

PRELIMINARY

SPECIFICATIONS

Model : UDQFMKH01

Specifications of products **MODEL: UDQFMKH01 1/10~10/10**
Figure of Products **MODEL: UDQFMKH01-ASE 1/1**

Please send us back two of specification sheets as soon as
you receive these sheets, with your signed approval in
order to make quick arrangement for production.

Approved by :

Date :

Kyushu Matsushita Electric Co., Ltd

Devices and Components Division, Oita Plant

Date: Nov. 06. 2000

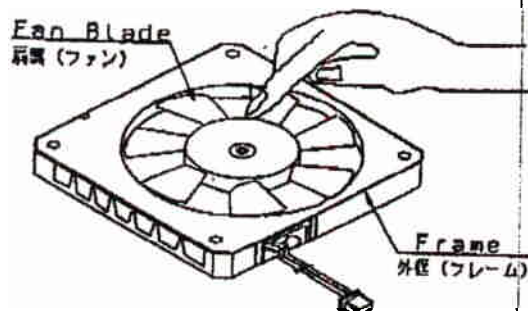
DIGI-KEY # P10086 (UDQFMKH01-PI)
P11087 (UDQFMKH01F-PI)

IMPORTANT HANDLING PRECAUTIONS 重要事項 冷却ファン取扱い上のおお願い **(MPU COOLING FAN UDAQC SERIES)**

1. Please do not touch or push fan blade with fingers or any other objects.
 Fan blade and bearings may be damaged and a noise defect may result.
 請不要用指或其它東西觸壓風葉及軸承因全產生噪音
 ファンを直接指その他で触ったり押さえないで下さい。
 軸受け部にストレスがかかり音不良の原因となります。

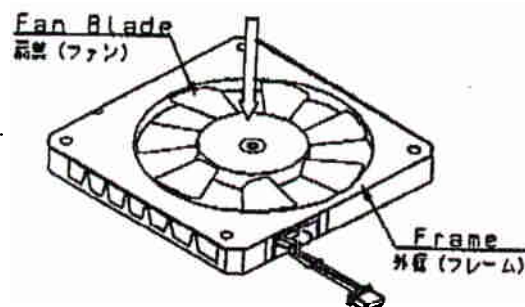
DON'T TOUCH!

不要觸摸
 触れないで下さい!



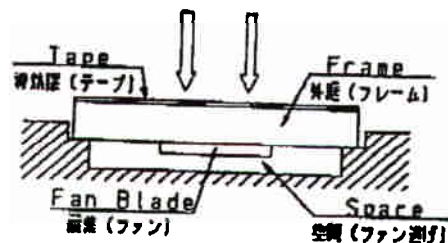
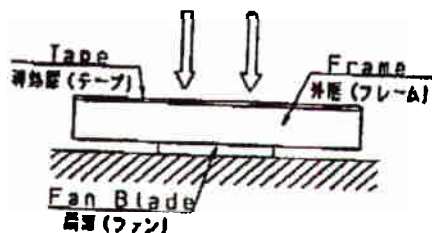
DON'T PUSH!

不要觸壓
 押さないで下さい!



2. Do not exert excessive force on the back of the fan when applying adhesive mounting tape.
 Fan blade extends beyond the front face of the frame.
3. Do not lay the fan face down on a flat surface to apply adhesive mounting tape.
 Allow a space for the clearance of the blade.
 当風扇倒立時請不要觸壓外框底部因風片及軸承可能造成損壞而產生噪音
 當於外框底部貼上膠片時請不要讓風葉觸・它物體
 ファンを下向きにした状態でフレームを押さないで下さい。
 軸受け部にストレスがかかり音不良の原因となります。
 フレーム底部に熱伝導接着テープ等を貼る時は下図のように必ずファンを逃がした状態で実施下さい。

DON'T PUSH! KEEP FAN BLADE NOT TO TOUCH OTHERS!
 不要觸壓 不要讓風葉觸其它物體
 押さないで下さい! ファンに負荷が加わらない様にして下さい!



KYUSYU MATSUSHITA ELECTRIC CO., LTD
 Tel (0978)-37-2111 Fax(0978)-37-3502

九州松下電器 株式会社 電子事業部 大分工場
 Tel (0978)-37-2111 Fax(0978)-37-3502

SPECIFICATIONS

No. 10-01

MODEL UDQFMKH01

△ PRODUCT SAFETY

△ WARNING

1) We can not guarantee our products if their application exceeds the limitation mentioned in this specifications.

2) Please check the safety of the product carefully when you install it into a machine.

① Check the safety of the motor in compliance with the application standard of your machine.

② Check the safety of the motor performance in error use under the installed situation, and also check the safety by reliability test.

If anything wrong happens, please report it to us before the shipment of the machines into the market.

3) This motor is not equipped with a protector such as thermofuse, or current-fuse or thermoprotector.

