimum opreating	Voltage (10.8V) under -10 °C
4. Fan operating	under -10 °C for 96 hours

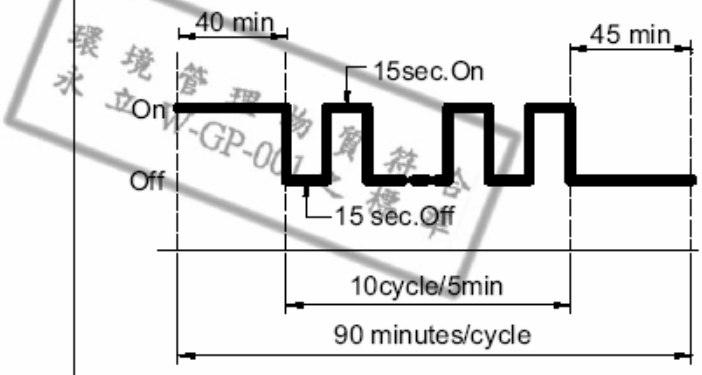
8-4. Impeller Lock Test: (IEC 60950&UL507)

1. Test temperature	under 25 °C or room temperature
2. Input rated voltage	12.0VDC
3. Coil temperature	<150 °C
4. Duration	72hours
5. After lock testing	Perform 500VAC / 60sec dielectric strength test

8-5.Hight Temperature/Operating Voltage Margin Verification Test: (IEC 60068-2-2)

1. With maximum operating temperature	70 °C
2. 3 units is for highest operating voltage	13.2VDC
3. 3 units is for lowest operating voltage	10.8VDC
4. If no problem found then continue testing	72 hours

8-6. High Tempreture / Rating Voltage On/Off Test: (IEC 60068-2-2)

1.Test under 70 degree C and rating voltage	12.0 VDC
2. Power On / Off Profile	
3. Total cycle	48 cycles for 72 hours

8-7. Humidity Exposure Test: (IEC 60068-2-3)

1. Temperature	60 °C ~65 °C
2. Humidity	90%~95%RH
3. Duration	240 hours

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8-8. Thermal shock: (IEC 60068-2-14)

1. Low Temperature	-40°C/30min
2. High Temperature	+85°C/30min
3. Transition time	less than 5 minutes
4. Number of cycle	10

8-9. Temperature Cycling & Power Switching Test: (IEC 60068-2-14)

1. Low Temperature	-25°C/24 hours
2. High Temperature	+85°C/24 hours
3. Transition time	1 hour
4. Under rated voltage	12.0VDC
5. Number of cycle	2
6.Power duty cycle	ON / 3 minutes; OFF / 3 minutes

Criterion

For permission criteria for the measurable after test

1. For current, the limit is less than spec (max) 15%
2. For speed, the allowable decrease is less than 15%
3. For noise, the limit is less than spec (max)+3dB(A)

9. Outgoing

—Sampling method MIL-STD-105E-Ⅱ

—Critical AQL 0

—Major AQL 0.40

—Minor AQL 1.00

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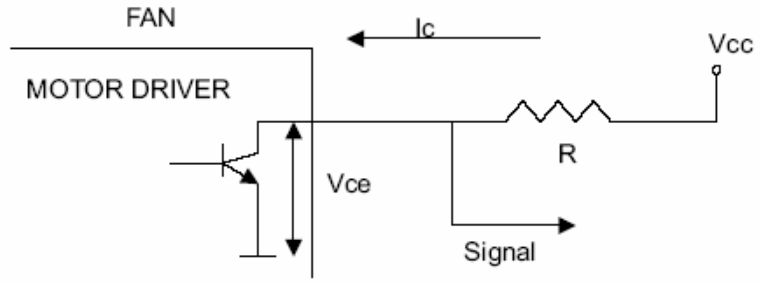
10. Output of rotary Signal:

10-1.Output method— open collector metheod

10-2. Circuit Specification:



10-2-1. Specification:

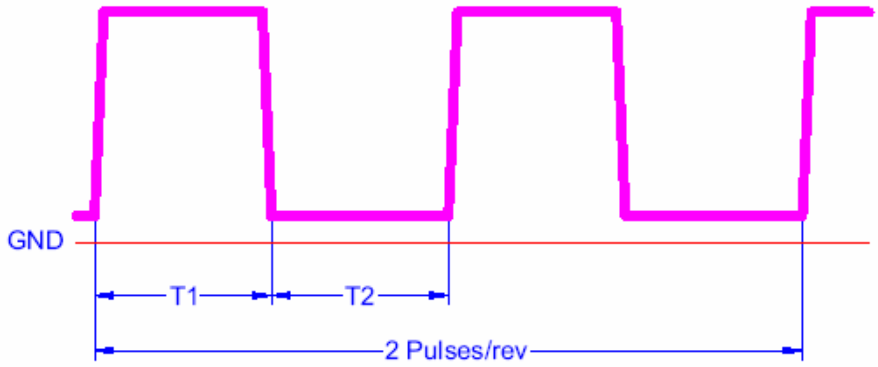
Vcc: =15VMAX

Vce(sat):=1.0VMAX

Ic=5mA MAX

R≧Vcc/Ic

10-2-2. Frequency Generator Waveform:



One Fan Rotation

T1 = 60/4N [sec].

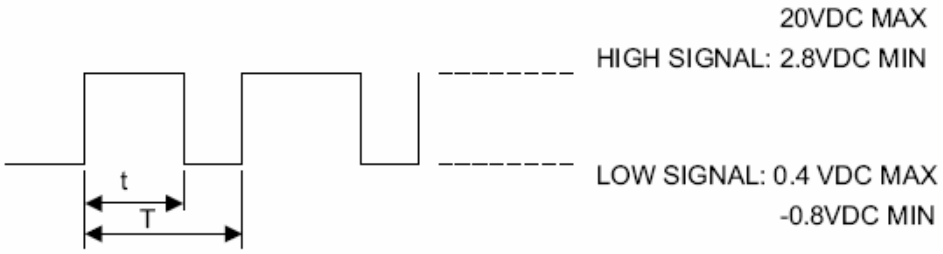
N: Number of fan rotation (rpm).

Pulse width duty = T1÷(T1+T2) = 50±5%

11. PWM signal

11-1. PWM Control signal:

Signal voltage range:-0.8~20 VDC



$$\text{DUTY CYCLE} = \frac{t}{T} * 100(\%)$$

- The Frequency for control signal of the fan shall be able to accept at 18~25 KHZ
- The preferred operating point for the fan is 20KHZ
- At 100% duty cycle, the rotor will spin at maximum speed.
- With control signal lead disconnected, the fan will spin at maximum speed.

11-2. Speed Vs PWM control signal:

(At rated voltage & PWM frequency=20KHZ)

Duty cycle (%)	Speed R.P.M
100%	5500±10%
50%	3787±10%
0%	400±250

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12. Name plate:

Safety License:

CUL: File No: E187236

C E: Report No: BCT06JC-058E

TUV: File No: B 06 10 31023 053

Ø26mm Material: PET

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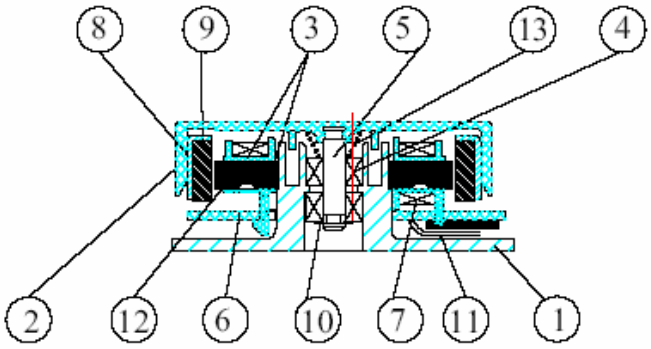
13. Structure and Material List:

13-1. Structure



13-2. Material List:

NO.	COMPONENTS	MATERIAL	TYPE	GRADE	MANUFACTURER	UL NO.
1	FRAME	PBT (30%GF) PBT(30%GF)	4830 GBK4 1403G6 GBK4	94V-0 94V-0	CHANGHCHUN PLASTICS CO;LTD. NAN YA PLASTICS CORPORATION	E59481 E130155(M)
2	IMPELLER	PBT (30%GF) PBT(30%GF)	4130 GBK4 1403G6 GBK4	94V-0 94V-0	CHANGH CHUN PLASTICSCO;LTD. NAN YA PLASTICS CORPORATION	E59481 E130155(M)
3	BOBBIN	PBT (30%GF) PBT(15%GF)	4130 GBK4 1403G3 GBK4	94V-0 94V-0	CHANGH CHUN PLASTICSCO;LTD. NAN YA PLASTICS CORPORATION	E59481 E130155(M)
4	BEARING	—	—	—	NMB.ISC	—
5	SHAFT	STAINLESS-STEEL	SUS420J2 or SUS420F	—	—	—
6	PCB	FR-4	KB-2150G	94V-0	KINGBOARD LAMINATESLTD FUJIAN LEEHING ELECTRONIC CO LTD	E123995(S) E193288
7	COIL	COPPER	—	—	—	—
8	ROTOR YOKE	SECC	—	—	—	—
9	MAGNET	RUBBER MAGNET	—	—	—	—
10	LOCK WASHER	MYLAR	—	—	—	—
11	LEAD WIRE	COPPER CONDUCTOR INSULATION	AWG#26	80℃ 300V	WONDERFUL WIRE &CABIE CO.,LTD EVERTOP WIRE &CABIE CO.,LTD REI HSING WIRE &CABIE CO.,LTD	E77981 E117873 E108485(S)
12	CORE	H18	—	—	—	—
13	SPRING	TBMnA	—	—	—	—

