

■ Features

- Nominal capacity 640mAh
- Nominal voltage: 9V
- EC 60086-1:2015
- (-) Zn | KOH-H₂O | MnO₂ (+)
- Weight: 45g
- Dimensions: 48.5x26.5x17.5mm
- Protruded positive(+) and flat negative (-) contacts
- Metallic Foil Jacket
- 1-year warranty



*Product images are for illustrative purposes only and may vary from actual design.

■ Applications

- Radio communication and other military applications
- Alarms and security systems
- Beacons and emergency location transmitters
- GPS equipment
- Metering systems
- LED lighting applications

■ Model List*(See part number scheme for model number details)

Model Number	Nominal Capacity	Nominal Voltage	Test Temp.
APS-LR614927-640mAh	640mAh	9V	20±2°C

■ Chemical System

Alkaline Zinc-Manganese Dioxide (KOH Electrolyte)

Heavy Metal Contents

Mercury(Hg)	<1ppm	2006/66/EC/ Specification(%)
Cadmium(Cd)	<20ppm	2006/66/EC/ Specification(%)
Lead(Pb)	<40ppm	2006/66/EC/ Specification(%)

■ Characteristics

	Open Circuit Voltage	Closed Circuit Voltage	S.C(reference)	Acceptance Standard
Initial	9.4-9.9V	≥9.1V	≥5A	GB/T2828.1/ISO2859- 1
After 12 months	93-9.9V	≥8.8V	≥4A	General inspection level I AQL=0.4

■ Electrical Characteristics

- Unless otherwise stated, all measurements are to be performed at a standard environment of 20±2°C, 60±15%R.H.
- All samples are normalized for 8 hours at least at 20±2°C, 60±15%R.H environment prior to measurement.
- The digital voltmeter (DCM) is with the precision of 1mV(internal resistance not less than 1 MΩ).
- The load resistance of the total circuit is accurate within 5% of the specified value.
- The initial discharge test shall commence within 30 days of manufacture.

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■ Service Time

Discharge Condition			IEC60086-2: 2015 Standard	Discharge Time			
Load	Test Mode	End Voltage		Initial		After 1year at 20±2°C	
				MAD	Normal	MAD	Normal
620Ω	2h/d	5.4V	33h	48h	51.8h	43.5h	48h
270Ω	1h/d	5.4V	12h	20h	21.5h	18.1h	20h
620Ω reference	24h/d	5.4V	/	48.2h	52h	43.7h	48.2h
Remarks	MAD- Minimum Average Discharge, h-hour, d-day Actual performance for each lot perhaps will be slightly different with normal performance.						

Conditions: Test Temp. 20±2°C, Relative Humidity: 60±15%

Satisfaction standard:

- 9 pieces of battery will be tested for each discharging standard.
- The result of the average discharging time from each discharging standard shall be equal to or more than the average minimum time requirement, and no more than one battery has a service output less than 80% of the specified requirement.
- One re-test is allowed to confirm the previous result.

■ Safeties

IEC 60086-1:2015	Primary Batteries-Part1: General
IEC 60086-2:2015	Primary Batteries-Part2: Physical and Electrical Specification
IEC 60086-5:2016	Primary Batteries-Part5: Safety of batteries with aqueous electrolyte

■ Safety Characteristics

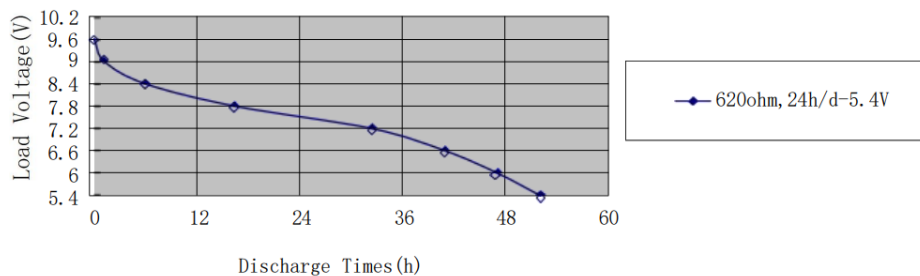
Item	Condition	Period	Characteristics	Acceptance Standard
Short Circuit Characteristics	Positive & Negative of an undischarged battery shall be connected directly at temp. 20±2°C, Relative Humidity: 60±15%R.H.	24 hours	There shall be no explosion* of battery	N=5 Ac=0 Re=1
Free Fall test	The Test Battery shall be dropped from a height 1m onto a concrete surface. Each test battery shall be dropped six times, once in each face.	24 hours		N=5 Ac=0 Re=1

■ Electrolyte Leakage Proof Characteristics

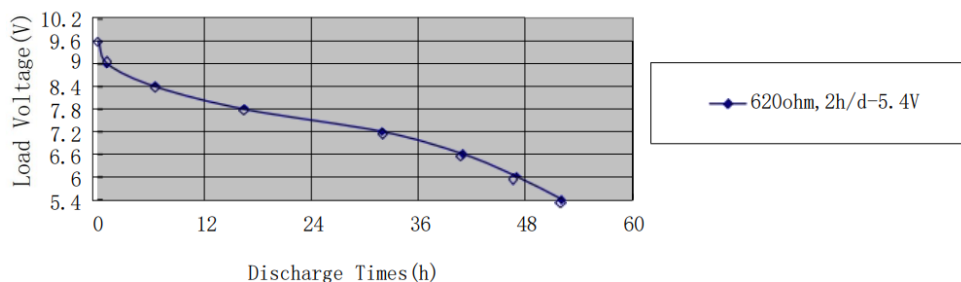
Item	Condition	Period	Characteristics	Acceptance Standard
Over-discharge leakage test	620Ω continuous discharge at temp. 20±2°C, relative humidity: 60±15%RH	72h	There shall be no deformation exceedingly the IEC specified dimensions, nor leakage recognized by visual characteristics	N=9 Ac=0 Re=1
High temp. Leakage test	At temp. 45±2°C, relative humidity less than 65%RH	90days		N=20 Ac=0 Re=1
	A Re=1t temp.60±2°C Relative Humidity: 90±5%RH	20days		