There may be smoking or ignition or electric shock by insulation degradation in cases of motor lock, motor lead short circuit, overload, overvoltage or other failure.

Please add the protection circuit on your machine.

4) This product has no alarm signal when the motor is locked.

Make the proper design to your product against the motor lock.

5) Please do not touch the live and rotation parts during operation.

There may be struck by electricity or injury.

6) Please be careful when opening and carrying the products.

There may be injured by falling to your feet.

7) If you hit or drop this product, the product may be damaged.

Please be careful when handling and installing this product.

8) Please do not injure this product including coil and lead wires when installing or wiring. There may be smoking or ignition.

△					
△					
△					
No.	DATE	No.	REASONS OF CHANGE		Writed CHECKED

Specifications of products

No.10-02

Specification Documents		Specifications of products		MODEL	UDQFMKH01		
				Issued	APPROVED	CHECKED	DESIGNED
				Nov. 06. 2000			
This specification is applied to the fan motor described below Model name : MPU cooling fan □35 Flat type Model number : UDQFMKH01 <u>Contents</u> 1. Rating 2. Construction 3. Performance 4. Temperature rise 5. Insulation resistance 6. Insulation strength 7. Noise level 8. Vibration level 9. Shockproof level 10. Life expectancy 11. Nameplate 12. Packing specifications 13. Specifications decision and design modification 14. Product use . 15. Test condition 16. Structure and material list 17. Name plate 18. Package							

No 10-03

MODEL UDQEMKH01

ITEMS		MODEL		000EMKH01	
1. Rating	1-1	Voltage	D. C. 5V		
	1-2	Ambient voltage	D. C. 3.1V~5.5V		
	1-3	Starting voltage	Start at D. C.	3.1V	at 25°C
	1-4	Rating time	Continuous rating		
	1-5	Rating current	140 mA	at 25°C	
	1-6	Suspended current	160 mA	at 25°C	
	1-7	Operating temperature	0 ~ 70 °C		
	1-8	Operating humidity	Less than 85 Rh%		
	1-9	Storage temperature	-20 ~ 70 °C		
	1-10	Speed	8,000 r/min	at 60°C	
	1-11	Max. flow rate	0.012 m ³ /min	N= 8,000	r/min
	1-12	Max. static pressure	32 Pa	N= 8,000	r/min
2. Construction	2-1	Construction and measurements of appearance According to the attached motor assembly drawing.			
	2-2	Bearings	Hydrodynamic Bearing		
	2-3	Direction of rotation	C. C. W. (see from fan side)		
	2-4	Weight	about	12 g	
	2-5	Install condition	Fan face upside or Fan face downside		

No 10-04

MODEL

UDOFMKH01

ITEMS

3. Performance

Free air performance (Rated voltage D.C. 5.0 V)

	at 25° C	at 60° C
Speed (r/min)	6,000 ±25%	8,000 ±20%
Current (mA)	170 Max	150 Max
Suspended Current (mA)	250 Max	

(Note)

1. After 2 minutes aging.
2. Install condition : Fan face upside
3. Please note the speed varies as the ambient temperature and the operation condition.
4. Please note the noise is change according to the speed.

Fan performance

	at 8,000r/min
Max. flow rate (m ³ /min)	0.009 Min
Max. static pressure (Pa)	24.5 Min

4. Temperature rise

Less than 105°C

by thermo-couple method at rated voltage, free air

5. Insulation resistance

More than 10 MΩ

by 500 volt D.C. megger, between motor lead and frame

6. Insulation strength

Motor is capable withstanding without breakdown, when A.C. 500 V is applied for one minute (or A.C. 600V one second) between motor lead and frame (limit current is 5mA)

7. Noise level

Less than 35 dB A-range (test condition is shown on another sheet)

8. Vibration level

Less than 5 m/s²
test condition is shown on another sheet

9. Shockproof level

980 m/s² (3 msec)

10. Life expectancy

at 60° C.....30,000 hours

Continuous driving on rated condition.

Mean time until the speed becomes 30% down from initial level.

(Note)

The specifications for noise and vibration levels the original value at the time of shipment and it is not the standard product life judgment.

