



維盟科技有限公司
Ewowave Technology Co., Ltd.

規格書 / Specification

Description:	BLDC Vibration Motor
Part No.:	VG0825S10WXX
Date:	2015/07/29

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Part Number		Company	EVOWAVE	Approval No.	B0825S-0720
Specification	Φ8 x 2.5T	Name of applied Model	VG0825S10WXX	Enactment	2015.07.20
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1. 이력 REVISION HISTORY

REV No.	Date	Description	Inspector	Designed	Approved
00	2015.07.10	New			T.B PARK

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2. 적용/ Scope

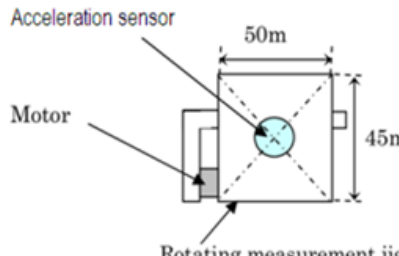
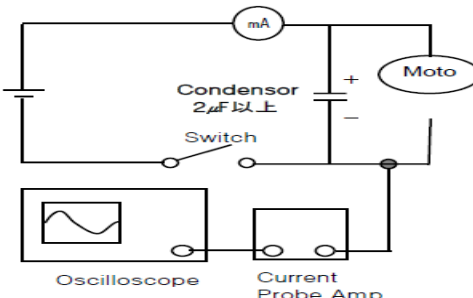
본 사양은 영진 하이텍에서 생산하는 motor로 Pager or 휴대폰용으로 VG0825S10WXX 진동 Motor에 적용된다.

This specification is applies to VG0825S10WXX vibration motors to be used for pagers or mobile telephone.

3. 목차/ Contents

No.	Item	Specification
3-1	사용전압범위 Operating Voltage Range	DC 2.5V ~ 4.0V
3-2	보존온도범위 Storage Temperature Range	(-)40 ~ (+)85℃
3-3	사용온도범위 Operating Temperature Range	(-)30 ~ (+)60℃ 그러나, -30℃에서 +25℃에비해 7-3항 정격 회전수 약 45%감소 현상 있습니다 However, there is 45% decrease of rated load speed of the section 7-3 at -30℃ compared to +25℃.
3-4	사용위치 Operating Position	전 방향 All Direction

4. 표준시험조건/ Standard Test Condition

No.	Item	Specification
4-1	온도 Temperature	25±3℃
4-2	습도 Humidity	65%±20% RH
4-3	측정전압 Measurement Voltage	DC3.0V
4-4	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>표준 측정 상태 Standard Measurement State</p> </div> <div style="text-align: center;">  <p>검사회로도 Inspection Circuit Diagram</p> </div> </div> <p>- Jig : 50x46x45mm [Material is POM] - Weight: 150g - The vibrator is Clamped firmly (0.5~1Kg pressure) on a test fixture</p>	

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5. 판정환경조건 Judgment Environmental Condition

NO	Item	Condition
5-1	온도 Temperature	25±3℃
5-2	습도 Humidity	65%±20%RH

6. 시험오차범위 Test Tolerance

시험 조건이나 장비는 별도 지정이 없는 한 다음의 조건을 만족 해야 한다.

Test set-ups and equipment shall be capable of maintaining following condition, unless otherwise specified.

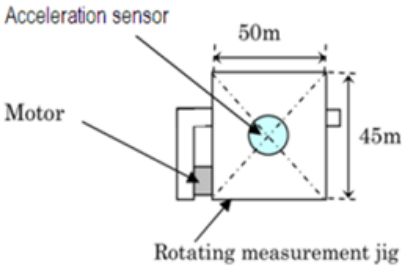
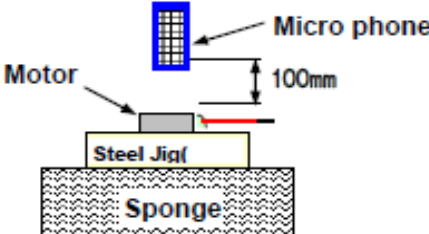
NO	Item	Condition
6-1	상온/상습 Room Temperature & Humidity	20±15℃ /65±20%RH
6-2	항온조 온도 Test Chamber Temperature	Limits ±3℃
6-3	전압 Voltage	Limits ±0.15V

