Part No. **Q6DL2** **Old Part No.** **Q6DL**

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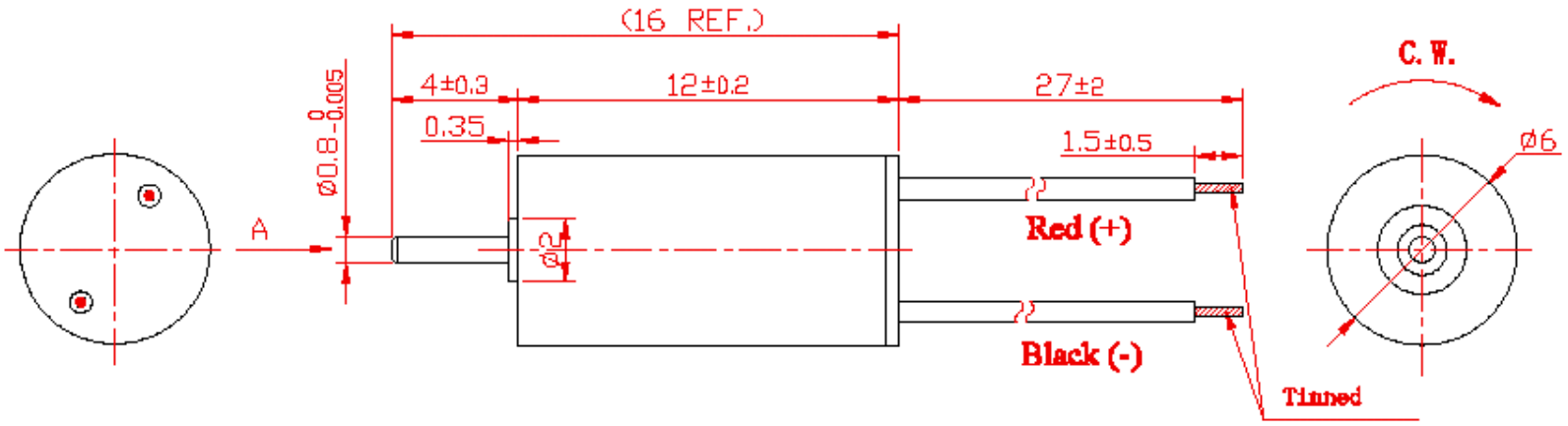
Technical requirement

1. Rated voltage:1.3V
2. Non load current:33mA Max
3. Non load speed:14,000 ± 2000rpm
4. Stall current:155mA Max
5. Terminal resistance:10.5Ω(±20%)
6. Starting voltage:0.8V Max
7. Lead wire spec: AWG30 UL1571
8. Unmarked tolerance: ± 0.1mm
9. Pressure along A direction :20N Max
10. Theenet covers colour:Black



1. General scope

1-1 The specifications apply to the coreless cylindrical permanent magnet motor DC model **Q6DL2 series**.

2. Operating conditions

Items		Specifications	Condition & Remarks
2-1	Rated voltage	See Item 8	
2-2	No load speed	See Item 8	

2-3	Direction of rotation	C.W. (clockwise)	
2-4	Motor posture	All positions	
2-5	Operating voltage	0.9 ~ 1.6V DC	
2-6	Operating conditions	-20 ~ 60°C, 10 ~ 90% RH	
2-7	Storage conditions	-40 ~ 80°C, 5 ~ 95% RH	No condensation of moisture.

3. Measuring conditions

Items		Specifications	Condition & Remarks
3-1	Temperature	20±2°C	
3-2	Humidity	(65±5%) RH	
3-3	Motor posture	Motor shaft horizontal	Lock the motor in a test fixture.

3-4 All data are based on the measuring conditions: 20°C, 65% RH. If any disagreement occurs, such test conditions are available: 5 ~35°C, 45 ~ 85% RH.

4. Mechanical specifications

Items		Specifications	Condition & Remarks
4-1	Configuration	As specified in outline drawing	Outline drawing No: Q6DL
4-2	Appearance	No evident mechanical damage and inadequate corrosion.	Visual examination on samples.
4-3	Shaft end play	0.1 ~ 0.3mm	
4-4	Weight of motor	1.30g approx.	