11. Nameplate

Please refer to the nameplate drawing

12. Packing specifications

Please refer to the packing drawing

No 10-05

MODEL

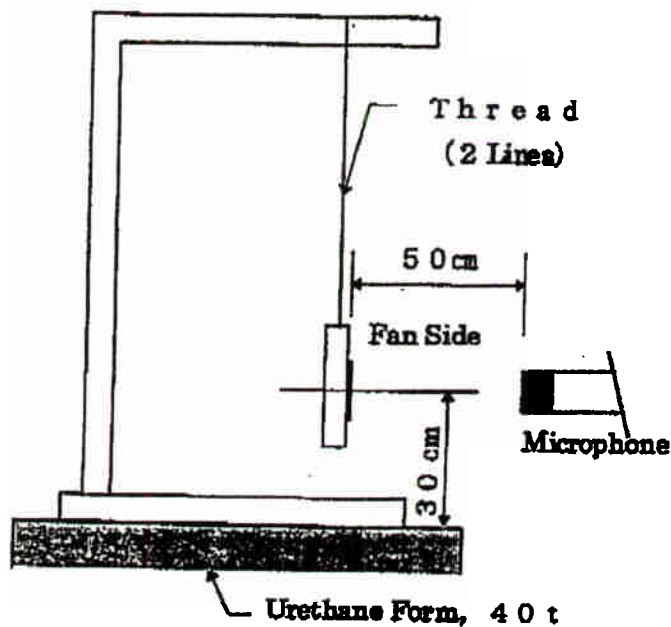
UDQFMKH01

ITEMS	
13. Specifications decision and design modification	13-1 Any items in this specifications shall be modified after obtaining your company's approval. 13-2 Any items not mentioned in this specifications are the same as the final samples approved by your champagne. Some items in this specifications may be modified as for as those items meet the content of this specifications. 13-3 If a certain item is not mentioned in this specifications and you think it necessary to discuss the item, please advise us in advance. Otherwise we consider that there is no specifications problem and start shipment as per our specifications. 13-4 Any modified items emerged from our mutual discussion in advance or from any other occasion shall be mentioned in this specifications, and we always consider this as the final guaranteed items. If some of those items are missing, please advise us immediately. 13-5 If we do not receive your order for your mass-produced models for over one year, we shall consider that we finish the mass-production of the model, and we will stop the mass-production of the model and it's service parts one year after we consider we finish the mass-production. If you need such model or service parts, please place the order of necessary quantity at one time by the time we finish those mass-production. If you have other request, please contact our sales company or our company within one year of final order, then we will help you.
14. Product use	14-1 In regard to the matching of performance, temperature rise, EMC, setting, life and the quality by dropping shock and etc. when built in your model, please check sufficiently for yourself. If there will be any accidents or problems related to the motor, about the product of accident, after checking the product mutually and solve the problem by discussing each other. 14-2 Please do not touch the fan with fingers or other. Fan holders or bearings may be damaged. 14-3 Please pay attention to handling, as internal circuit parts may damage due to static electricity and eddy current. 14-4 Please don't use it in not only corrosion gas (H₂S, SO₂, NO₂, Cl₂ etc.), but poisonous gas atmosphere, and the place where the substance which generates poisonous gas (specially organic silicon, cyanogen, formalin, phenol etc.). Please confirm if there is above substance or not. 14-5 We can not guarantee the performance with regard to safety and accident due to dust, a drop at water, dew, bugs, and so on. Please confirm it well in advance. 14-6 If you need to export the products, discuss each other about the necessary step. 14-7 In case of the formalities necessary for export, please inform KME in advance. 14-8 We design this fan to change DC voltage with stable DC power supply. If you use another method like PWM etc in order to change DC voltage

No 10-06

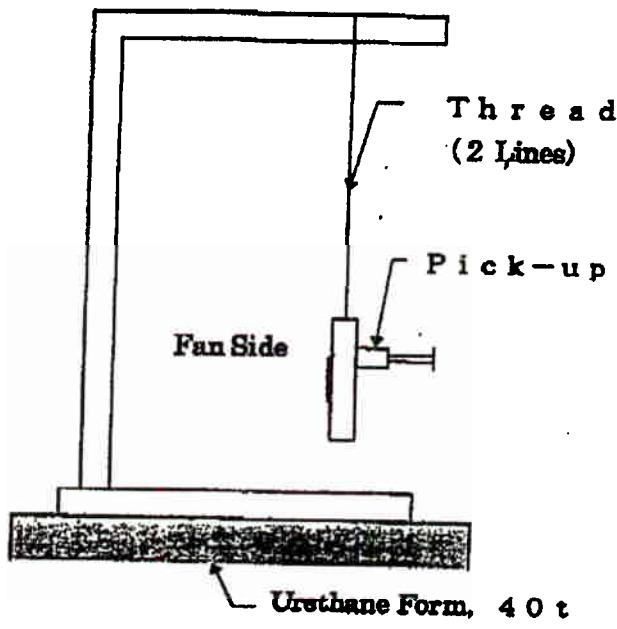
MODEL

UDQFMKH01

ITEM	CONTENTS
15. Test condition	15-1 Noise Test at 8,000 r/min  Thread (2 Lines) 50 cm Fan Side 30 cm Microphone Urethane Form, 40 t Note) 1. About the noise upper installed condition, please check that it is OK at the upper limit speed of the fan. (8,000r/min, +20%) 2. Ambient Noise shall be less than 20 dBA. Measuring instruments B & K