7. 전기적 특성 Electrical Characteristics

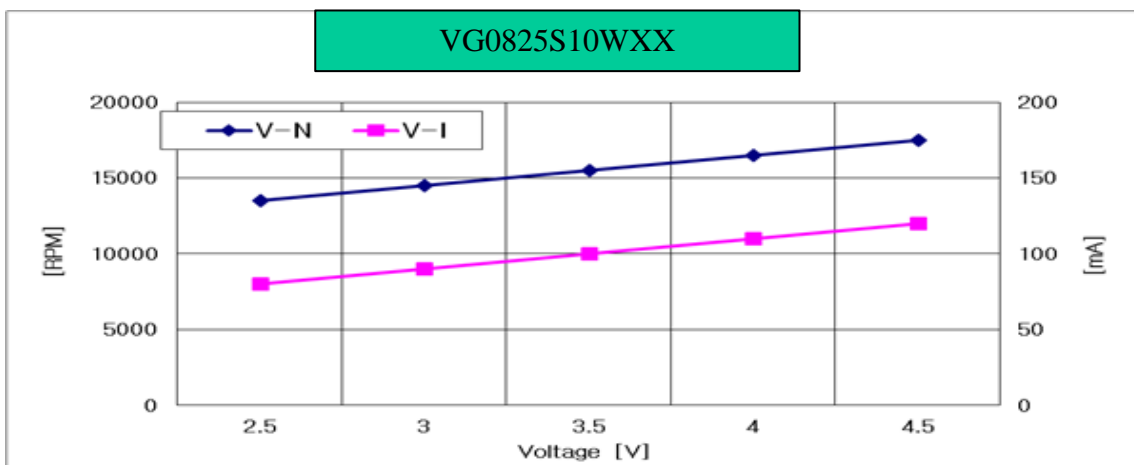
No	Item	Test Condition	Condition
7-1	정격전압/ Rated Voltage	.	DC 3.0V
7-2	회전방향/ Rotating Direction	CW [Lead Wire Red(+), Black(-)에 연결기준] CW [Lead Wire Red to (+), Black to (-)]	CW
7-3	정격 회전수 / Rated Load Speed	4항의 표준측정조건기준으로 한다	15,000 ± 3,500 rpm
7-4	정격전류/ Rated Load Current	It is based on the standard measurement condition of the section 4.	95 mA max
7-5	기동전류 /Starting Current	Rising & Falling 측정조건은 11항으로 한다	150 mA max
7-6	Rising Time (진동력 50%)		140 ms max
7-7	Falling Time(진동력 50%)	Rising & Falling condition of the section 11.	80 ms max
7-8	기동전압 /Starting Voltage	Motor를 4-1, 4-2, 4-4항의표준측정 조건에서 On/Off . Motor On/Off test based on the standard measurement condition of the section 4-1, 4-2, and 4-4.	DC 2.6 V max
7-9	절연전압/ Insulation Voltage	단자와 모터의 Case 사이를 절연 저항계로 DC100V 메가로 측정 . Measured between terminal and case with DC100V Megger .	10 MΩ min

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8. 기계적특성 Mechanical Characteristics

NO	Item	Specification	Condition
8-1	진동력 Vibration Force	<ul style="list-style-type: none"> - 50x46x45mm [Material is POM] - Weight : 150g -The vibrator is Clamped firmly (0.5~1Kg pressure) on a test fixture, 	<p>7-3항의 회전수에 준한다. It is referred to the rated load speed of the section 7-3</p>
8-2	기계적 소음 Mechanical Noise	<ul style="list-style-type: none"> - 고정방법:모터는 양면Tape에의해 지그에 고정된다 - Motor shall be fixed on Jig by adhesive tape - 지그재질은 SUS-304이다 - Jig Material 	<p>50dB 이하. 50dB MAX * 암소음 24dB 이하</p>
8-3	중량 Weight		약 0.90g about 0.90g