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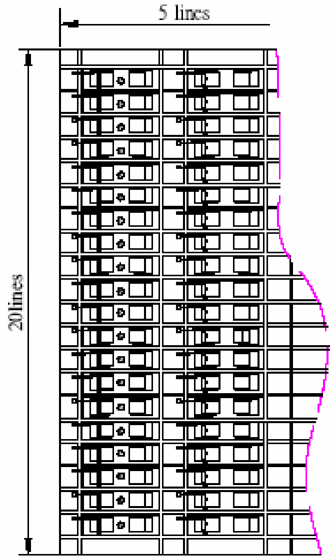
14. Packing:

14-1. Inner Box:

5x 20PCS=100PCS／1 Inner Box

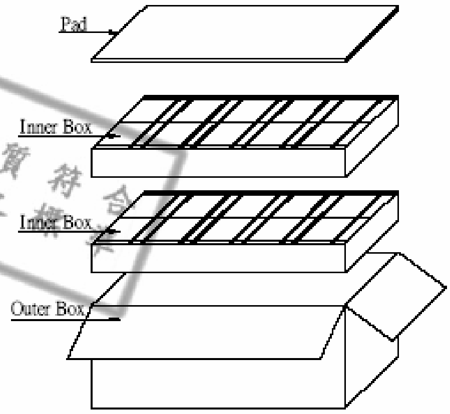


14-2. Outer Box:

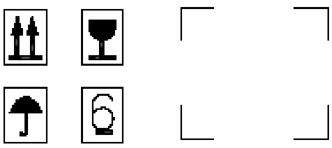
2Inner Box／1 Outer Box=2x100PCS=200 PCS／1 Outer Box

<1> Face

PROTECHNIC ELECTRIC CO.,LTD.
TEL:(0769)83306898 FAX:(0769)83306889
地址: 東莞市寮步鎮新舊圍管理區龍泉工業區



<2> Side



Q`TY : 200PCS
N.W: 7.0kg
G.W: 8.2kg

MARK			
廠商名稱	永立電機有限公司		
客戶		型號	
永立料號			
客戶料號			
單箱基數		箱號	
批號			

NOTICE: The value of N.W and G.W is approx.

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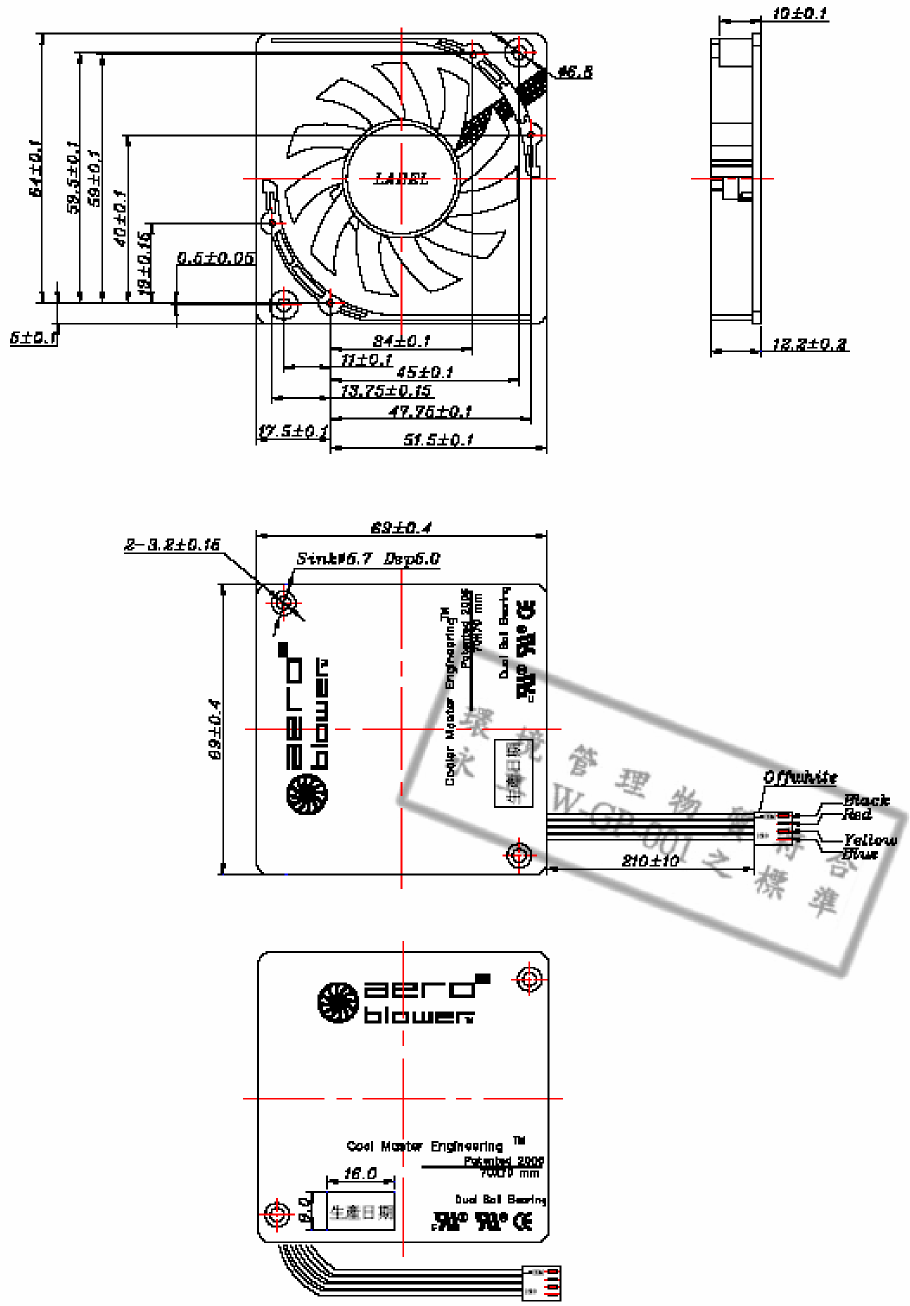
15.Protechnic environment material control standards.

NO.	Banned or Restricted Substances	Testing Method	Controlled Applications	Effective Date	Threshold (ppm)
1	Cadmium and its compounds	EPA3050B:Rev.2:1996 BSEN1122:2001 EN 13346:2000 EPA3052:1996 EPA6010B	• Packaging, plastic additives, plastic, pigment, dye, paint, ink and metal (except brass and zinc/ zinc alloy)	Banned immediately	<5
			• Solder(Whose cadmium concentration is more than 20ppm)		<20
			• Brass, zinc and zinc alloys		<75
2	Lead and its compounds	EPA3050B:Rev.2:1996 EN 13346:2000 EPA3052:1996 EPA6010B	• Plastics, pigments, dyes, paints, inks, inks, plastic additives, pigment.	Banned immediately	<50
			• Iron and steels		<3,500
			• Aluminum and its alloys		<4,000
			• Copper and its alloys		<40,000
			• Electrical components, PCBs, solder, plating, lead-frame, etc.		<800
3	Mercury and its compounds	US EPA 3052 US EPA 3051A US EPA 6010B EN ISO 11885	• Plastics, paints, inks, pigments, plastic additives, inks. switch (except for display lamps)	Banned immediately	<2
			• Hydrargyrum and its compounds in the metallic material		<100
4	Hexavalent Chromium and its compounds	US EPA 7196A,7199A,3060A , IEC111 ,	• Anti-corrosion treatment, plastics, paints, inks, pigment, dyes	Banned immediately	<2
5	Arsenic and its compounds	EPA3052 & EPA6010B	• Paints, plastic, preservatives	Banned immediately	Banned
6	Ba	EPA3052 & EPA6010B	• Plastic package	Banned immediately	Banned
7	Sb		• Plastic package	Banned immediately	Banned
8	Se		• Plastic package	Banned immediately	Banned
9	Polychlorinated Biphenyls (PCB's) and Terphenyls (PCT's)	EPA3546 & EPA8082	• Capacitor, electrical, transformer fluid, insulation oil, flame retardant, lubricator etc.	Banned immediately	Banned
10	Polychlorinated Naphthalene's (PCN)		• Paint, lubricator etc.	Banned immediately	Banned
11	Short-chain Chlorinated paraffins (CP), (C10-13, Cl>50wt%)	EPA3546 & EPA8082	• Plastic material additives, flame retardant etc.	Banned immediately	Banned
12	PBB (Polybrominated Biphenyl)	EPA 3546 EPA1613:1994 EPA8270c:1996 EPA8082a	• Flame retardant	Banned immediately	<5
13	Polybromodiphenyl ether Polybromodiphenyl oxide Polybrominated biphenyl ether (PBDE, PBDO, PBBE)		• Flame retardant • Flame retardant for plastic & PCB	Banned immediately	<5
14	Organic tin compounds (Tributyl tin compounds, Triphenyl tin compounds)	EPA 3550 EPA1613:1994 EPA8270c:1996 EPA8082a DIN38407-13	• Paint, dye, colorant, anti-corrosion	Banned immediately	Banned
15	Asbestos and its compounds	83/478/EEC, 83/610/EEC, 91/659/EEC	• Filler, insulation	Banned immediately	Banned
16	Azoic compounds	CEN ISO/TS17234 LMBG82.02-2,3,4 & DIN53316	• Dye, colorant	Banned immediately	Banned
17	Formaldehyde	EN717-1:2002 EN120	• Anti-corrosion	Banned immediately	Banned
18	CFCs / HCFCs/ HCFs/ Halons / ODC	3093/94/EEC	• Solvent, cleaning agent, compressed gas package, refrigerant, foam plastic	Banned immediately	Banned
19	PVC & its blends	IEC754-1	• Plastic pellet & PCB	Restricted immediately	Banned
20	Packaging Materials	Cd: EN1122-2001 Pb: EPA3050B, Hg: EPA3052 Cr+6: EPA3060A	• Plastic package, paper carton, etc.	Banned immediately	Total: Cd+Pb+Hg+Cr+6 <80 Single: Cd<5; Pb<40; Hg<2; Cr<60

PROTECHNIC ELECTRIC CO., LTD.