No 10-07

MODEL UDQFMKH01

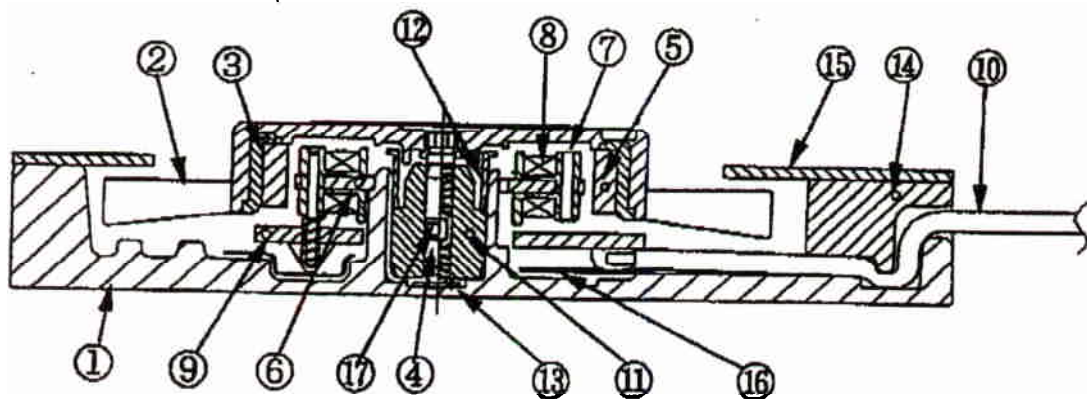
ITEM	CONTENTS				
	15-2 Vibration test at 8,000 r/min  Note) 1. About the vibration upper installed condition, please check that it is OK at the upper limit speed of the fan. (8,000r/min. +20%) Measuring instruments <table data-bbox="560 1501 1101 1596"><tr><td>Pick-up</td><td>RION PV-08C</td></tr><tr><td>Vibration Meter</td><td>RION VM-80</td></tr></table>	Pick-up	RION PV-08C	Vibration Meter	RION VM-80
Pick-up	RION PV-08C				
Vibration Meter	RION VM-80				

No. 10-08

MODEL UDQFMKH01

ITEMS

16. Structure and material list



No.	Parts	Material	Type	Grade	Maker	UL No.
1	Frame	Al alloy	ADC12	—	—	—
2	Fan	PET	BN9015	94V-0	TEIJIN LTD	E52857 (M)
		PBT	CN7015	—		
3	Rotor yoke	Steel	SECC, 0.5t	—	—	—
4	Shaft	Stainless-Steel	SUS420J2orSUS420F	—	—	—
5	Magnet	Rubber magnet	RMS-11Z	94V-0	TOKYO FERRITE MFG CO LTD	E64253 (S)
			ONG-OMU-1	94V-0	ONO GOMU KOGYO CO., LTD	E62753 (N)
6	Stator core	Si steel	—	—	—	—
7	Insulator	66 Nylon	I3G23	94HB	ASAHI CHEMICAL INDUSTRY	E48286 (M)
			T-663G-20	94HB eq.		
8	Coil	Copper	—	—	—	—
9	PWB	Glass epoxy	—	94V-0	Any R/C PWB'S	—
10	Lead wire	Heatresisting vinyl	UL1685 AWG28	VW-1 -F-	SUMITOMO ELECTRIC INDUSTRIES, LTD.	E41106
					SUMITOMO WIRING SYSTEMS, LTD.	E35984
					HITACHI CABLE, LTD.	E41447
11	Bearing	Brass	—	—	—	—
12	Ring	Stainless-Steel	—	—	—	—
13	Plate	Polyester Film	X30	—	TORAY INDUSTRIES INC.	—
14	Bush	6 Nylon or 66 Nylon	T-804	94V-2	TOYOBO CO LTD	E51743 (M)
			LEONA FG170	94V-0	ASAHI CHEMICAL INDUSTRY CO LTD	E48486 (M)
15	Cover	Al alloy	A1050P	—	—	—
16	Insulator	PPS film	t0.075	94VFM-0	TORAY INDUSTRIES INC.	E66423 (M)

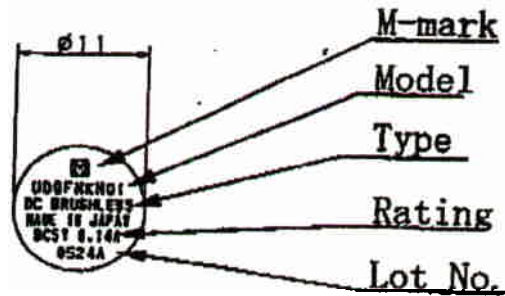
No. 10-09

MODEL UDQFMKH01

ITEMS

17. Name Plate

Scale (2:1)



Material : Polyester film

Lot No.