9. 특성 Graph. Characteristic Graph



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10. 신뢰성 시험 Reliability Test

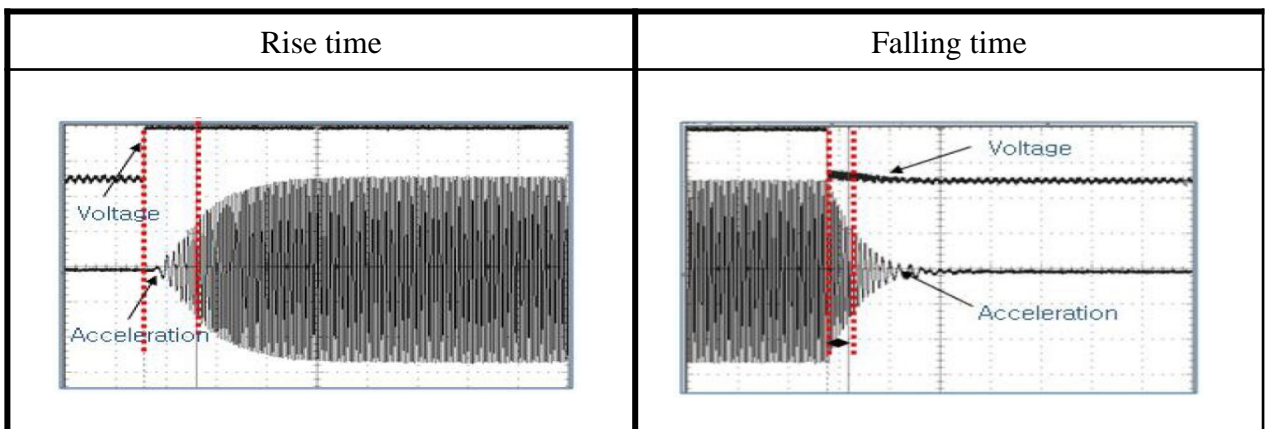
NO	Item	Test Condition			Specification
		Item	상온회전수명 Room Temp. & Humi. L/T	고온고습회전수명 High Temp. & Humi. L/T	
10-1	상온회전수명 Room Temperature & Humidity Life Test				-정격 회전수 : 초기치에 +40, -20% -Rated Load Speed: Initial value +40, -20% 또는 정격 회전수 내 Or within rated load speed -정격전류: 초기치에 ±30% -Rated Load Current: Initial value ±30% --기타 The others: 7-6,7-7항의 조건에 따른다 - The others: Conform to the section 7-6 and 7-7.
10-2	고온고습회전수명 High Temperature & Humidity Life Test	Voltage	DC 3.0V	DC 3.0V	
		Temperature	20±15℃	40℃	
		Humidity	65±20% RH	90% RH	
		Life cycles	1,000,000 cycles	300,000 cycles	
		Duty Cycle	0.5 sec ON / 0.5 sec OFF	0.5 sec ON / 0.5 sec OFF Motor shall be fixed on Jig by adhesive tape. (Refer to the section 4-4)	
10-3	고온고습통전 (복합시험) Composite Test	정격 전압, 정격 부하에서 20 ℃ 65 % RH, 10 시간 연속 운전시킨 후 60 ℃ 90 % RH에서 500h 방치한다 .Conduct the continuous running for 10 hours as following Then storage at 60℃ 90% for 500hours			-정격회전수 : 정격 회전수 또는 초기치에 +40, -20% -정격전류 : 초기치에 ±30%
10-4	저온방치시험 Low Temperature Storage Performance	-40℃, 500시간 저온 보관후 상온 상습에서 4시간 방치후 측정。 Exposed to -40℃ for 500 hours and then room temperature for 4 hours.			-정격 회전수: 정격 회전수 또는 초기치에 ±20% (Rated Load Speed: Initial value ±20%, or within rated load speed)
10-5	고온 방치시험 High Temperature Storage Performance	-85 ℃, 60 % RH 500 시간 보관 후 상온 상습에서 4 시간 방치 후 측정 -Exposed to +85℃, 60%RH for 500 hours and then room temperature for 4 hours.			-정격전류: 초기치에 +20% (Rated Load Current: Initial value +20%) -기타 The others: 7-6,7-7항의 조건에 따른다 (Conform to the section 7-6 and 7-7.)
10-6	고온고습방치시험 High Temperature and Humidity Storage Performance	-온도 60 ℃, 습도 90 % RH에서 500 시간 방치 상온 상습에서 4 시간 방치 후 측정 -Exposed to +60℃, 90%RH for 500 hours and then room temperature for 4 hours.			-육안 검사에 의한 상처가 없는 것, 녹, 얼룩 없는 것. 또는 변형이 없을 것. (No scar, rust, stain, or deformation by visual inspection.)