16.Structure & Shape (Unit: mm)



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Bontek Compliance Laboratory

CE Certification of Conformity

Certification number: BCT06JC-058E Report number: BCT06JR-058E

Bontek Compliance Laboratory Ltd hereby declares that testing has been completed and reports have been generated for:

Applicant:	**Protechnic Electric Co., Ltd.** Longquan Industry, Xijiuwei Territory, Liaobu Village, Dongguan City, Guangdong, China
Manufacturer:	**Protechnic Electric Co., Ltd.** Longquan Industry, Xijiuwei Territory, Liaobu Village, Dongguan City, Guangdong, China
Product:	**Component fan**
Model:	**MGa30 Series, MGa38 Series, MGa40 Series, MGa45 Series, MGa50 Series, MGa60 Series, MGa70 Series, MGa80 Series, MGa92 Series, MGa120 Series**

And, in accordance with the following Applicable Directives:

89/336/EEC Electromagnetic Compatibility (as amended)

73/23/EEC Low Voltage Directive (as amended)

That this product has been assessed against the following Applicable Standards;

EMC	**EN 61000-6-1: 2001**	Electromagnetic compatibility (EMC) -Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments
	EN 61000-6-3: 2001	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments
LVD	**EN 60950-1/A11: 2004**	Safety of information technology equipment

Therefore, Bontek Compliance Laboratory Ltd hereby acknowledges that the applicant may issue a DECLARATION of CONFORMITY and apply the CE marking in accordance with European Union Rules.

Attestation by:

Andrew He

Date of issued: October 28, 2006

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Attachment to certificate: BCT06JC-058E

Models: MGa30 Series, MGa38 Series, MGa40 Series, MGa45 Series
MGa50 Series, MGa60 Series, MGa70 Series, MGa80 Series
MGa92 Series, MGa120 Series

Model description:

MG (a) 92 48 M (e) - f 38
MG a b c d e f g

a. could be A or T indicate electric characteristic
A=No signal input
T=Provided signal input

b. indicate fan appearance dimension
30 = 30×30 mm 38 = 38×38 mm 40 = 40×40 mm
45 = 45×45 mm 50 = 50×50 mm 60 = 60×60 mm
70 = 70×70 mm 80 = 80×80 mm 90 = 90×90 mm
120 = 120×120 mm

c. indicate input voltage could be
05=5Vdc 12=12Vdc 24=24Vdc 48=48Vdc

d. indicate fan speed could be
L=Low speed
M=Medium
H=High speed
X=Very high speed
Y=Most high speed
Z=Extremely high speed
U=Ultra high speed

e. indicate bearing type could be
S=Sleeve bearing
B=Two ball bearings
C=One ball & one sleeve bearing
R=Rifle bearing
F=FDB bearing

f. optional for marking purpose could be A~Z

g. indicate thickness could be 56, 38, 32, 28, 25, 20, 15, 10

Parameters

Rated input voltage:	5, 12, 24, 48Vdc
Rated input current:	See attachment
Protection class:	III
Max. ambient temperature:	50 °C
Degree of protection:	
Against ingress of liquids:	Ordinary

Remarks: when installing, all requirements of
EN60950-1/A11:2004 test standards must be fulfilled

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Attachment 3 of 8

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Attachment for model list to certificate: BCT06JC-058E

Model	Rate(V)	Rate(A)	Model	Rate(V)	Rate(A)
MG(a)3005M(e)-f10	5V	0.07A	MG(a)4024H(e)-f10	24V	0.08A
MG(a)3005H(e)-f10	5V	0.09A	MG(a)4024X(e)-f10	24V	0.09A
MG(a)3005X(e)-f10	5V	0.11A	MG(a)4024Y(e)-f10	24V	0.10A
MG(a)3005Y(e)-f10	5V	0.14A			
MG(a)3005Z(e)-f10	5V	0.20A	MG(a)4005L(e)-f15	5V	0.18A
MG(a)3012X(e)-f10	12V	0.06A	MG(a)4005M(e)-f15	5V	0.20A
MG(a)3012Y(e)-f10	12V	0.07A	MG(a)4005H(e)-f15	5V	0.26A
MG(a)3012Z(e)-f10	12V	0.10A	MG(a)4005X(e)-f15	5V	0.30A
			MG(a)4005Y(e)-f15	5V	0.36A
MG(a)3812L(e)-f20	12V	0.16A	MG(a)4012L(e)-f15	12V	0.09A
MG(a)3812M(e)-f20	12V	0.22A	MG(a)4012M(e)-f15	12V	0.10A
MG(a)3812H(e)-f20	12V	0.30A	MG(a)4012H(e)-f15	12V	0.11A
MG(a)3812X(e)-f20	12V	0.40A	MG(a)4012X(e)-f15	12V	0.13A
MG(a)3824L(e)-f20	24V	0.10A	MG(a)4012Y(e)-f15	12V	0.15A
MG(a)3824M(e)-f20	24V	0.15A	MG(a)4012Z(e)-f15	12V	0.20A
MG(a)3824H(e)-f20	24V	0.22A			
MG(a)3824X(e)-f20	24V	0.33A	MG(a)4005L(e)-f20	5V	0.22A
			MG(a)4005M(e)-f20	5V	0.28A
MG(a)3812L(e)-f28	12V	0.16A	MG(a)4005H(e)-f20	5V	0.32A
MG(a)3812M(e)-f28	12V	0.20A	MG(a)4005X(e)-f20	5V	0.43A
MG(a)3812H(e)-f28	12V	0.28A	MG(a)4012L(e)-f20	12V	0.09A
MG(a)3812X(e)-f28	12V	0.50A	MG(a)4012M(e)-f20	12V	0.11A
MG(a)3824L(e)-f28	24V	0.11A	MG(a)4012H(e)-f20	12V	0.13A
MG(a)3824M(e)-f28	24V	0.15A	MG(a)4012X(e)-f20	12V	0.15A
MG(a)3824H(e)-f28	24V	0.18A	MG(a)4012Y(e)-f20	12V	0.18A
MG(a)3824X(e)-f28	24V	0.25A	MG(a)4012Z(e)-f20	12V	0.22A
			MG(a)4024L(e)-f20	24V	0.07A
MG(a)4005L(e)-f10	5V	0.15A	MG(a)4024M(e)-f20	24V	0.09A
MG(a)4005M(e)-f10	5V	0.20A	MG(a)4024H(e)-f20	24V	0.11A
MG(a)4005H(e)-f10	5V	0.25A	MG(a)4024X(e)-f20	24V	0.13A
MG(a)4005X(e)-f10	5V	0.30A	MG(a)4024Y(e)-f20	24V	0.14A
MG(a)4005Y(e)-f10	5V	0.38A	MG(a)4024Z(e)-f20	24V	0.16A
MG(a)4012L(e)-f10	12V	0.08A			
MG(a)4012M(e)-f10	12V	0.09A	MG(a)4005L(e)-f28	5V	0.20A
MG(a)4012H(e)-f10	12V	0.11A	MG(a)4005M(e)-f28	5V	0.30A
MG(a)4012X(e)-f10	12V	0.13A	MG(a)4005H(e)-f28	5V	0.35A
MG(a)4012Y(e)-f10	12V	0.16A	MG(a)4012X(e)-f28	12V	0.25A
MG(a)4024L(e)-f10	24V	0.06A	MG(a)4012Y(e)-f28	12V	0.38A
MG(a)4024M(e)-f10	24V	0.07A	MG(a)4012Z(e)-f28	12V	0.40A

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MG(a)4012U(e)-f28	12V	0.55A	MG(a)5012L(e)-f15	12V	0.07A
MG(a)4024X(e)-f28	24V	0.12A	MG(a)5012M(e)-f15	12V	0.10A
MG(a)4024Y(e)-f28	24V	0.15A	MG(a)5012H(e)-f15	12V	0.14A
MG(a)4024Z(e)-f28	24V	0.20A	MG(a)5012X(e)-f15	12V	0.20A
			MG(a)5012Y(e)-f15	12V	0.26A
MG(a)4012X(e)-f32	12V	0.38A	MG(a)5012Z(e)-f15	12V	0.35A
MG(a)4012Y(e)-f32	12V	0.45A			
MG(a)4012Z(e)-f32	12V	0.47A	MG(a)5012L(e)-f20	12V	0.09A
MG(a)4024X(e)-f32	24V	0.15A	MG(a)5012M(e)-f20	12V	0.12A
MG(a)4024Y(e)-f32	24V	0.20A	MG(a)5012H(e)-f20	12V	0.18A
MG(a)4024Z(e)-f32	24V	0.25A	MG(a)5012X(e)-f20	12V	0.24A
			MG(a)5012Y(e)-f20	12V	0.30A
MG(a)4012L(e)-f56	12V	0.90A	MG(a)5024L(e)-f20	24V	0.06A
MG(a)4012M(e)-f56	12V	1.20A	MG(a)5024M(e)-f20	24V	0.08A
MG(a)4012H(e)-f56	12V	1.50A	MG(a)5024H(e)-f20	24V	0.10A
MG(a)4012X(e)-f56	12V	2.00A	MG(a)5024X(e)-f20	24V	0.15A
MG(a)4505L(e)-f10	5V	0.12A	MG(a)6005L(e)-f10	5V	0.16A
MG(a)4505M(e)-f10	5V	0.15A	MG(a)6005M(e)-f10	5V	0.25A
MG(a)4505H(e)-f10	5V	0.18A	MG(a)6005H(e)-f10	5V	0.35A
MG(a)4505X(e)-f10	5V	0.25A	MG(a)6012L(e)-f10	12V	0.09A
MG(a)4512L(e)-f10	12V	0.09A	MG(a)6012M(e)-f10	12V	0.12A
MG(a)4512M(e)-f10	12V	0.10A	MG(a)6012H(e)-f10	12V	0.17A
MG(a)4512H(e)-f10	12V	0.12A	MG(a)6012X(e)-f10	12V	0.23A
MG(a)4512X(e)-f10	12V	0.13A	MG(a)6012Y(e)-f10	12V	0.30A
MG(a)4524L(e)-f10	24V	0.07A	MG(a)6024L(e)-f10	24V	0.08A
MG(a)4524M(e)-f10	24V	0.08A	MG(a)6024M(e)-f10	24V	0.11A
MG(a)4524H(e)-f10	24V	0.09A	MG(a)6024H(e)-f10	24V	0.13A
MG(a)4524X(e)-f10	24V	0.10A	MG(a)6024X(e)-f10	24V	0.19A
			MG(a)6024Y(e)-f10	24V	0.22A
MG(a)5005L(e)-f10	5V	0.11A			
MG(a)5005M(e)-f10	5V	0.18A	MG(a)6012L(e)-f15	12V	0.12A
MG(a)5005H(e)-f10	5V	0.26A	MG(a)6012M(e)-f15	12V	0.18A
MG(a)5005X(e)-f10	5V	0.35A	MG(a)6012H(e)-f15	12V	0.23A
MG(a)5012L(e)-f10	12V	0.08A	MG(a)6012X(e)-f15	12V	0.27A
MG(a)5012M(e)-f10	12V	0.10A	MG(a)6012Y(e)-f15	12V	0.37A
MG(a)5012H(e)-f10	12V	0.12A	MG(a)6012Z(e)-f15	12V	0.43A
MG(a)5012X(e)-f10	12V	0.19A	MG(a)6024L(e)-f15	24V	0.10A
MG(a)5024L(e)-f10	24V	0.07A	MG(a)6024M(e)-f15	24V	0.13A
MG(a)5024M(e)-f10	24V	0.08A	MG(a)6024H(e)-f15	24V	0.16A
MG(a)5024H(e)-f10	24V	0.09A	MG(a)6024X(e)-f15	24V	0.21A
MG(a)5024X(e)-f10	24V	0.10A	MG(a)6024Y(e)-f15	24V	0.26A