[ex. 0 5 2 4 A

Year _____ Day _____ Assembly line (A~Z)

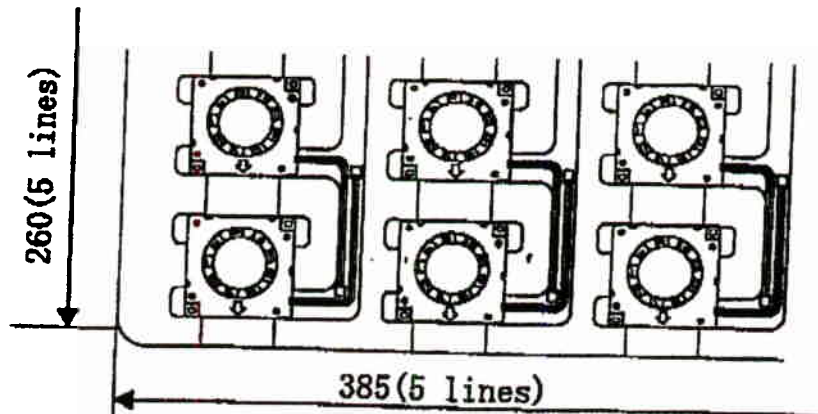
(Last letter) _____ Month Oct. - X
Nov. - Y
Dec. - Z

No. 10-10

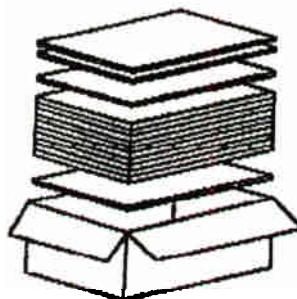
MODEL UDQFMKH01

ITEMS

18. Package

A. Tray $5 \times 5 = 25$ pcs/trayB. Inner box $(398 \times 273 \times 166)$

10trays/inner box = 250pcs/inner box



Pad A×2

Empty tray

Tray(10levels)

Pad A

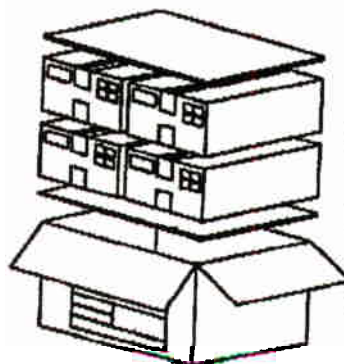
Inner box

Weight:about 4kg

品名	MPU冷却ファン
品番	
カスタマ	
物品コード	
入り数	
製造年月日	'00年11月 A
九州松下電器(株) デバイス事業部	

Indication(Inner box)