■ Derating Curves

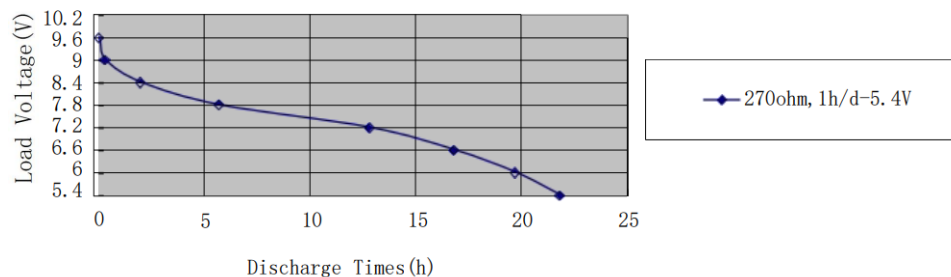
Discharge Curve (V)



Discharge Curve (V)



Discharge Curve (V)



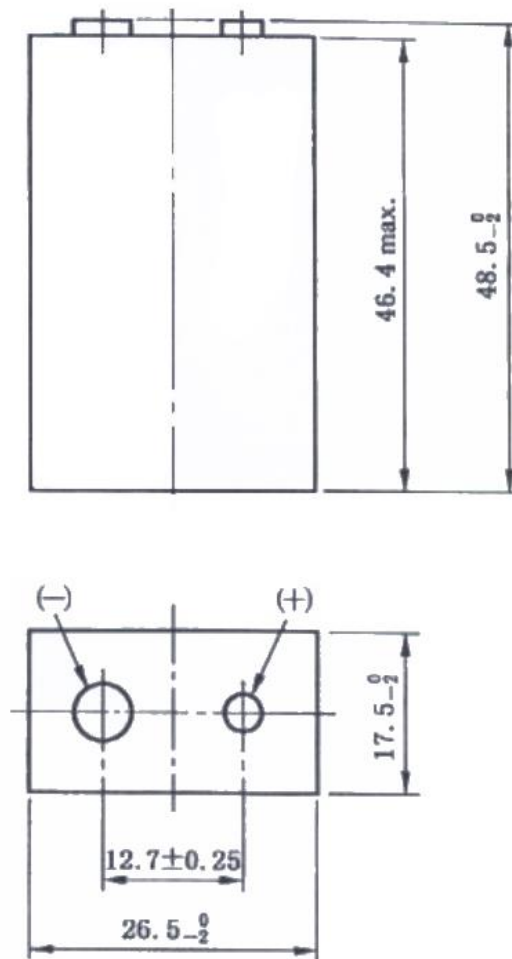
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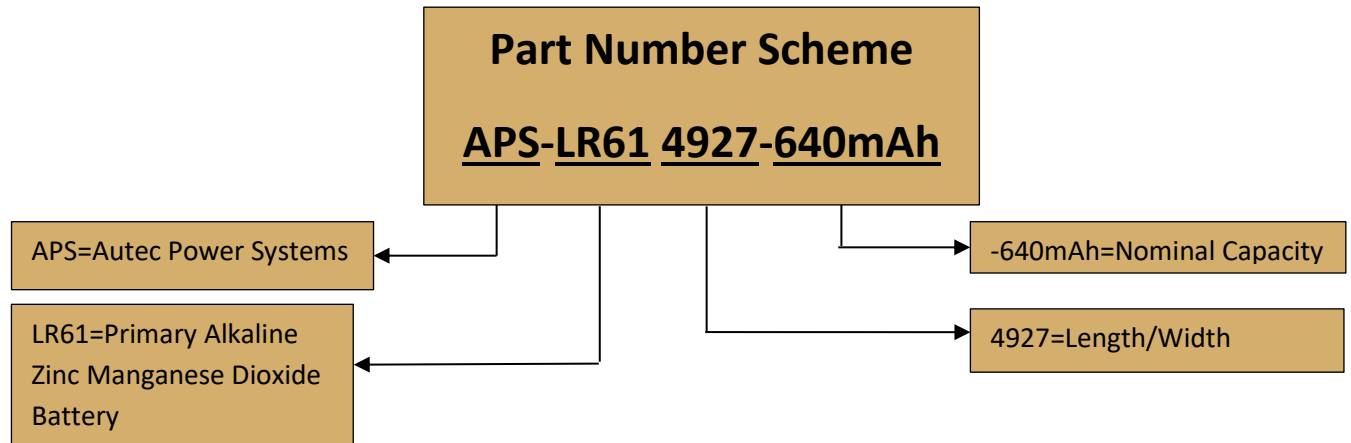
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■ Mechanical Diagram



■ Warnings

1. Since the battery is not manufactured for recharging, there are risks of electrolyte leakage.
2. The battery shall be installed with its "+" and "-" sign according to the instruction shown on the applied device.
3. Short-circuiting, heating, disposing of in fire, or disassembling the battery shall be prohibited.
4. Avoid using old and new batteries together.



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*Specifications are subject to change without notice. Autec is not responsible for issues arising from errors or omissions.