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MG(a)6024Z(e)-f15	24V	0.30A	MG(a)6024M(e)-f38	24V	0.25A
			MG(a)6024H(e)-f38	24V	0.38A
MG(a)6012L(e)-f20	12V	0.13A	MG(a)6024X(e)-f38	24V	0.50A
MG(a)6012M(e)-f20	12V	0.15A			
MG(a)6012H(e)-f20	12V	0.21A	MG(a)7012L(e)-f15	12V	0.10A
MG(a)6012X(e)-f20	12V	0.23A	MG(a)7012M(e)-f15	12V	0.13A
MG(a)6012Y(e)-f20	12V	0.27A	MG(a)7012H(e)-f15	12V	0.17A
MG(a)6012Z(e)-f20	12V	0.38A	MG(a)7012X(e)-f15	12V	0.22A
MG(a)6024L(e)-f20	24V	0.10A	MG(a)7012Y(e)-f15	12V	0.28A
MG(a)6024M(e)-f20	24V	0.12A	MG(a)7012Z(e)-f15	12V	0.41A
MG(a)6024H(e)-f20	24V	0.15A	MG(a)7012U(e)-f15	12V	0.58A
MG(a)6024X(e)-f20	24V	0.17A	MG(a)7024L(e)-f15	24V	0.10A
MG(a)6024Y(e)-f20	24V	0.19A	MG(a)7024M(e)-f15	24V	0.13A
MG(a)6024Z(e)-f20	24V	0.22A	MG(a)7024H(e)-f15	24V	0.16A
			MG(a)7024X(e)-f15	24V	0.18A
MG(a)6005L(e)-f25	5V	0.22A	MG(a)7024Y(e)-f15	24V	0.21A
MG(a)6005M(e)-f25	5V	0.30A	MG(a)7024Z(e)-f15	24V	0.25A
MG(a)6005H(e)-f25	5V	0.38A			
MG(a)6012L(e)-f25	12V	0.11A	MG(a)7012L(e)-f20	12V	0.14A
MG(a)6012M(e)-f25	12V	0.13A	MG(a)7012M(e)-f20	12V	0.19A
MG(a)6012H(e)-f25	12V	0.17A	MG(a)7012H(e)-f20	12V	0.27A
MG(a)6012X(e)-f25	12V	0.20A	MG(a)7012X(e)-f20	12V	0.36A
MG(a)6012Y(e)-f25	12V	0.26A	MG(a)7012Y(e)-f20	12V	0.43A
MG(a)6012Z(e)-f25	12V	0.31A	MG(a)7012Z(e)-f20	12V	0.63A
MG(a)6012U(e)-f25	12V	0.38A	MG(a)7024L(e)-f20	24V	0.08A
MG(a)6024L(e)-f25	24V	0.09A	MG(a)7024M(e)-f20	24V	0.11A
MG(a)6024M(e)-f25	24V	0.12A	MG(a)7024H(e)-f20	24V	0.16A
MG(a)6024H(e)-f25	24V	0.14A	MG(a)7024X(e)-f20	24V	0.20A
MG(a)6024X(e)-f25	24V	0.17A	MG(a)7024Y(e)-f20	24V	0.24A
MG(a)6024Y(e)-f25	24V	0.20A			
MG(a)6024Z(e)-f25	24V	0.22A	MG(a)7012L(e)-f25	12V	0.12A
MG(a)6024U(e)-f25	24V	0.29A	MG(a)7012M(e)-f25	12V	0.17A
MG(a)6048H(e)-f25	48V	0.05A	MG(a)7012H(e)-f25	12V	0.22A
MG(a)6048X(e)-f25	48V	0.08A	MG(a)7012X(e)-f25	12V	0.30A
MG(a)6048Y(e)-f25	48V	0.12A	MG(a)7012Y(e)-f25	12V	0.39A
MG(a)6048Z(e)-f25	48V	0.18A	MG(a)7012Z(e)-f25	12V	0.43A
			MG(a)7024L(e)-f25	24V	0.09A
MG(a)6012L(e)-f38	12V	0.35A	MG(a)7024M(e)-f25	24V	0.11A
MG(a)6012M(e)-f38	12V	0.50A	MG(a)7024H(e)-f25	24V	0.13A
MG(a)6012H(e)-f38	12V	0.75A	MG(a)7024X(e)-f25	24V	0.16A
MG(a)6012X(e)-f38	12V	0.95A	MG(a)7024Y(e)-f25	24V	0.20A
MG(a)6024L(e)-f38	24V	0.18A	MG(a)7024Z(e)-f25	24V	0.25A

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MG(a)8012L(e)-f15	12V	0.10A	MG(a)8012L(e)-f38	12V	0.40A
MG(a)8012M(e)-f15	12V	0.13A	MG(a)8012M(e)-f38	12V	0.54A
MG(a)8012H(e)-f15	12V	0.18A	MG(a)8012H(e)-f38	12V	0.80A
MG(a)8012X(e)-f15	12V	0.23A	MG(a)8012X(e)-f38	12V	1.20A
MG(a)8012Y(e)-f15	12V	0.28A	MG(a)8012Y(e)-f38	12V	1.80A
MG(a)8012Z(e)-f15	12V	0.35A	MG(a)8024L(e)-(f)38	24V	0.20A
MG(a)8024L(e)-f15	24V	0.08A	MG(a)8024M(e)-(f)38	24V	0.32A
MG(a)8024M(e)-f15	24V	0.10A	MG(a)8024H(e)-(f)38	24V	0.38A
MG(a)8024H(e)-f15	24V	0.12A	MG(a)8024X(e)-(f)38	24V	0.54A
MG(a)8024X(e)-f15	24V	0.16A	MG(a)8024Y(e)-f38	24V	0.90A
MG(a)8024Y(e)-f15	24V	0.19A	MG(a)8048M(e)-f38	48V	0.20A
MG(a)8024Z(e)-f15	24V	0.23A	MG(a)8048H(e)-f38	48V	0.24A
			MG(a)8048X(e)-f38	48V	0.34A
MG(a)8012L(e)-f20	12V	0.15A	MG(a)8048Y(e)-f38	48V	0.52A
MG(a)8012M(e)-f20	12V	0.21A			
MG(a)8012H(e)-f20	12V	0.27A	MG(a)9212L(e)-f25	12V	0.15A
MG(a)8012X(e)-f20	12V	0.36A	MG(a)9212M(e)-f25	12V	0.17A
MG(a)8012Y(e)-f20	12V	0.48A	MG(a)9212H(e)-f25	12V	0.25A
MG(a)8024L(e)-f20	24V	0.10A	MG(a)9212X(e)-f25	12V	0.32A
MG(a)8024M(e)-f20	24V	0.13A	MG(a)9212Y(e)-f25	12V	0.41A
MG(a)8024H(e)-f20	24V	0.19A	MG(a)9212Z(e)-f25	12V	0.47A
MG(a)8024X(e)-f20	24V	0.21A	MG(a)9212U(e)-f25	12V	0.54A
MG(a)8024Y(e)-f20	24V	0.28A	MG(a)9224L(e)-f25	24V	0.12A
			MG(a)9224M(e)-f25	24V	0.15A
MG(a)8005L(e)-f25	5V	0.28A	MG(a)9224H(e)-f25	24V	0.19A
MG(a)8005M(e)-f25	5V	0.32A	MG(a)9224X(e)-f25	24V	0.22A
MG(a)8005H(e)-f25	5V	0.45A	MG(a)9224Y(e)-f25	24V	0.27A
MG(a)8012L(e)-f25	12V	0.12A	MG(a)9224Z(e)-f25	24V	0.40A
MG(a)8012M(e)-f25	12V	0.15A	MG(a)9224U(e)-f25	24V	0.48A
MG(a)8012H(e)-f25	12V	0.24A	MG(a)9248X(e)-f25	48V	0.12A
MG(a)8012X(e)-f25	12V	0.39A	MG(a)9248Y(e)-f25	48V	0.16A
MG(a)8012Y(e)-f25	12V	0.42A	MG(a)9248Z(e)-f25	48V	0.20A
MG(a)8012Z(e)-f25	12V	0.54A	MG(a)9248U(e)-f25	48V	0.25A
MG(a)8012U(e)-f25	12V	0.66A			
MG(a)8024L(e)-f25	24V	0.09A	MG(a)9212L(e)-f38	12V	0.35A
MG(a)8024M(e)-f25	24V	0.11A	MG(a)9212M(e)-f38	12V	0.50A
MG(a)8024H(e)-f25	24V	0.16A	MG(a)9212H(e)-f38	12V	0.75A
MG(a)8024X(e)-f25	24V	0.23A	MG(a)9212X(e)-f38	12V	1.00A
MG(a)8024Y(e)-f25	24V	0.26A	MG(a)9212Y(e)-f38	12V	1.50A
MG(a)8024Z(e)-f25	24V	0.30A	MG(a)9212Z(e)-f38	12V	1.90A
MG(a)8024U(e)-f25	24V	0.48A	MG(a)9224L(e)-f38	24V	0.18A
			MG(a)9224M(e)-f38	24V	0.28A