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10. 신뢰성 시험 Reliability Test

NO	Item	Test Condition	Specification
10-7	열충격 시험 Thermal Shock Test	-40 ℃와 85 ℃, 각 30 분간 전체 200cycles로 구성한다. (1cycle = 1시간) Total 200cycles at -40℃ and +85℃ for 30min each (1cycle=1 H) -시료 변경시간 < 5분 Temperature Change Time < 5min -상온상습에서 4시간방치후 측정 Motor shall be measured after exposure at room temperature for 4 hours.	-정격 회전수 : 정격회전수 또는 초기치에 ±20% -Rated Load Speed: Initial value ±20%, or within rated load speed -정격전류: 초기치에 +20% -Rated Load Current: Initial value +20%
10-8	낙하시험 Drop Test	모터를 약 130g의 Dummy set에 고정한 상태에서 150cm 높이에서 콘크리트에 6면 기준 각 면 10 회씩 총 60 회 자유 낙하 Dummy set (about 130g) motor shall be dropped Onto concrete plate. 10times each side of 6 directions from a height of 150 cm, total 60 times.	-기타 The others: 7-6, 7-7항의 조건에 따른다 (Conform to the section 7-6 and 7-7.) -육안 검사에 의한 상처가 없는 것, 녹, 얼룩 없는 것. 또는 변형이 없을 것. (No scar, rust, stain, or deformation by visual inspection.)
10-9	내 진동시험 Vibration Test	모터를 표준 포장 상태에서 진동수 10Hz ~ 55Hz. 진폭 x, y, z 3 방향 각 2 시간, 총 6 시간 더한다. Standard-packed motor is subjected to sine wave 10Hz~55Hz. X, Y, Z directions for 2 hours each, total 6 hours.	

11. Rising & Falling Test Condition

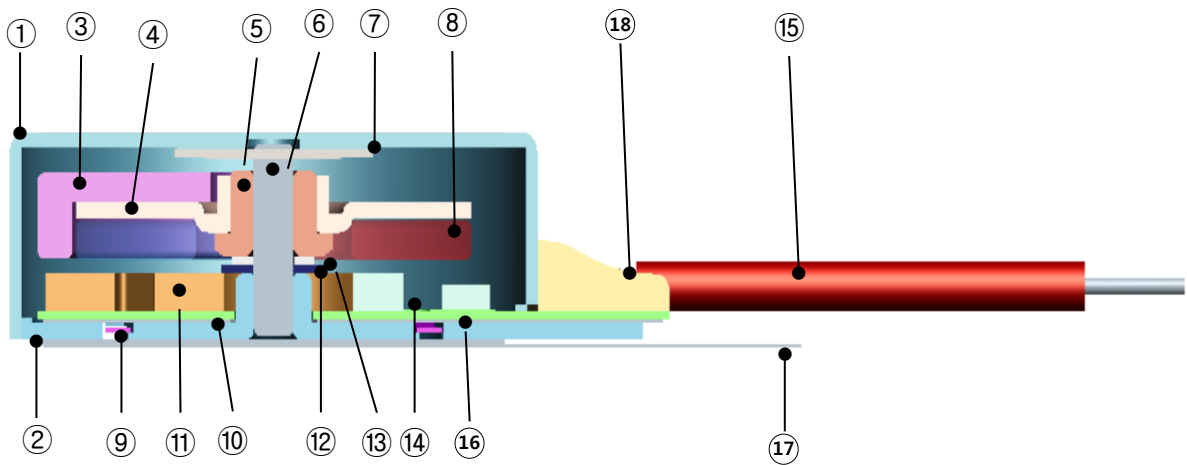


■ Rising time : The time when the acceleration reaches 50% of the vibration force(or steady-state) after the power is applied.