C. Outer box

 $250\text{pcs/inner box} \times 4 = 4$ inner box/outer box= 1000pcs/outer box 

Pad B

Inner box

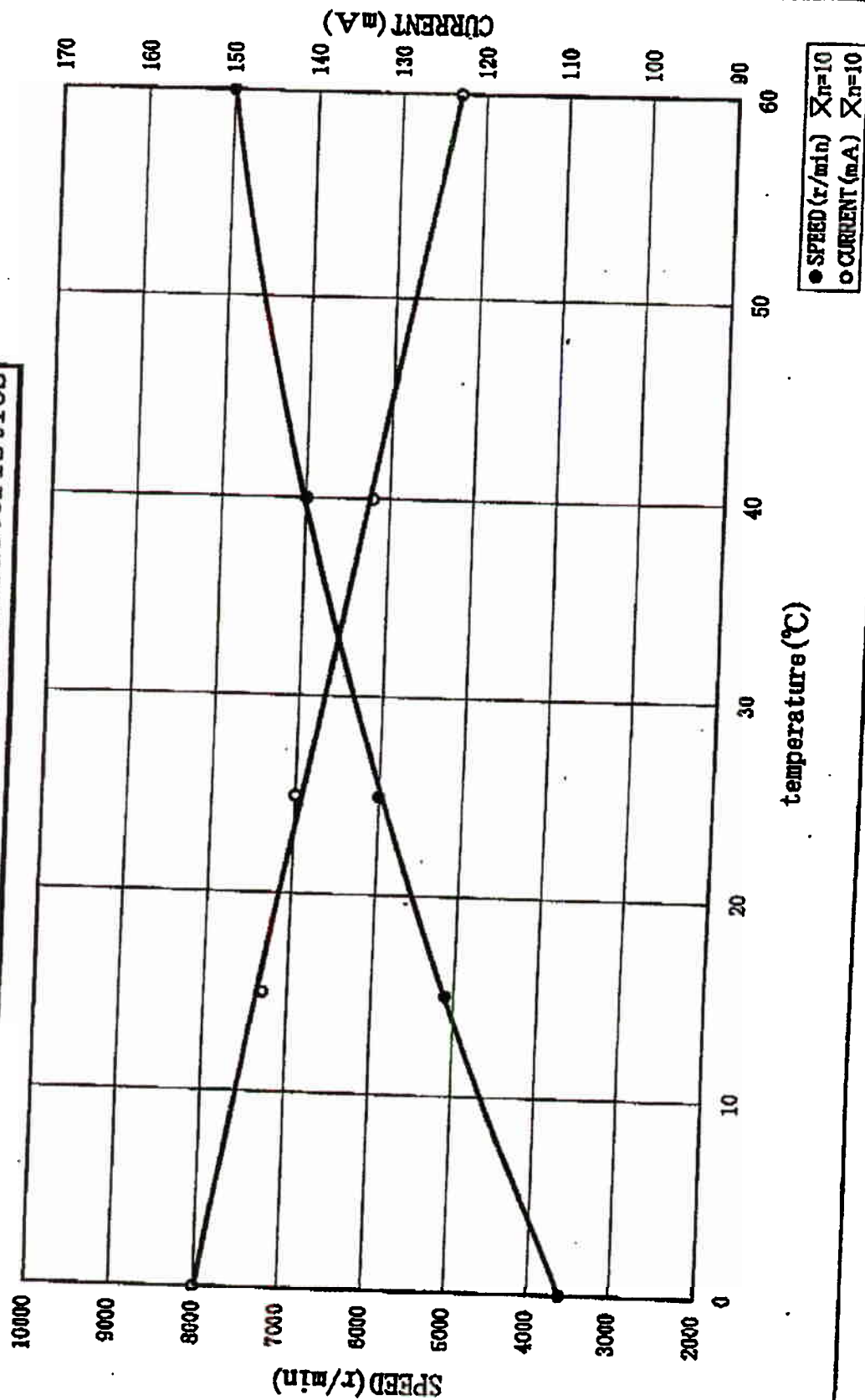
Pad B

Outer box

Weight:about 18kg

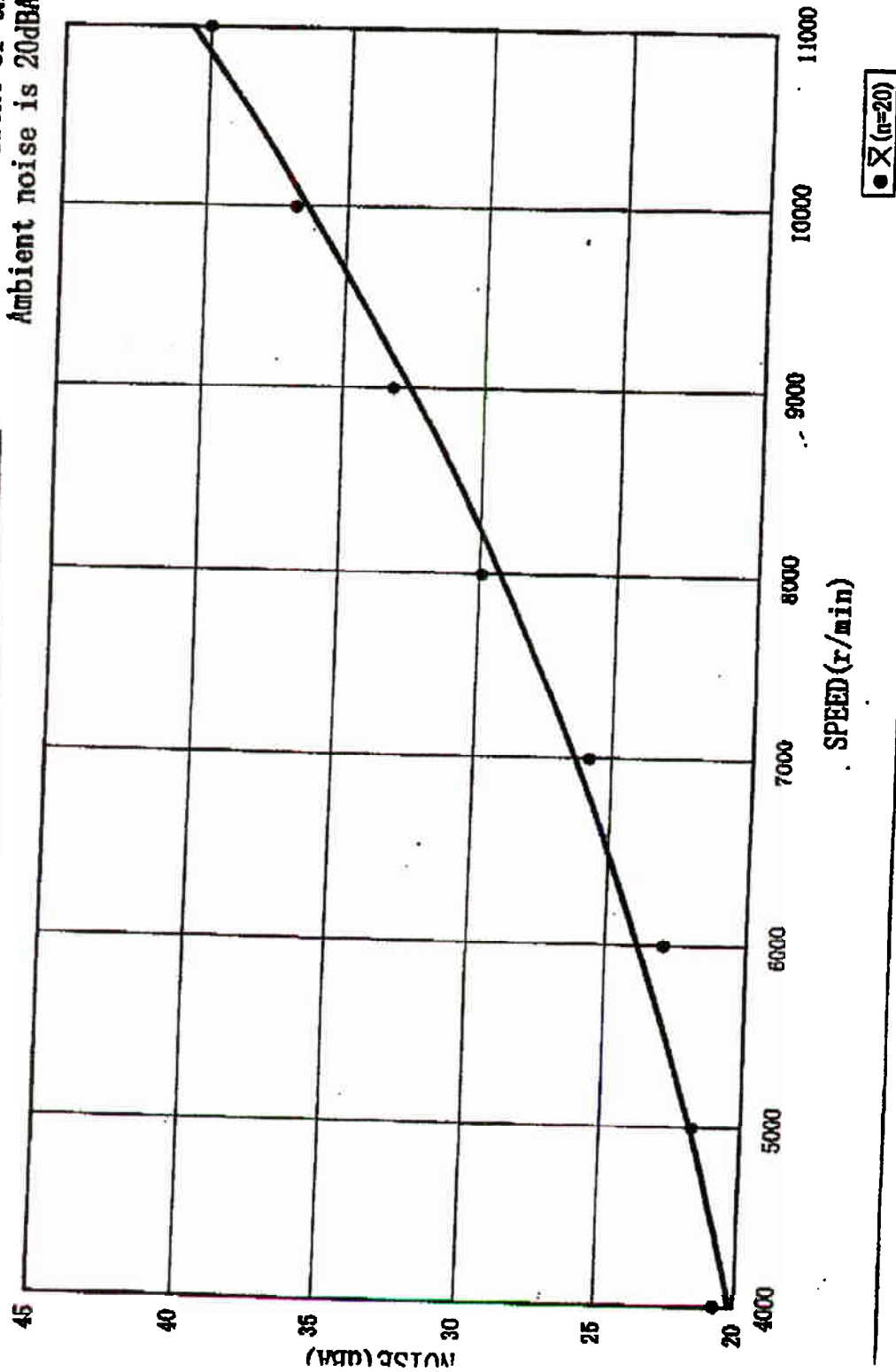
MPU Cooling Fan	
Model	
Quantity	pcs
Kyushu Matsushita Electric Co., Ltd	