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Bontek Compliance Laboratory

MG(a)9224H(e)-f38	24V	0.40A	MG(a)12024X(e)-f25	24V	0.45A
MG(a)9224X(e)-f38	24V	0.50A	MG(a)12024Y(e)-f25	24V	0.60A
MG(a)9224Y(e)-f38	24V	0.70A	MG(a)12024Z(e)-f25	24V	0.80A
MG(a)9224Z(e)-f38	24V	1.00A	MG(a)12024U(e)-f25	24V	1.00A
MG(a)9248M(e)-f38	48V	0.20A	MG(a)12048L(e)-f25	48V	0.10A
MG(a)9248H(e)-f38	48V	0.28A	MG(a)12048M(e)-f25	48V	0.15A
MG(a)9248X(e)-f38	48V	0.36A	MG(a)12048H(e)-f25	48V	0.20A
MG(a)9248Y(e)-f38	48V	0.54A	MG(a)12048X(e)-f25	48V	0.25A
			MG(a)12048Y(e)-f25	48V	0.30A
			MG(a)12048Z(e)-f25	48V	0.40A
Seven pieces fanlike			MG(a)12048U(e)-f25	48V	0.50A
MG(a)12012L(e)-f25	12V	0.30A			
MG(a)12012M(e)-f25	12V	0.38A	Seven pieces fanlike		
MG(a)12012H(e)-f25	12V	0.45A	MG(a)12012L(e)-f38	12V	0.20A
MG(a)12012X(e)-f25	12V	0.52A	MG(a)12012M(e)-f38	12V	0.28A
MG(a)12012Y(e)-f25	12V	0.68A	MG(a)12012H(e)-f38	12V	0.42A
MG(a)12012Z(e)-f25	12V	0.90A	MG(a)12012X(e)-f38	12V	0.60A
MG(a)12024L(e)-f25	24V	0.18A	MG(a)12012Y(e)-f38	12V	0.80A
MG(a)12024M(e)-f25	24V	0.23A	MG(a)12024L(e)-f38	24V	0.13A
MG(a)12024H(e)-f25	24V	0.30A	MG(a)12024M(e)-f38	24V	0.16A
MG(a)12024X(e)-f25	24V	0.42A	MG(a)12024H(e)-f38	24V	0.24A
MG(a)12024Y(e)-f25	24V	0.48A	MG(a)12024X(e)-f38	24V	0.34A
MG(a)12024Z(e)-f25	24V	0.60A	MG(a)12024Y(e)-f38	24V	0.46A
MG(a)12048H(e)-f25	48V	0.12A	MG(a)12024Z(e)-f38	24V	0.54A
MG(a)12048X(e)-f25	48V	0.18A	MG(a)12048L(e)-f38	48V	0.13A
MG(a)12048Y(e)-f25	48V	0.25A	MG(a)12048M(e)-f38	48V	0.17A
			MG(a)12048H(e)-f38	48V	0.20A
			MG(a)12048X(e)-f38	48V	0.27A
			MG(a)12048Y(e)-f38	48V	0.32A
			MG(a)12048Z(e)-f38	48V	0.39A
Three pieces fanlike			Three pieces fanlike		
MG(a)12012L(e)-f25	12V	0.40A	MG(a)12012L(e)-f38	12V	0.15A
MG(a)12012M(e)-f25	12V	0.50A	MG(a)12012M(e)-f38	12V	0.22A
MG(a)12012H(e)-f25	12V	0.65A	MG(a)12012H(e)-f38	12V	0.26A
MG(a)12012X(e)-f25	12V	0.90A	MG(a)12012X(e)-f38	12V	0.37A
MG(a)12012Y(e)-f25	12V	1.20A	MG(a)12012Y(e)-f38	12V	0.45A
MG(a)12012Z(e)-f25	12V	1.60A	MG(a)12012Z(e)-f38	12V	0.80A
MG(a)12012U(e)-f25	12V	2.00A	MG(a)12012U(e)-f38	12V	2.20A
MG(a)12024L(e)-f25	24V	0.20A	MG(a)12024L(e)-f38	24V	0.10A
MG(a)12024M(e)-f25	24V	0.25A	MG(a)12024M(e)-f38	24V	0.14A
MG(a)12024H(e)-f25	24V	0.35A	MG(a)12024H(e)-f38	24V	0.18A

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MG(a)12024X(e)-f38	24V	0.20A	MG(a)12024L(e)-f38(B)	24V	0.10A
MG(a)12024Y(e)-f38	24V	0.27A	MG(a)12024M(e)-f38(B)	24V	0.14A
MG(a)12024Z(e)-f38	24V	0.42A	MG(a)12024H(e)-f38(B)	24V	0.18A
MG(a)12024U(e)-f38	24V	1.10A	MG(a)12024X(e)-f38(B)	24V	0.20A
MG(a)12048L(e)-f38	48V	0.05A	MG(a)12024Y(e)-f38(B)	24V	0.27A
MG(a)12048M(e)-f38	48V	0.06A	MG(a)12024Z(e)-f38(B)	24V	0.42A
MG(a)12048H(e)-f38	48V	0.09A	MG(a)12024U(e)-f38(B)	24V	1.10A
MG(a)12048X(e)-f38	48V	0.12A			
MG(a)12048Y(e)-f38	48V	0.14A	MG(a)12048L(e)-f38(B)	48V	0.05A
MG(a)12048Z(e)-f38	48V	0.20A	MG(a)12048M(e)-f38(B)	48V	0.06A
MG(a)12048U(e)-f38	48V	0.60A	MG(a)12048H(e)-f38(B)	48V	0.09A
			MG(a)12048X(e)-f38(B)	48V	0.12A
Aluminum enclosure			MG(a)12048Y(e)-f38(B)	48V	0.14A
MG(a)12012L(e)-f38(B)	12V	0.15A	MG(a)12048Z(e)-f38(B)	48V	0.20A
MG(a)12012M(e)-f38(B)	12V	0.22A	MG(a)12048U(e)-f38(B)	48V	0.60A
MG(a)12012H(e)-f38(B)	12V	0.26A			
MG(a)12012X(e)-f38(B)	12V	0.37A			
MG(a)12012Y(e)-f38(B)	12V	0.45A			
MG(a)12012Z(e)-f38(B)	12V	0.80A			
MG(a)12012U(e)-f38(B)	12V	2.20A			

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ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Product Service

CERTIFICATE

No. B 06 07 31023 049

Holder of Certificate: **Protechnic Electric Co., Ltd.**
Liaobu Village
Longquan Industry, Xijiuwei,Territory,
511700 Dongguan City, Guangdong
PEOPLE'S REPUBLIC OF CHINA

Certification Mark:

Product: **Component fan**

The product was tested on a voluntary basis and complies with the following essential requirements. The certification mark shown above can be affixed on the product. The certification mark must not be altered in any way. See also notes overleaf.

Test report no.: 612106105301

Date, 2006-07-12

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TÜV SÜD Product Service GmbH · Zertifizierstelle · Ridlerstrasse 65 · 80339 München · Germany

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

CERTIFICATE
No. B 06 07 31023 049

Model(s):

MGa50 Series, MGa60 Series, MGa70 Series
Model Description:
MG T 50 12 L F - f 20
MG a b c d e - f g
a. Electric characteristic
A = Standard 2 Pin
T = Frequency generation 3pin
b. Fan dimension
50 = 50 x 50 mm Fan dimension
60 = 60 x 60 mm Fan dimension
70 = 70 x 70 mm Fan dimension
c. Input voltage
05 = 5 Vdc
12 = 12 Vdc
24 = 24 Vdc
d. Fan speed
L = Low speed
M = Medium speed
H = High speed
X = Very high speed
Y = Most high speed
Z = Extremely high speed
U = Ultra high speed
e. Bearing type
S = Sleeve bearing
B = Two ball bearings
C = One ball & one sleeve bearing
R = Rifle bearing
F = Fluid dynamic bearing
f. Version
f = A-Z or a-z for marketing purpose
g. Thickness of frame
25 = 25 mm
20 = 20 mm
15 = 15 mm
10 = 10 mm

Parameters:

Rated input voltage:	5, 12 or 24 Vdc
Rated input current:	See attachment
Protection class:	III
Max. ambient temperature:	50°C
Degree of protection against ingress of liquids:	Ordinary

Remark: When installing, all requirements of below mentioned test standards must be fulfilled.