■ Falling time : The time when the acceleration reaches 50% of the vibration force(or steady-state) after the power is disconnected.

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12. 구성도 Composition Draw



NO	PART	PART No.	MATERIAL	Q'TY	REMARKS
1	Case		SUS	1	
2	Bracket		인천동	1	
3	Weight		W-Ni	1	
4	Plate		SPC	1	
5	Metal Bearing		Cu	1	
6	Shaft		KWS4MA/DSR7	1	
7	Washer-Top		PET	1	
8	Magnet		Nd-Fe-B	1	
9	Cogging plate		SPC	1	
10	PCB		FPCB	1	
11	Coil Wire		Self Bonding Wire	0.15g	
12	Stopper Washer		PET	1	
13	Slide Washer		PEEK	1	
14	Driver IC			1	
15	Lead Wire		RED(+), BLUE(-)	1	
16	PCB Tape		TESA 4972	1	
17	Motor Tape		TEA4982	1	
18	Adhesive		LP163	0.01g	

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13. 포장 Packing

13-1. 적용범위 Scope

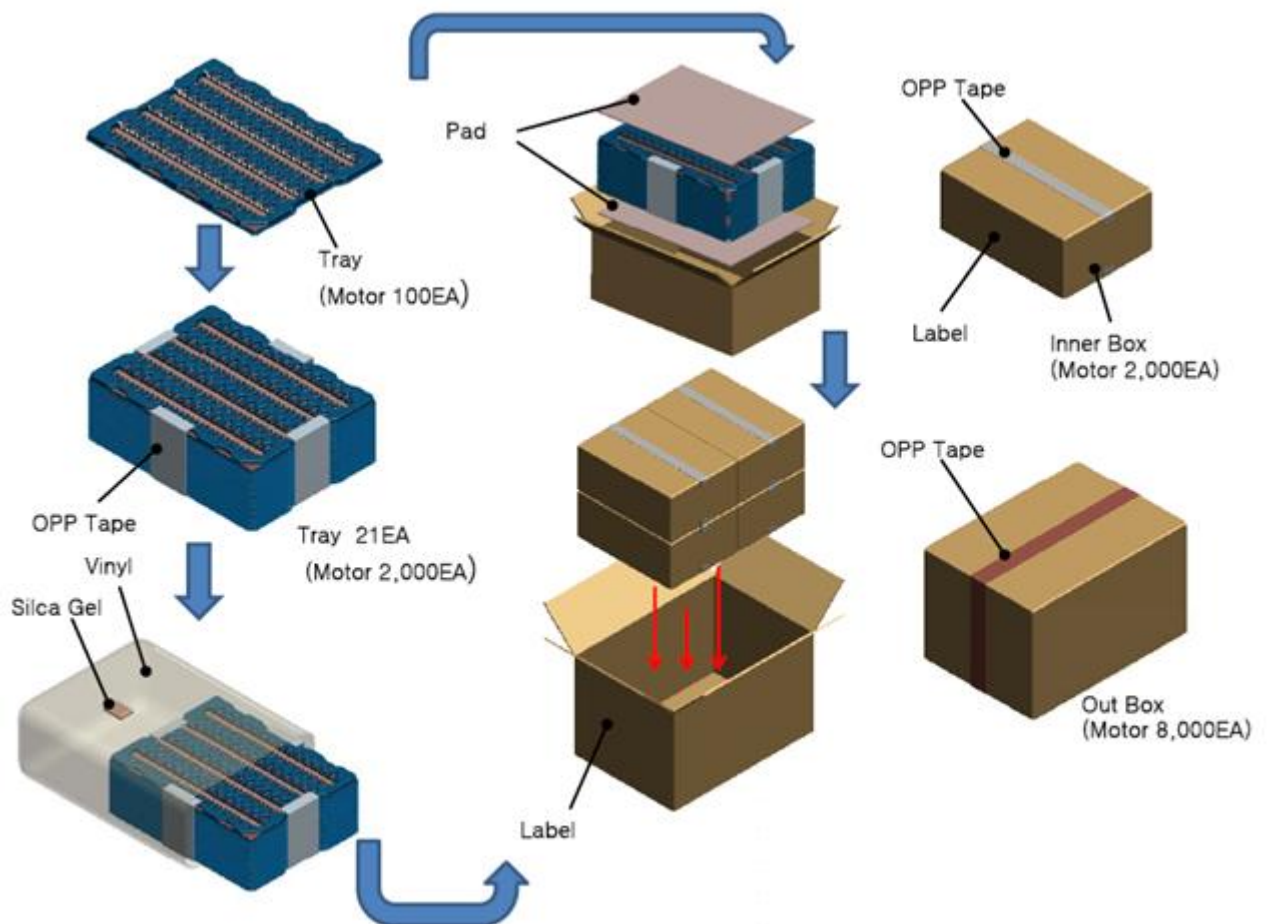
이 포장 사양은 BLDC 진동 모터에 사용되는 YJM-B0825S에 적용된다.

