

# Mini DC motor



## Specifications

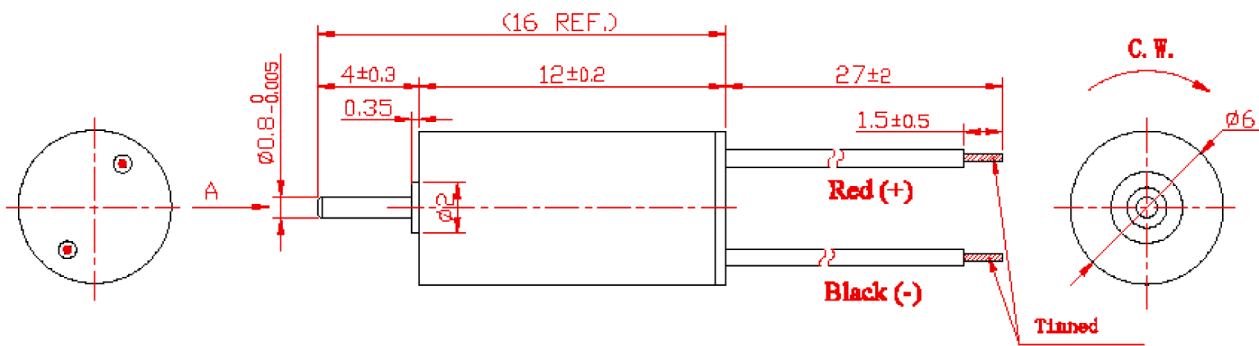
Nominal Voltage	Starting Voltage	Current		Normal Speed	Starting Current	Armature Resistance
		Avg. (mA)	Max. (mA)			
V DC.	V DC.			rpm	mA	$\Omega$
1.3	0.6	30	35	16000	<150	7

## Operating conditions

Items	Specifications	Condition & Remarks
Rated voltage	<a href="#">See Item 8</a>	
No load speed	<a href="#">See Item 8</a>	
Direction of rotation	C.W. (clockwise)	
Motor posture	All positions	
Operating voltage	<a href="#">0.9 ~ 1.6V DC</a>	
Operating conditions	-20 ~ 60°C, 10 ~ 90% RH	
Storage conditions	-40 ~ 80°C, 5 ~ 95% RH	No condensation of moisture.

## Mechanical specifications

Items	Specifications	Condition & Remarks
Configuration	As specified in outline drawing	Outline drawing below
Appearance	No evident mechanical damage and inadequate corrosion.	Visual examination on samples.
Shaft end play	<a href="#">0.1 ~ 0.3mm</a>	
Weight of motor	<a href="#">1.30g approx.</a>	



## Performance and characteristics

Items	Specifications	Condition & Remarks
No load speed	<a href="#">See Item 8</a>	At rated voltage
No load current	<a href="#">See Item 8</a>	At rated voltage
Stall current	<a href="#">See Item 8</a>	At rated voltage
Starting voltage	<a href="#">See Item 8</a>	
Terminal resistance	<a href="#">See Item 8</a>	At 20 癩
Mechanical noise	35db avg./ 50db (A) max	

## Cautions and matters for motors

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.

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**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 safety 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 consult 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.