5. Performance and characteristics

Items		Specifications	Condition & Remarks
5-1	No load speed	See Item 8	At rated voltage
5-2	No load current	See Item 8	At rated voltage
5-3	Stall current	See Item 8	At rated voltage
5-4	Starting voltage	See Item 8	
5-5	Terminal resistance	See Item 8	At 20°C
5-6	Mechanical noise	35db avg./ 50db (A) max	

6. Reliability Test

Items		Standard test conditions	Condition & Remarks
6-1	Life test	Voltage: 1.3V DC Temperature: 20±2°C Humidity: 65±5% RH Test mode 1: continuous run, 100 hours Test mode 2: 8s on/ 8s off, 20000 cycles	After 2 hours exposure in ordinary Motors shall be approved as specified in item 7-1.
6-2	Low temperature exposure test	Temperature: -20±2°C Time: 96hrs	After 2 hours exposure in ordinary Motors shall be approved as specified in item 7-2.
6-3	High temperature exposure test	Temperature: 60±2°C Time: 96hrs	
6-4	High humidity exposure test	Temperature: 40±2°C Humidity: 90±5% RH Exposure time: 96hrs Dry time: 4hrs No condensation of moisture	

6-5	Drop test	Set the motor to the approximately 75g (include the motor) weight of block drop the motor on the concrete floor. Height: 1.2 meters Direction: ±x, ±y, ±z Times: Each 2 times	After the test motors shall be approved as specified in item 7-2

7. Post environmental

Items		Requirements	
7-1	Table A	1) No load speed: 2) No load current: 3) Starting voltage: 4) Wave of current:	Initial data -30% min./ +60% max. Initial data ±30% max 0.9V DC max No blot wave.
7-2	Table B	1) No load speed: 2) No load current: 3) Starting voltage:	Initial data -30% min./ +60% max. Initial data ±30% max 0.9V DC max

8. Main specifications of Q6DL Series

Part Number	Nominal Voltage	Starting Voltage	Current		Normal Speed	Starting Current	Armature Resistance
	V DC.	V DC.	Avg. (mA)	Max. (mA)	rpm	mA	Ω±3%
Q6DL2-1.0A	1.3	0.8	15	25	10000±3000	<70	20.5
Q6DL2-1.4A	1.3	0.6	25	30	14000±3000	<130	10.5
Q6DL2-1.6A	1.3	0.6	30	35	16000±3000	<150	8.5
Q6DL2-1.9A	1.3	0.6	32	45	19000±3000	<190	6.0
Q6DL2-2.2A	1.3	0.6	40	50	22000±3000	<265	3.6
Q6DL2-2.4A	1.3	0.6	45	55	24000±3000	<285	3.2
Q6DL2-2.6A	1.3	0.6	45	60	26000±3000	<305	3.0
Q6DL2-2.8A	1.3	0.6	50	70	28000±3000	<327	2.8
Q6DL2-3.1A	1.3	0.6	60	80	31000±3000	<350	2.3
Q6DL2-3.4A	1.3	0.6	80	100	34000±3000	<390	2.0

9. Cautions and matters

9-1 Warnings: In a motor near the end its life, or under breakdown conditions, short circuits can develop between commutator segments. Uncontrolled voltage may then leak into the power source circuit. Motors may overheat or fail if run continuously with its rotor locked condition or under excessive loads.

9-2 Destructive atmospheres: Do not use and store the motor in the corrosive gas atmosphere (H_2S, SO_2, NO_2, Cl_2, etc.), or substances that can emit toxic gases, such as organic silicon, cyanide, formalin, or phenol compounds. The motor may get serious damages.

9-3 Condensation: Condensation on the electrical circuits can destroy the motor or control circuits. Monitor the environment and undertake measures to prevent condensation, such as installing condensation sensors to cut power when necessary.

9-4 Some particular plastic materials can crack and fail after exposure to motor bearing oil. Perform test the motor in/on the subassembly to check the influence of the oiled plastic parts.

9-5 Avoid connecting a serial resistor to the motor if at all possible, as this can negatively affect reliability. If this is unavoidable, keep resistance as low as possible and test thoroughly for reliability before using.

9-6 When testing for UL, CSA or other safely standards, apply for approval for the entire subassembly.

9-7 Do not store motors under conditions of extreme temperatures or high humidity, or for longer than six months even room conditions. When removing out of packaging after storage, take precautions to prevent condensation.

9-8 Connections: Complete soldering operations within three seconds to prevent damage to leads and terminals. Make sure that the soldering tip does not exceed 350°C. Be gentle with terminals; dents or pressure on them can lock up the motor.

9-9 Please consults us in advance when design considerations call for forcefully stalling the motor using a short circuit at the terminal or reverse voltage. Such operations can shorten product life.