This packing specification applies to the YJM-B0825S, brushless type vibration motor.

13-2. 포장사양 Packing Specification

Item	Tray	Inner Box	Out Box
재질 Material	(PS) t=0.5mm	DW-1(Carton box)	DW-1(Carton box)
규격 Dimension	330(L) × 235(W) × 7(H)	350(L) × 250(W) × 150(H)	370(L) × 520(W) × 320(H)
수량 Quantity	100 ea MAX	2,000 ea MAX	8,000 ea MAX
중량 Weight	Approximately 140g	Approximately 2.9Kg	Approximately 13Kg

13-3. 포장도 Packing Drawing



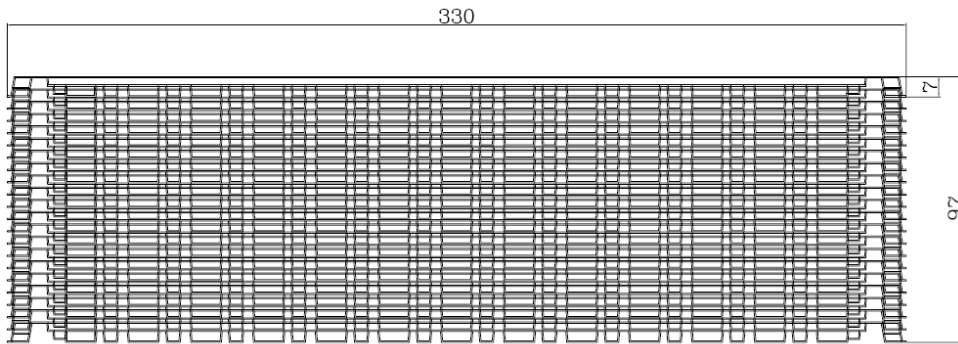
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13-4. Tray포장 사양

