

## 1. APPLICABILITY

This specification is applicable to TINKO Carbon Battery, 6F22 (Mercury Free).

## 2. GENERAL

2.1	Type designation	:	6F22
2.2	Nominal voltage	:	9V
2.3	Dimension	:	height: 48.5-46.5mm Length: 26.5-24.5mm Width: 17.5-15.5mm
2.4	Typical weight	:	36.5g
2.5	Shelf life	:	18months
2.6	Date code	:	Unless otherwise specified, every Battery will carry an expiry date code For 24 months. (E.g. a battery manufactured on January 2000 will carry an expiry code of 06-2002.)
2.7	Jacket	:	Metal jacket
2.8	Mercury Content	:	≤1ppm

## 3. APPEARANCE

There shall be no dirt, scratch or deformation detrimental to practical service in appearance.

## 4. TEST METHOD

### 4.1 Electrical

Test temperature :  $20 \pm 2^{\circ}\text{C}$

### 4.2 Off Load Voltage

At shipping	12 months after manufactured
Above 8.6V	Above 8.2V

### 4.3 On Load Voltage

Initial	12 months after manufactured
Above 9.6V	Above 8.2V

Load resistance: 180 ohm  $\pm$  0.5% (measure time: 0.3 seconds)

## 5. SERVICE OUTPUT

### 5.1 Test method

- (1) The resistance of external discharge circuit shall be as specified plus or minus 0.5%.
- (2) The duration of discharge time periods shall be as specified plus or minus 1%.
- (3) Storage shall be at  $20 \pm 2^{\circ}\text{C}$ ,  $65 \pm 15\% \text{RH}$  and discharge tests shall be at  $20 \pm 2^{\circ}\text{C}$ ,  $65 \pm 15\% \text{RH}$ .

### 5.2 Property (Continuous discharge)

Resistance	Service Output		
	Initial		12 months after manufactured
	Minimum Average	Typical	Minimum Average
180 $\Omega$ ,24h/d (end volt = 4.8V)	220mins	240mins	220mins
620 $\Omega$ ,24h/d (end volt = 5.4V)	24h	25h	24h

Test temperature:  $20 \pm 2^{\circ}\text{C}$       H: Hour /mins      Relative humidity:  $60 \pm 15\%$

5.3 Operating temperature:  $-20^{\circ}\text{C}$  to  $54^{\circ}\text{C}$  ( $65 \pm 15\% \text{RH}$ )

5.4 Storage temperature:  $-30^{\circ}\text{C}$  to  $55^{\circ}\text{C}$  ( $65 \pm 15\% \text{RH}$ )

## 6 Performances

### (1) Spillage proof test at over-discharge

The number of samples : 9

Test condition :  $20 \pm 2^{\circ}\text{C}$ , relative humidity 45%-75%

Test method : 180 $\Omega$  continuous discharge 24 hours.

Requirements : no spillage at eyesight, the distortion of total height of the battery will not exceed 0.2mm, the max allowable value.

Standard : 0/9

### (2) Spillage proof test at high temperature

The number of samples : 20

Test condition :  $45 \pm 2^{\circ}\text{C}$ , relative humidity 85%-95%.

Test method : Under the prescriptive test conditions, the samples are stored for 30 days. Then they are took out and placed under  $20 \pm 2^{\circ}\text{C}$ , relative humidity 45%-75% conditions for 4 to 24 hours for observation.

Requirements : no spillage at eyesight, the distortion of total height of the battery will not exceed 0.2mm, the max allowable value.

Standard : 0/20

## 7. Safety Performance

External short-circuit explosion-proof performance

The number of sample : 10

Test Condition :  $20 \pm 2^{\circ}\text{C}$  RH:45%–75%

Test method : Under the prespective test conditions external short-circuit 24h.

Requirement : no phenomena of separation between negative connector and battery body.

Standard : 0/10

## 8. PACKAGING

Packaging shall be a form agreed by both parties.

## PRECAUTION & HANDLING

- (1) Do not disassemble or short-circuit batteries.
- (2) Do not recharge batteries.
- (3) Do not dispose of batteries in fire.
- (4) Do not allow metal objects to contact the battery terminals.
- (5) Do not mix with used or other battery type (such as alkaline with carbon zinc).
- (6) Do not solder the batteries directly. If soldering or welding connection to the battery is required, consult our engineer for proper methods.
- (7) Do not over-discharge batteries. Force discharging batteries by external power source in a series may cause explosion.
- (8) To install or remove batteries, follow the appliance manufacturer's instructions.
- (9) Keep battery away from small children. If swallowed, consult a physician at once.
- (10) Remove batteries from device when it is not in use.

## STORAGE

- (1) Store in cool, dry place before use.
- (2) Do not keep batteries at temperature of  $55^{\circ}\text{C}$  or above.
- (3) Do not keep batteries at relative humidity of 85% or above.

## Marker

The label printing :

- (1) Type : 6F22
- (2) Brand : 
- (3) Normal Voltage : 9V
- (4) Polarity : “+” or “-”

**Period of validity : 18month (Normal Temperature)**