Tested according to: EN 60950-1/A11:2004

Production Facility(ies): 31023, 47634

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Bill Li

Attachment to the Certificate **No. B 06 07 31023 049**

The following models of the DC Fan "MGa50 Series, MGa60 Series, MGa70 Series" will be covered by above certificate:

Taiwan

Model-#	DC Ratings	Model-#	DC Ratings
MGT5024XS-f10	24V, 0.10A	MGA6024ZF-f25	24V, 0.22A
MGT5024XB-f10	24V, 0.10A	MGA6024US-f25	24V, 0.29A
MGT5024XC-f10	24V, 0.10A	MGA6024UB-f25	24V, 0.29A
MGA6012LR-f10	12V, 0.09A	MGA6024UC-f25	24V, 0.29A
MGA6012MR-f10	12V, 0.12A	MGA6024UR-f25	24V, 0.29A
MGA6012MF-f10	12V, 0.12A	MGA6024UF-f25	24V, 0.29A
MGA6012HR-f10	12V, 0.17A	MGT6024LS-f25	24V, 0.09A
MGA6012HF-f10	12V, 0.17A	MGT6024LB-f25	24V, 0.09A
MGA6012XR-f10	12V, 0.23A	MGT6024LC-f25	24V, 0.09A
MGA6012XF-f10	12V, 0.23A	MGT6024LR-f25	24V, 0.09A
MGA6012YS-f10	12V, 0.30A	MGT6024LF-f25	24V, 0.09A
MGA6012YB-f10	12V, 0.30A	MGT6024MS-f25	24V, 0.12A
MGA6012YC-f10	12V, 0.30A	MGT6024MB-f25	24V, 0.12A
MGA6012YR-f10	12V, 0.30A	MGT6024MC-f25	24V, 0.12A
MGA6012YF-f10	12V, 0.30A	MGT6024MR-f25	24V, 0.12A
MGT6012LR-f10	12V, 0.09A	MGT6024MF-f25	24V, 0.12A
MGT6012LF-f10	12V, 0.09A	MGT6024HS-f25	24V, 0.14A
MGT6012MR-f10	12V, 0.12A	MGT6024HB-f25	24V, 0.14A
MGT6012MF-f10	12V, 0.12A	MGT6024HC-f25	24V, 0.14A
MGT6012HR-f10	12V, 0.17A	MGT6024HR-f25	24V, 0.14A
MGT6012HF-f10	12V, 0.17A	MGT6024HF-f25	24V, 0.14A
MGT6012XR-f10	12V, 0.23A	MGT6024XS-f25	24V, 0.17A
MGT6012XF-f10	12V, 0.23A	MGT6024XB-f25	24V, 0.17A
MGT6012YS-f10	12V, 0.30A	MGT6024XC-f25	24V, 0.17A
MGT6012YB-f10	12V, 0.30A	MGT6024XR-f25	24V, 0.17A
MGT6012YC-f10	12V, 0.30A	MGT6024XF-f25	24V, 0.17A
MGT6012YR-f10	12V, 0.30A	MGT6024YS-f25	24V, 0.20A
MGT6012YF-f10	12V, 0.30A	MGT6024YB-f25	24V, 0.20A
MGA6005LR-f10	5V, 0.16A	MGT6024YC-f25	24V, 0.20A
MGA6005LF-f10	5V, 0.16A	MGT6024YR-f25	24V, 0.20A
MGA6005MR-f10	5V, 0.25A	MGT6024YF-f25	24V, 0.20A
MGA6005MF-f10	5V, 0.25A	MGT6024ZS-f25	24V, 0.22A
MGA6005HR-f10	5V, 0.35A	MGT6024ZB-f25	24V, 0.22A
MGA6005HF-f10	5V, 0.35A	MGT6024ZC-f25	24V, 0.22A
MGT6005LR-f10	5V, 0.16A	MGT6024ZR-f25	24V, 0.22A
MGT6005LF-f10	5V, 0.16A	MGT6024ZF-f25	24V, 0.22A
MGT6005MR-f10	5V, 0.25A	MGT6024US-f25	24V, 0.29A
MGT6005MF-f10	5V, 0.25A	MGT6024UB-f25	24V, 0.29A
MGT6005HR-f10	5V, 0.35A	MGT6024UC-f25	24V, 0.29A
MGT6005HF-f10	5V, 0.35A	MGT6024UR-f25	24V, 0.29A
MGA6024LS-f10	24V, 0.08A	MGT6024UF-f25	24V, 0.29A
MGA6024LB-f10	24V, 0.08A	MGA7012LR-f15	12V, 0.10A
MGA6024LC-f10	24V, 0.08A	MGA7012LF-f15	12V, 0.10A
MGA6024LR-f10	24V, 0.08A	MGA7012MR-f15	12V, 0.13A
MGA6024LF-f10	24V, 0.08A	MGA7012MF-f15	12V, 0.13A
MGA6024MS-f10	24V, 0.11A	MGA7012HR-f15	12V, 0.17A
MGA6024MB-f10	24V, 0.11A	MGA7012HF-f15	12V, 0.17A
MGA6024MC-f10	24V, 0.11A	MGA7012XR-f15	12V, 0.22A
MGA6024MR-f10	24V, 0.11A	MGA7012XF-f15	12V, 0.22A
MGA6024MF-f10	24V, 0.11A	MGA7012YR-f15	12V, 0.28A
MGA6024HS-f10	24V, 0.13A	MGA7012YF-f15	12V, 0.28A
MGA6024HB-f10	24V, 0.13A	MGA7012ZR-f15	12V, 0.41A
MGA6024HC-f10	24V, 0.13A	MGA7012ZF-f15	12V, 0.41A
MGA6024HR-f10	24V, 0.13A	MGA7012US-f15	12V, 0.58A
MGA6024HF-f10	24V, 0.13A	MGA7012UB-f15	12V, 0.58A
MGA6024XS-f10	24V, 0.19A	MGA7012UC-f15	12V, 0.58A
MGA6024XB-f10	24V, 0.19A	MGA7012UR-f15	12V, 0.58A
MGA6024XC-f10	24V, 0.19A	MGA7012UF-f15	12V, 0.58A
MGA6024XR-f10	24V, 0.19A	MGT7012LR-f15	12V, 0.10A
MGA6024XF-f10	24V, 0.19A	MGT7012LF-f15	12V, 0.10A
MGT6024LS-f10	24V, 0.08A	MGT7012MR-f15	12V, 0.13A
MGT6024LB-f10	24V, 0.08A	MGT7012MF-f15	12V, 0.13A
MGT6024LC-f10	24V, 0.08A	MGT7012HR-f15	12V, 0.17A
MGT6024LR-f10	24V, 0.08A	MGT7012HF-f15	12V, 0.17A
MGT6024LF-f10	24V, 0.08A	MGT7012XR-f15	12V, 0.22A
MGT6024MS-f10	24V, 0.11A	MGT7012XF-f15	12V, 0.22A
MGT6024MB-f10	24V, 0.11A	MGT7012YR-f15	12V, 0.28A
MGT6024MC-f10	24V, 0.11A	MGT7012YF-f15	12V, 0.28A
MGT6024MR-f10	24V, 0.11A	MGT7012ZR-f15	12V, 0.41A
MGT6024MF-f10	24V, 0.11A	MGT7012ZF-f15	12V, 0.41A

Model Description:

MG T 50 12 L F - f 20
MG a b c d e - f g

a. Electric characteristic
A = Standard 2 Pin
T = Frequeney generation 3pin

b. Fan dimension
50 = 50 x 50 mm Fan dimension
60 = 60 x 60 mm Fan dimension
70 = 70 x 70 mm Fan dimension

c. Input voltage
05 = 5 Vdc
12 = 12 Vdc
24 = 24 Vdc

d. Fan speed
L = Low speed
M = Medium speed
H = High speed
X = Very high speed
Y = Most high speed
Z = Extremely high speed
U = Ultra high speed

e. Bearing type
S = Sleeve bearing
B = Two ball bearings
C = One ball & one sleeve bearing
R = Rifle bearing
F = Fluid dynamic bearing

f. Version
f = A-Z or a-z for marketing purpose

g. Thickness of frame
25 = 25 mm
20 = 20 mm
15 = 15 mm
10 = 10 mm

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Attachment to the Certificate **No. B 06 07 31023 049**

The following models of the DC Fan "MGa50 Series, MGa60 Series, MGa70 Series" will be covered by above certificate:

Taiwan

Model-#	DC Ratings	Model-#	DC Ratings
MGT6024HS-f10	24V, 0.13A	MGT7012US-f15	12V, 0.58A
MGT6024HB-f10	24V, 0.13A	MGT7012UB-f15	12V, 0.58A
MGT6024HC-f10	24V, 0.13A	MGT7012UC-f15	12V, 0.58A
MGT6024HR-f10	24V, 0.13A	MGT7012UR-f15	12V, 0.58A
MGT6024HF-f10	24V, 0.13A	MGT7012UF-f15	12V, 0.58A
MGT6024XS-f10	24V, 0.19A	MGA7024LS-f15	24V, 0.10A
MGA6012LC-f15	12V, 0.12A	MGA7024LB-f15	24V, 0.10A
MGA6012LR-f15	12V, 0.12A	MGA7024LC-f15	24V, 0.10A
MGA6012LF-f15	12V, 0.12A	MGA7024LR-f15	24V, 0.10A
MGA6012MC-f15	12V, 0.18A	MGA7024LF-f15	24V, 0.10A
MGA6012MR-f15	12V, 0.18A	MGA7024MS-f15	24V, 0.13A
MGA6012HC-f15	12V, 0.23A	MGA7024MB-f15	24V, 0.13A
MGA6012HR-f15	12V, 0.23A	MGA7024MC-f15	24V, 0.13A
MGA6012HF-f15	12V, 0.23A	MGA7024MR-f15	24V, 0.13A
MGA6012XS-f15	12V, 0.27A	MGA7024MF-f15	24V, 0.13A
MGA6012XB-f15	12V, 0.27A	MGA7024HS-f15	24V, 0.16A
MGA6012XC-f15	12V, 0.27A	MGA7024HB-f15	24V, 0.16A
MGA6012XR-f15	12V, 0.27A	MGA7024HC-f15	24V, 0.16A
MGA6012XF-f15	12V, 0.27A	MGA7024HR-f15	24V, 0.16A
MGA6012YS-f15	12V, 0.37A	MGA7024HF-f15	24V, 0.16A
MGA6012YB-f15	12V, 0.37A	MGA7024XS-f15	24V, 0.18A
MGA6012YC-f15	12V, 0.37A	MGA7024XB-f15	24V, 0.18A
MGA6012YR-f15	12V, 0.37A	MGA7024XC-f15	24V, 0.18A
MGA6012YF-f15	12V, 0.37A	MGA7024XR-f15	24V, 0.18A
MGT6012LC-f15	12V, 0.12A	MGA7024XF-f15	24V, 0.18A
MGT6012LR-f15	12V, 0.12A	MGA7024YS-f15	24V, 0.21A
MGT6012LF-f15	12V, 0.12A	MGA7024YB-f15	24V, 0.21A
MGT6012MR-f15	12V, 0.18A	MGA7024YC-f15	24V, 0.21A
MGT6012MF-f15	12V, 0.18A	MGA7024YR-f15	24V, 0.21A
MGT6012HC-f15	12V, 0.23A	MGA7024YF-f15	24V, 0.21A
MGT6012HR-f15	12V, 0.23A	MGA7024ZS-f15	24V, 0.25A
MGT6012HF-f15	12V, 0.23A	MGA7024ZB-f15	24V, 0.25A
MGT6012XS-f15	12V, 0.27A	MGA7024ZC-f15	24V, 0.25A
MGT6012XB-f15	12V, 0.27A	MGA7024ZR-f15	24V, 0.25A
MGT6012XC-f15	12V, 0.27A	MGA7024ZF-f15	24V, 0.25A
MGT6012XR-f15	12V, 0.27A	MGT7024LS-f15	24V, 0.10A
MGT6012XF-f15	12V, 0.27A	MGT7024LB-f15	24V, 0.10A
MGT6012YS-f15	12V, 0.37A	MGT7024LC-f15	24V, 0.10A
MGT6012YB-f15	12V, 0.37A	MGT7024LR-f15	24V, 0.10A
MGT6012YC-f15	12V, 0.37A	MGT7024LF-f15	24V, 0.10A
MGT6012YR-f15	12V, 0.37A	MGT7024MS-f15	24V, 0.13A
MGT6012YF-f15	12V, 0.37A	MGT7024MB-f15	24V, 0.13A
MGA6024LS-f15	24V, 0.10A	MGT7024MC-f15	24V, 0.13A
MGA6024LB-f15	24V, 0.10A	MGT7024MR-f15	24V, 0.13A
MGA6024LC-f15	24V, 0.10A	MGT7024MF-f15	24V, 0.13A
MGA6024LR-f15	24V, 0.10A	MGT7024HS-f15	24V, 0.16A
MGA6024LF-f15	24V, 0.10A	MGT7024HB-f15	24V, 0.16A
MGA6024MS-f15	24V, 0.13A	MGT7024HC-f15	24V, 0.16A
MGA6024MB-f15	24V, 0.13A	MGT7024HR-f15	24V, 0.16A
MGA6024MC-f15	24V, 0.13A	MGT7024HF-f15	24V, 0.16A
MGA6024MR-f15	24V, 0.13A	MGT7024XS-f15	24V, 0.18A
MGA6024MF-f15	24V, 0.13A	MGT7024XB-f15	24V, 0.18A
MGA6024HS-f15	24V, 0.16A	MGT7024XC-f15	24V, 0.18A
MGA6024HB-f15	24V, 0.16A	MGT7024XR-f15	24V, 0.18A
MGA6024HC-f15	24V, 0.16A	MGT7024XF-f15	24V, 0.18A
MGA6024HR-f15	24V, 0.16A	MGT7024YS-f15	24V, 0.21A
MGA6024HF-f15	24V, 0.16A	MGT7024YB-f15	24V, 0.21A
MGA6024XS-f15	24V, 0.21A	MGT7024YC-f15	24V, 0.21A
MGA6024XB-f15	24V, 0.21A	MGT7024YR-f15	24V, 0.21A
MGA6024XC-f15	24V, 0.21A	MGT7024YF-f15	24V, 0.21A
MGA6024XR-f15	24V, 0.21A	MGT7024ZS-f15	24V, 0.25A
MGA6024XF-f15	24V, 0.21A	MGT7024ZB-f15	24V, 0.25A
MGA6024YS-f15	24V, 0.26A	MGT7024ZC-f15	24V, 0.25A
MGA6024YB-f15	24V, 0.26A	MGT7024ZR-f15	24V, 0.25A
MGA6024YC-f15	24V, 0.26A	MGT7024ZF-f15	24V, 0.25A
MGA6024YR-f15	24V, 0.26A	MGA7012LS-f25	12V, 0.12A
MGA6024YF-f15	24V, 0.26A	MGA7012LB-f25	12V, 0.12A

Model Description:

MG	T	50	12	L	F	-	f	20
MG	a	b	c	d	e	-	f	g

a. Electric characteristic
A = Standard 2 Pin
T = Frequency generation 3pin

b. Fan dimension
50 = 50 x 50 mm Fan dimension
60 = 60 x 60 mm Fan dimension
70 = 70 x 70 mm Fan dimension

c. Input voltage
05 = 5 Vdc
12 = 12 Vdc
24 = 24 Vdc

d. Fan speed
L = Low speed
M = Medium speed
H = High speed
X = Very high speed
Y = Most high speed
Z = Extremely high speed
U = Ultra high speed

e. Bearing type
S = Sleeve bearing
B = Two ball bearings
C = One ball & one sleeve bearing
R = Rifle bearing
F = Fluid dynamic bearing

f. Version
f = A-Z or a-z for marketing purpose

g. Thickness of frame
25 = 25 mm
20 = 20 mm
15 = 15 mm
10 = 10 mm

TÜV ASIA LTD. TÜV SÜD TAIWAN

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Model	V dc	A
MG(a)4012X(e)-f32	12	0.38
MG(a)4012Y(e)-f32	12	0.45
MG(a)4012Z(e)-f32	12	0.47
MG(a)4024X(e)-f32	24	0.15
MG(a)4024Y(e)-f32	24	0.20
MG(a)4024Z(e)-f32	24	0.25
MG(a)4512L(e)-f10	12	0.09
MG(a)4512M(e)-f10	12	0.10
MG(a)4512H(e)-f10	12	0.12
MG(a)4512X(e)-f10	12	0.13
MG(a)4505L(e)-f10	5	0.12
MG(a)4505M(e)-f10	5	0.15
MG(a)4505H(e)-f10	5	0.18
MG(a)4505X(e)-f10	5	0.25
MG(a)4524L(e)-f10	24	0.07
MG(a)4524M(e)-f10	24	0.08
MG(a)4524H(e)-f10	24	0.09
MG(a)4524X(e)-f10	24	0.10
MG(a)5012L(e)-f10	12	0.08
MG(a)5012M(e)-f10	12	0.10
MG(a)5012H(e)-f10	12	0.12
MG(a)5012X(e)-f10	12	0.19
MG(a)5005L(e)-f10	5	0.11
MG(a)5005M(e)-f10	5	0.18
MG(a)5005H(e)-f10	5	0.26
MG(a)5005X(e)-f10	5	0.35
MG(a)5024L(e)-f10	24	0.07
MG(a)5024M(e)-f10	24	0.08
MG(a)5024H(e)-f10	24	0.09
MG(a)5024X(e)-f10	24	0.10
MG(a)6012L(e)-f10	12	0.09
MG(a)6012M(e)-f10	12	0.12
MG(a)6012H(e)-f10	12	0.17
MG(a)6012X(e)-f10	12	0.23
MG(a)6012Y(e)-f10	12	0.30
MG(a)6005L(e)-f10	5	0.16
MG(a)6005M(e)-f10	5	0.25
MG(a)6005H(e)-f10	5	0.35
MG(a)6024L(e)-f10	24	0.08
MG(a)6024M(e)-f10	24	0.11
MG(a)6024H(e)-f10	24	0.13
MG(a)6024X(e)-f10	24	0.19
MG(a)6024Y(e)-f10	24	0.22

NOMENCLATURE:

MG	A	30	12	X	B	-	F	10
1	2	3	4	5	6		7	8

1. Code

2. Electrical Characteristic
   - A: No Signal Input
   - T: Provided Signal Input

3. Fan Dimensions
   - 30: 30 x 30 mm
   - 37: 37 mm OD
   - 38: 38 mm OD
   - 40: 40 x 40 mm
   - 44: 44 mm OD
   - 45: 45 x 45 mm
   - 50: 50 x 50 mm
   - 51: 51 x 51 mm
   - 60: 60 x 60 mm
   - 70: 70 x 70 mm
   - 80: 80 x 80 mm
   - 92: 92 x 92 mm or 92 mm OD
   - 120: 120 x 120 mm

4. Voltage
   - 5: 5 V dc
   - 12: 12 V dc
   - 24: 24 V dc
   - 48: 48 V dc

5. Fan Speed
   - L: Low Speed
   - M: Medium Speed
   - H: High Speed
   - X: Very High Speed
   - Y: Most High Speed
   - Z: Extremely High Speed
   - U: Ultra High Speed

6. Bearing Type
   - B: Two ball Bearings
   - C: One ball and one sleeve Bearing
   - R: Rifle Bearing
   - **F: Fluid Dynamic Bearing**
   - S: Sleeve Bearing

7. • Version: may be A-Z or a-z for marketing purposes

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8. Fan Thickness
9: 9 mm
10: 10 mm
15: 15 mm
20: 20 mm
25: 25 mm
28: 28 mm
32: 32 mm
38: 38 mm
80: 80 mm

DC FAN LIFE EXPERIMENT REPORT

Representative Test P/N :
MGT6012YB-W10

Issued Date

15-Feb-06

PROTECHNIC ELECTRONIC CO., LTD Xinjiuwei Management Regin, Liaobu Town, Dongguan City, Guangdong, P.R.O. China