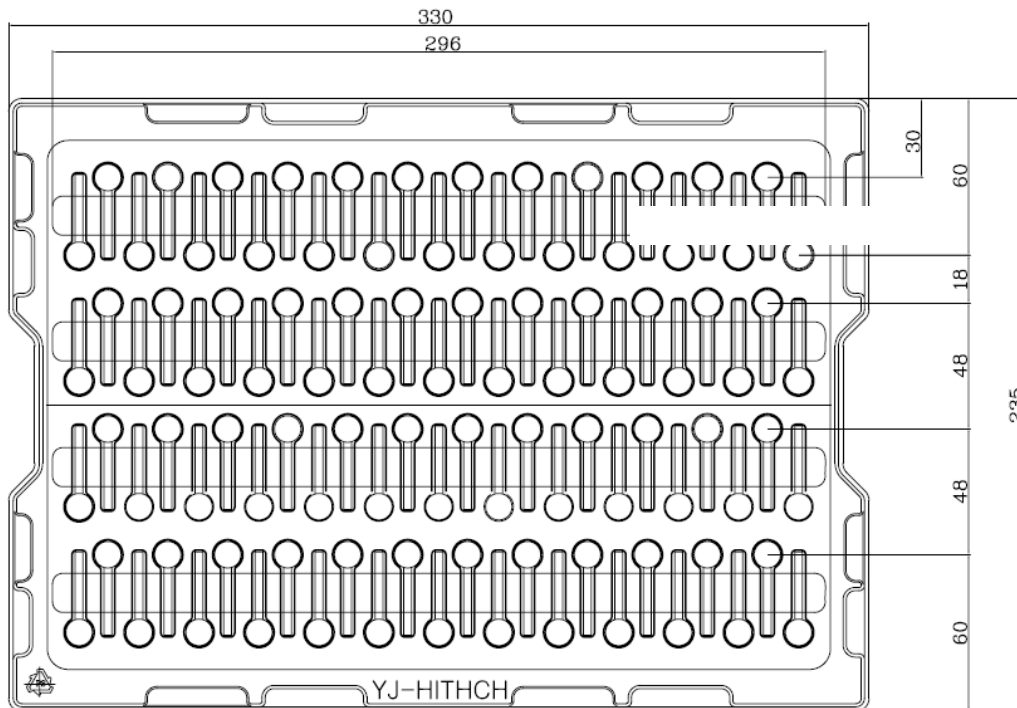
13-4-1. Tray 사양

Item	Specification
재질 Material	(PS) t=0.75mm
규격 Dimension	330(L) × 235(W) × 7(H)
수량 Quantity	100 ea MAX
중량 Weight	Approximately 140g

13-4-2. Tray측면 단면도



13-4-3. Tray상면



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14. 주의사항Caution

NO	Item	Specification
14-1	사용범위 Operating Range	<p>-표준으로 동작상태 사용하지 않을 시 성능 및 제품의 수명에 문제가 될 수 있다.</p> <p>- When using on the operating condition different from a standard, a problem can be generated to the performance and the life of a product.</p>
14-2	보관 Storage	<p>- 고온, 다습 한 장소에 6 개월 이상 장기간 보관 또는 작동시킬 경우 모터 전기적 성능이 저하 될 우려가 있습니다.</p> <p>- Avoid from placing motor for long term of six months under environmental condition of high temperature or extreme humidity, or motor may be deteriorated.</p>
14-3	Motor취급 Motor Handling	<p>-제품을 취급 할 때, Case 부분을 이용하여 무리한 외력을 가하지 마십시오.</p> <p>To handle the motor, hold the case softly.</p> <p>-Motor의 영구 자석 근처에 전기 성질이 있는 물체의 접촉을 피하십시오.</p> <p>Do not bring a magnetized object or attracted object by the magnet of motor, or such object may deteriorate a performance of motor.</p> <p>- 검사 실수로 전원 단자 (+ / -)의 Short 때 Drive IC가 손상 될 수 있습니다. DRIVE IC 손상을 방지하기 위해 전원 단자 (+ / -) 사이에 2uF 이상의 콘덴서를 모터와 병렬로 연결하여 검사를 하는 것이 안전합니다.</p> <p>input short to the motor due to mis-operating, Drive IC of the motor inside can be damaged. To avoid this problem, please add capacitor of 2uF or more between the power lines in parallel with the motor.</p> <p>-Drive IC 보호를 위해 DC4.5V 이상 공급하지 마세요.</p> <p>Supplying voltage more than DC4.5V can make IC out of function.</p>
14-4	기타 Others	<p>- 그것은 규칙 문제 발생시 기준으로 사양을 하고, 영진 하이테크 (주) 사이의 심의에서 고객과로 구성되어 있습니다.</p> <p>It is made to a rule make specifications into a basis at the time of problem generating, and with a customer under deliberations between Young Jin Hi-Tech CO.,LTD.</p>

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15. 사양변경 Specification Change

- 변경이 있는 경우에는 사전에 그 내용, 실시 로트 등의 필수 사항을 명기 한 후 변경 신청서를 제출 해야 한다.
- 변경 내역 관리가 필요 승인이 필요한 경우에는 사양서에 개정 기호를 표시한다.
- Even when there is any change to this specification, change application report which has the information of details
 - of the change, lot of product, and etc shall be presented to customer before that change being carried out.
 - And mutual discussion may be necessary before the change being carried out.
- Revision history shall be recorded on to the specification sheet when the change record and approval may be required.

