1. Summary

This specification is suitable for Akyga Battery.
Model: R03-AA
IEC:R03 Reference standard: AAA JIS
IEC 60086-1:2015 Primary Batteries – Part 1: General.
IEC 60086-2:2015 Primary Batteries – Part 2: Physical and electrical specifications.
IEC 60086-5:2016 Primary Batteries – Part 5: Safety of batteries with aqueous electrolyte.

2. Chemical compotision

Carbon battery – zinc (negative electrode), manganese dioxide (positive electrode), zinc chloride / ammonium chloride(electrolyte).

No mercury and cadmium added.

3. Standard voltage

1.5V

4. Average weight

6.5g

5. Standard capacity

370mAh (20°C±2°C, 75Ω resistance, discharge for about 4 hours a day, termination voltage is 0.9V).

158mAh(3.9Ω resistor continuous discharge with a termination voltage of 0.9V).

6. Electrical performance

3.9Ω ± 10% load resistance, measurement time 0.3S, test temperature of 20°C±2°C.

	NO-LOAD VOLTAGE (V)	LOAD VOLTAGE (V)	SHORT-CIRCUIT CURRENT (A)	LOAD VOLTAGE
New electricity (within 30 days of receipt)	≥ 1.62	≥ 1.38	≥ 2.8	MIL-STD105E, ClassII, DoubleSampling, AQL=0.4
90 days at 45°C	1.60	1.35	2.5	
Store at room temperature for one year	1.60	1.35	2.5	

7. Discharge performance

20°C ± 2°C, conventional humidity, tested within 30 days after receipt.

STANDARD	DISCHARGE CONDITIONS			AVERAGE MINIMUM DISCHARGE TIME		
	LOAD DISCHARGE	TIME/DAY	CUT OFF VOLTAGE	NEW BATTERIES	STORED AT 45°C FOR 90 DAYS	ROOM TEMPERATURE FOR 1 YEAR
IEC	3.9Ω	Continuous discharge	0.9V	≥35m	33m	30m
IEC	5.1Ω	4m/h, 8h/d	0.9V	75m	70m	70m
IEC	75Ω	4h/d	0.9V	21h	19h	19h
IEC	5.1Ω	1h/d	0.8V	73m	70m	65m
REF	24Ω	15s/m, 8h/d	1.0V	5.5h	5.5h	4.6h

Note

1) 8 samples of each battery are only tested,
2) The average discharge time should be greater than or equal to the standard time, and the discharge time should not be more than 1 battery less than 80% of the specified time, then the battery is considered to meet the standard.
3) If the above test results are unqualified, samples can be taken and retested.

8. Leakage resistance

PROJECT	CONDITIONS	TIME	REQUIREMENTS	CHARGING STANDARDS
Over-discharge leakage resistance	15Ω continuous discharge, temperature 20°C±2°C, relative humidity 65 ± 20%RH	EPV=0.6V	The deformed size of the battery does not exceed the upper limit of the size and there is no leakage.	N=40, Ac=1, Re=2
Leakage resistance during storage	Storage temperature 45°C±2°C, relative humidity 70±20%RH	60 days	The deformed size of the battery does not exceed the upper limit of the size and there is no leakage.	

9. Safety performance

PROJECT	CONDITIONS	TIME	REQUIREMENTS	CHARGING STANDARDS
Short circuit performance	Temperature 20°C ± 2°C	24h	Battery non-explosive	N=8, Ac=0, Re=1
Reverse charging performance	Connect 4 new batteries in series and discharge one battery backwards, causing a short circuit	24h		

10. Marking

Here will be the following identification outside battery:

1) Model: R03, AAA,
2) Brand name, logo,
3) Polarity mark „+” or „-”

11. Precautions

1) Do not charge the battery, which may cause the battery to explode, leak or damage related charging tools.
2) When installing the battery, pay attention to the correct direction, if the installation is not correct or will cause a short circuit.
3) Do not short-circuit, heat, throw into fire or open the battery.
4) Avoid using different series and new and old batteries at the same time.
5) Remove the used battery to avoid over discharging, which will cause battery leakage.
6) Do not solder the battery, this will cause damage to the battery.
7) The battery should be placed in a place that is not easy for children to reach to prevent children from swallowing the battery by mistake.

12. Battery storage period

At room temperature and suitable environment, it can be stored for two years (20°C ± 2°C, relative humidity 65 ± 20%).

13. Discharge curve Figure

Figure 1. Discharge conditions: 3.9Ω, discharge at continuous 20°C ± 2°C.

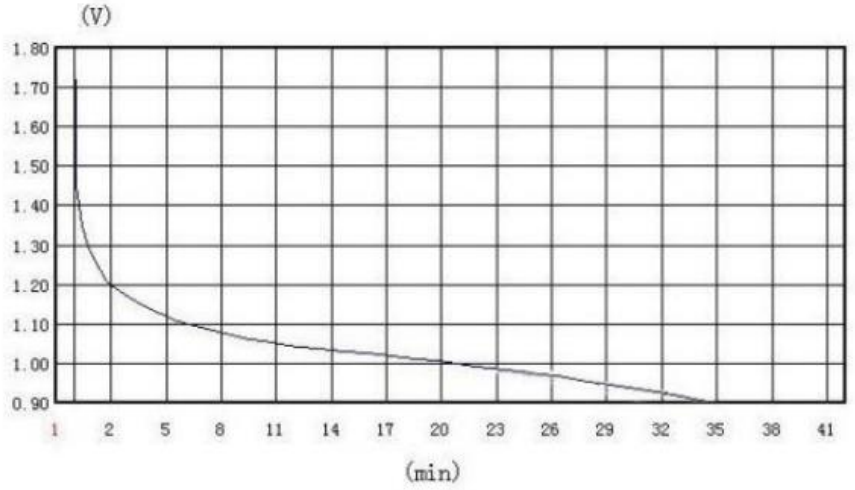

Figure 2. Discharge conditions: 75Ω, discharge at 20°C ± 2°C, discharge for 4 hours per day.