Indication(Outer box)

UDQFMKH01 temperature characteristics

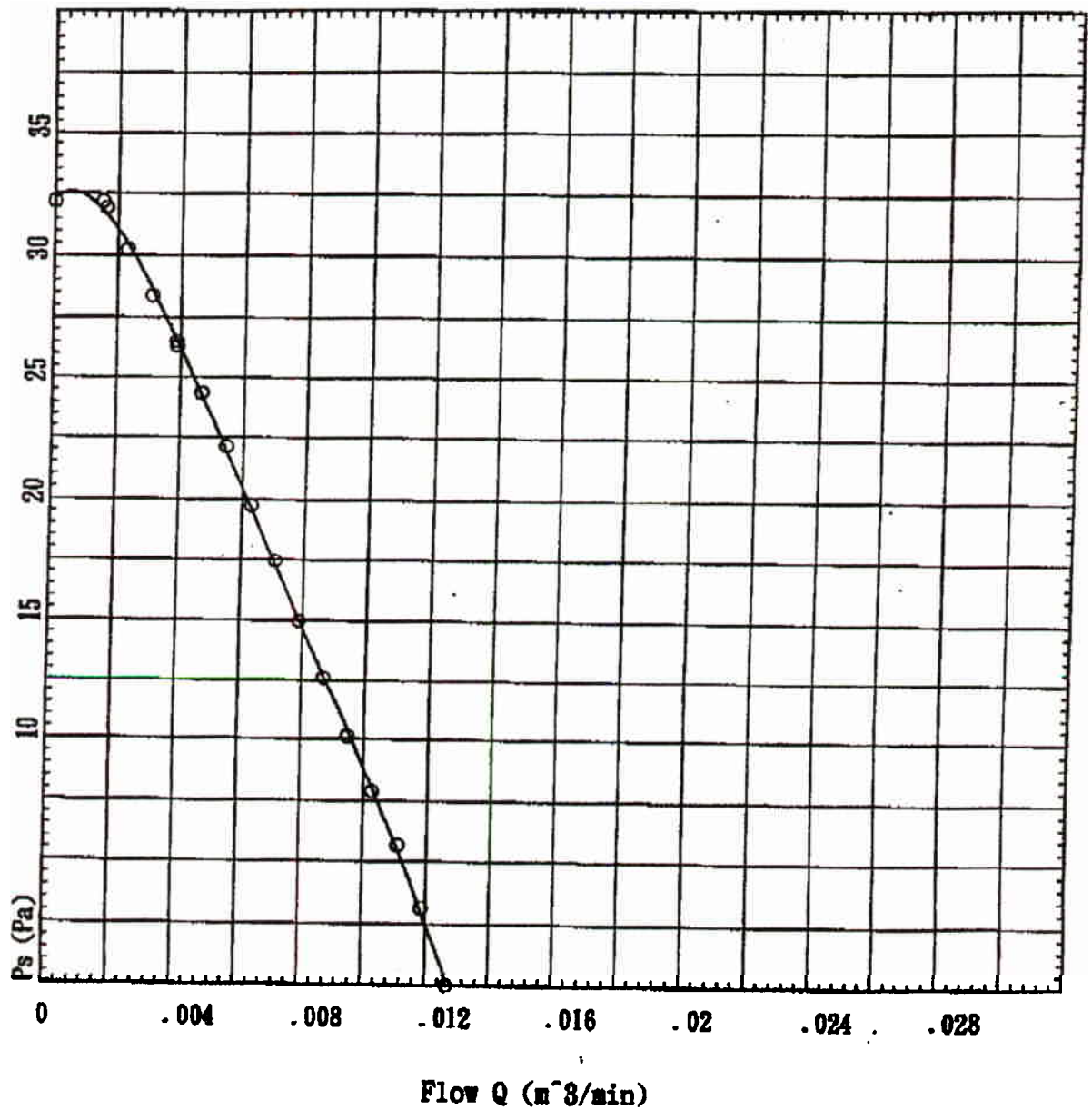
Measurement Condition
At 50cm in front of the fan
Ambient noise is 20dBA