DC FAN LIFE EXPERIMENT REPORT

Available for these models with lower speed and same physical structure. All model may be followed by MGA or MGT series suffixes. This test report applies to 60x60x10 mm series as the right table.	MGT6012YB-W10	MGT6012LB-W10			
	MGT6012XB-W10				
	MGT6012HB-W10				
	MGT6012MB-W10				
Representative Test P/N : MGT6012YB-W10					
Equipment: Oven KX-08					

◎ L10 Expectancy: 50,000 hours minimum@ fan rated voltage and the temperature of 40℃, According to the equation for Weibull distribution, MTTF ≒ 7×L10 = 350,000 hours. And we rely on a zero failure Weibull test strategy and accelerated testing technique, to determine the total test time (t) for verifying the above life estimation by the equations,

$$t = 1.036 \times MTTF \times [(Br;c) \div n]^{0.91} \div A_F \text{ , and } A_F = 2^{(Ts-Tu)/10}$$

where, (Br;c) is Poisson distribution factor with the failure number of r equal to 0 and the decimal confidence level of c equal to 0.90(90%), and

Stress/ Elevated Temperature Ts (℃)	Unstress Temperature Tu (℃)	Acceleration Factor A_F	Quantity of Test Devices n (pcs)	Poisson Distribution Factor Br;c	Required test time with zero failure t (hours)	Actual test time with zero failure t (hours)	Verified MTTF 40 ℃ (hours)	Verified L_{10} 40 ℃ (hours)
90	40	32	30	2.303	1,096	1,482	473,294	67,613

Test Progress:

Date for Test Beginning	Date for Test Termination	Current Test Status			Current Total Test Time (hours)
2005/12/14 09:00	2006/2/14 09:00	☐ In process	☐ In process (exceed requested)	■ Termination	1,482

Herewith , we could assume as right on the basis of above test result. Besides, if the actual test time exceed the required, it comes out that those fans' L10 expectancy and MTTF are greater than the warrant. (MTTF : means Mean Time To Failures, it should be used in a non-repairable system setting. Now we show the MTTF in our life report, that's because we will not repair the failed fans during life experiment. MTBF: means Mean Time Between failures, it should be used in a repairable system setting. Basically , MTBF is equal to MTTF , they use same formula to work out a life data.)

Fan permission criteria for the measurement after test :
1. For current, the limit is less than spec.(+15 % max.)
2. For speed, the allowable descrete is less than 15%
3. For noise, the limit is less than spec.(max.) + 3 dB

Temperature for MTTF Estimation (℃)	Acceleration Factor A_F	Estimated MTTF (hours)	Estimated L_{10} (hours)
25	90.51	1,338,678	191,240
30	64.00	946,589	135,227
40	32.00	473,294	67,613
50	16.00	236,647	33,807
60	8.00	118,324	16,903
70	4.00	59,162	8,452
80	2.00	29,581	4,226
90	1.00	14,790	2,113
Test Result		■ **Accept** ☐ **Reject**	

LTR No.	Time-out for function test others (hours)	Issued Date	Report By	Approved By
C0512016	6	2006/2/15 10:50	Simon Lee	Charles Cheng

DC FAN LIFE EXPERIMENT REPORT

Available for these models with lower speed and same physical structure. All model may be followed by MGA or MGT series suffixes. This test report applies to 60x60x10 mm series as the right table.	MGT6012YB-W10	MGT6012LB-W10			
	MGT6012XB-W10				
	MGT6012HB-W10				
	MGT6012MB-W10				

Representative Test P/N : MGT6012YB-W10

Equipment: Oven KX-08

Date for Test Beginning	Date for Test Termination	Current Test Status			Current Total Test Time (hours)
2005/12/14 09:00	2006/2/14 09:00	☐ In process	☐ In process (exceed requested)	■ Termination	1,482

Test Data Between Initial Test and Final Test

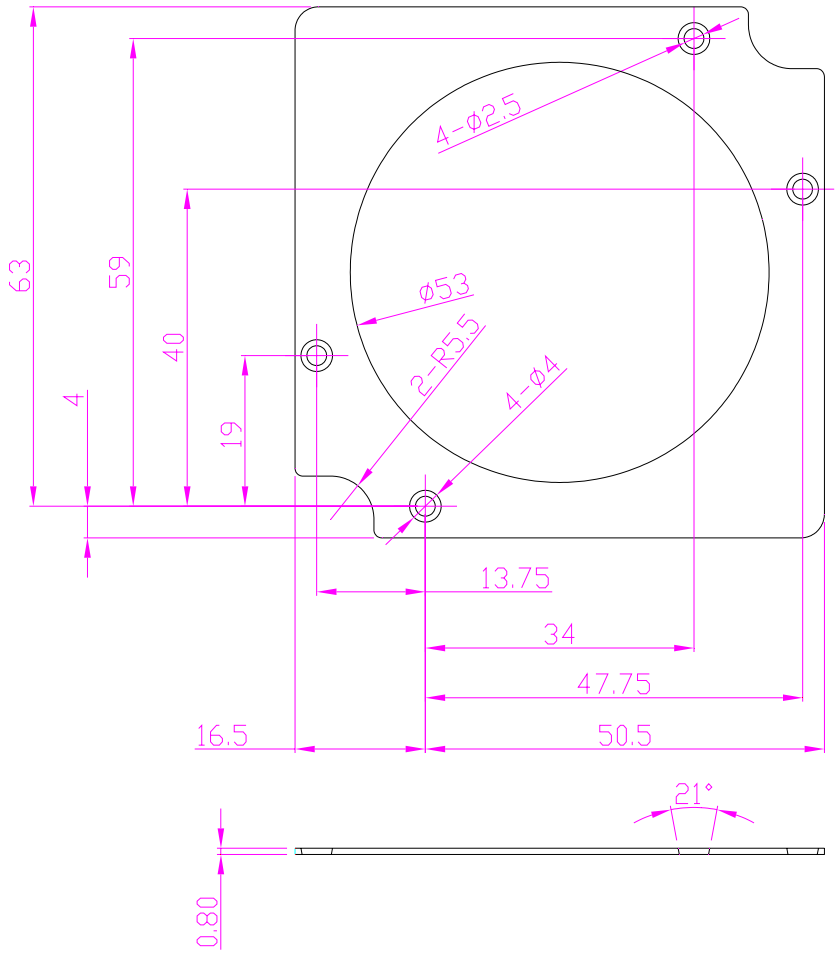
Item	Current (A)			Speed (RPM)			Noise(dBA)	
Spec.	0.300 Max.			5400 (4590-6210)			40.7	
Sample No.	Initial Test	Final Test	Deviation(%)	Initial Test	Final Test	Deviation(%)	Initial Test	Final Test
1	0.260	0.262	0.77	5,440	5,800	6.62	OK	OK
2	0.265	0.257	-3.02	5,400	5,720	5.93	OK	OK
3	0.268	0.255	-4.85	5,420	5,700	5.17	OK	OK
4	0.262	0.256	-2.29	5,380	5,760	7.06	OK	OK
5	0.272	0.260	-4.41	5,360	5,800	8.21	OK	OK
6	0.270	0.256	-5.19	5,400	5,680	5.19	OK	OK
7	0.266	0.258	-3.01	5,400	5,750	6.48	OK	OK
8	0.260	0.252	-3.08	5,450	5,800	6.42	OK	OK
9	0.265	0.255	-3.77	5,430	5,700	4.97	OK	OK
10	0.265	0.258	-2.64	5,400	5,820	7.78	OK	OK
11	0.265	0.260	-1.89	5,360	5,720	6.72	OK	OK
12	0.265	0.260	-1.89	5,380	5,660	5.20	OK	OK
13	0.262	0.258	-1.53	5,360	5,800	8.21	OK	OK
14	0.260	0.256	-1.54	5,400	5,850	8.33	OK	OK
15	0.260	0.255	-1.92	5,420	5,760	6.27	OK	OK
16	0.265	0.260	-1.89	5,400	5,700	5.56	OK	OK
17	0.266	0.255	-4.14	5,410	5,800	7.21	OK	OK
18	0.260	0.250	-3.85	5,430	5,720	5.34	OK	OK
19	0.265	0.260	-1.89	5,450	5,750	5.50	OK	OK
20	0.265	0.255	-3.77	5,420	5,800	7.01	OK	OK
21	0.260	0.252	-3.08	5,400	5,820	7.78	OK	OK
22	0.265	0.250	-5.66	5,400	5,720	5.93	OK	OK
23	0.262	0.250	-4.58	5,460	5,780	5.86	OK	OK
24	0.262	0.252	-3.82	5,460	5,800	6.23	OK	OK
25	0.270	0.260	-3.70	5,500	5,800	5.45	OK	OK
26	0.270	0.256	-5.19	5,410	5,830	7.76	OK	OK
27	0.260	0.250	-3.85	5,420	5,800	7.01	OK	OK
28	0.262	0.250	-4.58	5,400	5,850	8.33	OK	OK
29	0.262	0.256	-2.29	5,460	5,780	5.86	OK	OK
30	0.265	0.258	-2.64	5,420	5,750	6.09	OK	OK
X-Bar	0.265	0.257	-	5,408	5,753	-	-	-
σ	0.004	0.003	-	27	51	-	-	-

LTR No.	Time-out for function test others (hours)	Issued Date	Report By	Approved By
C0512016	6	2006/2/15 10:50	Simon Lee	Charles Cheng

Fan-Al Cover

Cover Material : Aluminum Alloy 1050

Finish : Clear Chromate



Fan-Al Cover Screw

Specification	Color	Quantity
M2*6 (F 頭)	Nickel-plating	4

Package

Gift box Size

108*98*59 (mm)

Single Weight =466 g

Gift box in carton

6 pcs in one layer.

Total 2 layers in one carton

12 pcs/ctn

Carton Size

340*210*144 (mm)

Gross Weight = 5.9 kg