16. 안전규격 Safety standard

- 해당 되지 않는다。
Not applicable

17. 고장율 Failure rate

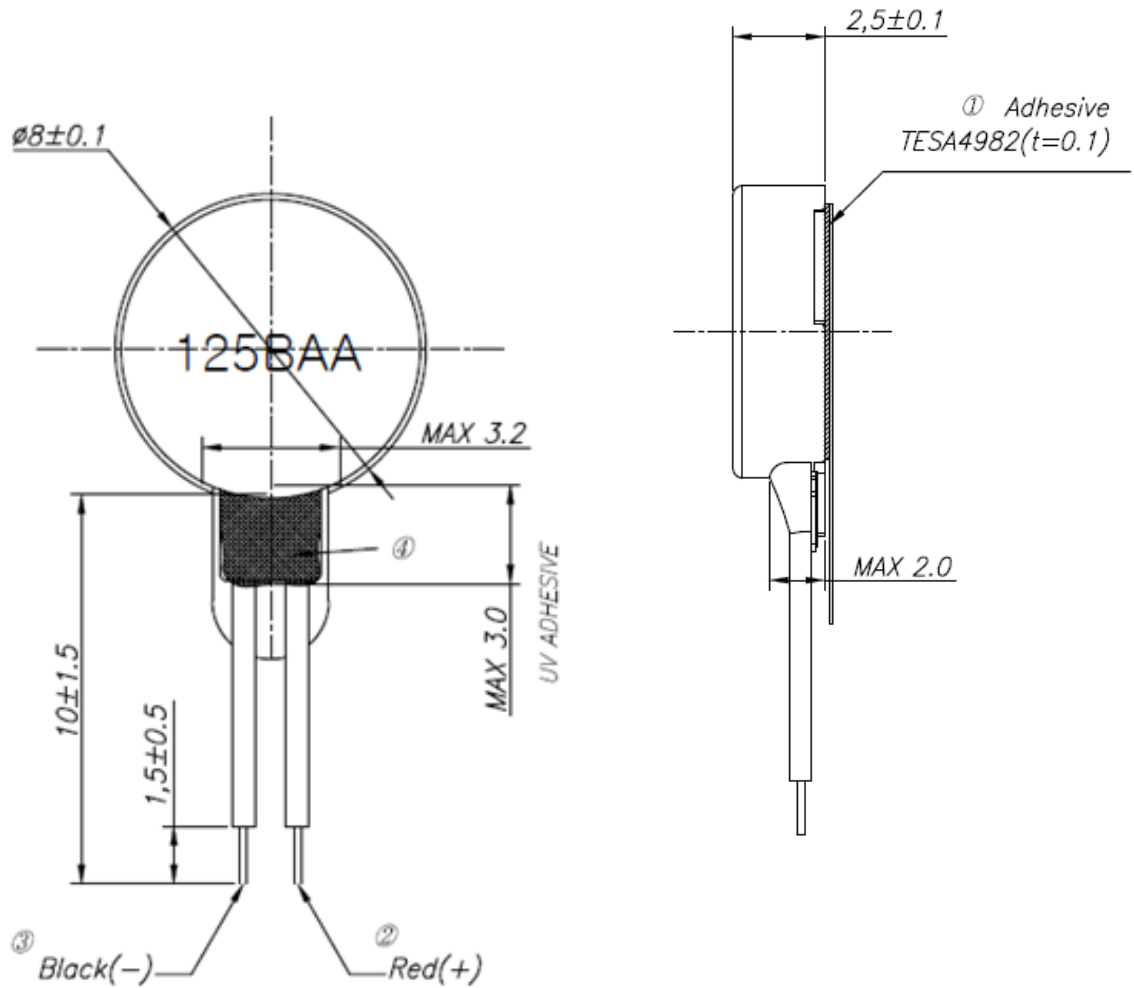
- 해당 되지않는다
Not applicable

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18. 도면 (Drawing)

Direction : 1 \longrightarrow 6

Lot No : 1 2 5 B A A

1~2 : Date (1~31日)

3 : Month(10=A,11=B,12=C)

4 : Year(2010년: A~2020年: K)

5 : Product Line

6 : REV-Number

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