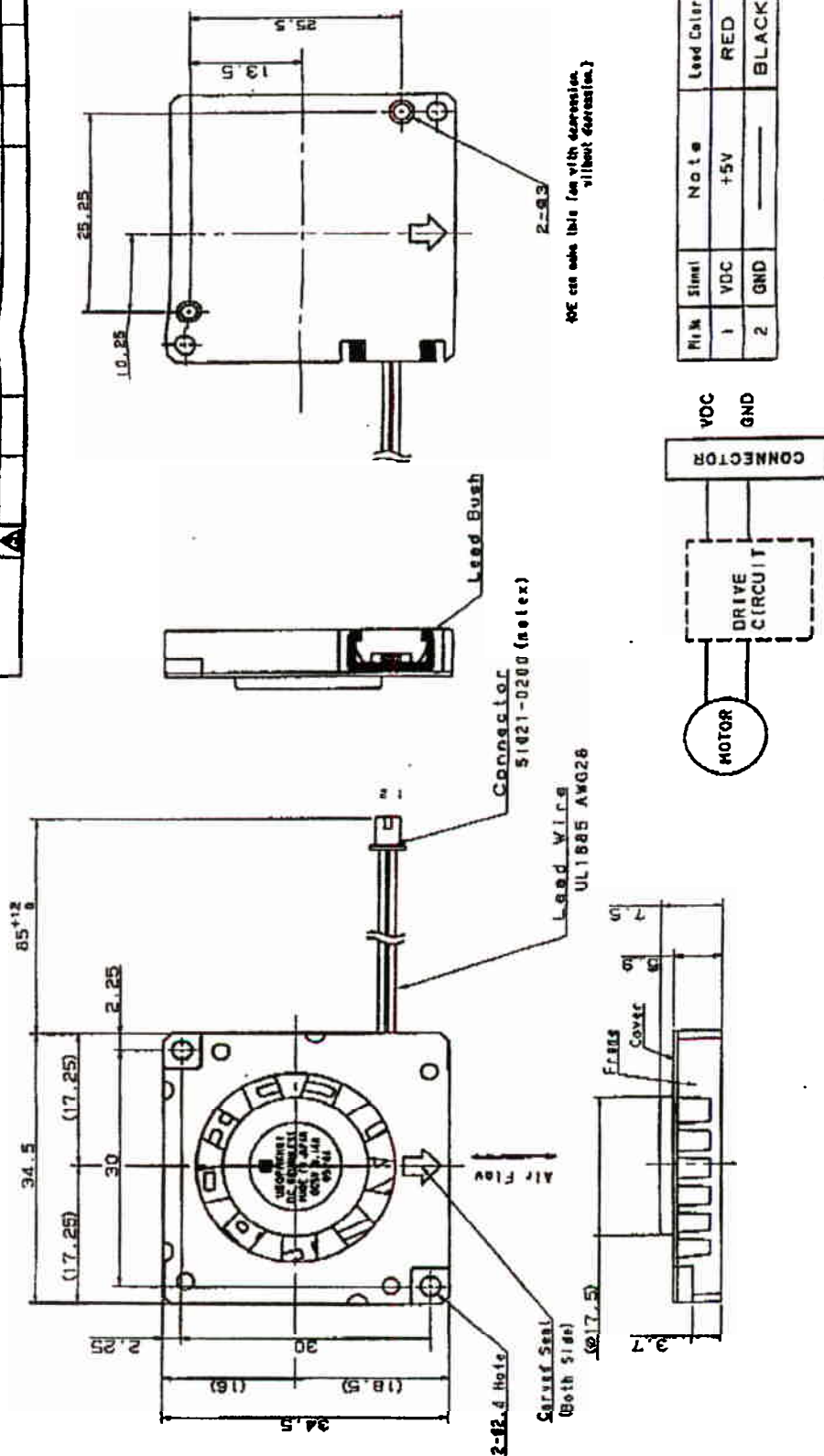
UDQFMKH01 SPEED—NOISE



< FAN TEST DATA >

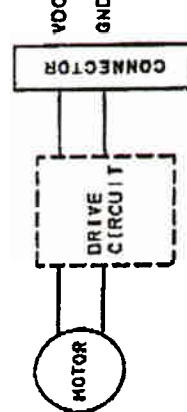
Mark	File name	Model name	Date	Source	Remarks
o	MKH01_60	UDQFMKH01	99/10/14	DC5V	_8000r/min(Free Air)





PIN No.	Signal	Notes	Lead Color
1	VDC	+5V	RED
2	GND	—	BLACK

Contract Price Agreement

[illegible]

Note)

1. Please do not touch and push Fan blade with fingers or others. And it causes noise defect.
Fan blade and Bearing may be damaged.
2. Please do not push the bottom of frame at Fan upside down condition.
Fan blade and Bearing may be damaged. It causes noise defect.