

## Yuasa NP Series VRLA Battery, 5 Years Design Life

The Yuasa NP series is a high energy density Valve Regulated Lead Acid (VRLA) battery that uses advanced plate technology and sealed construction. Its unique sealing technique prevents electrolyte leakage when the battery is mounted either horizontally or vertically. Manufactured in Yuasa quality assured factories, the Yuasa NP series offers absolute reliability and minimal maintenance for end users.

- Sealed construction with pressure relief system
- Operation in any orientation (*except in an inverted position*)
- Heavy duty grids
- Low self discharge
- Wide operating temperature range ( $-15^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ )
- Recyclable materials used in battery

### General Performance

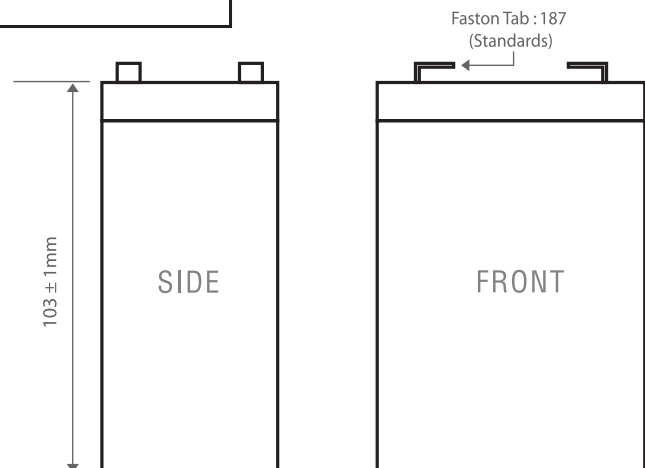
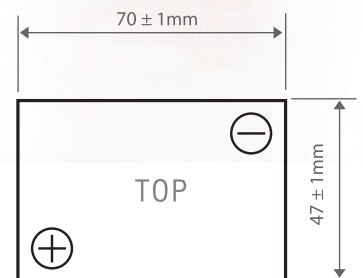
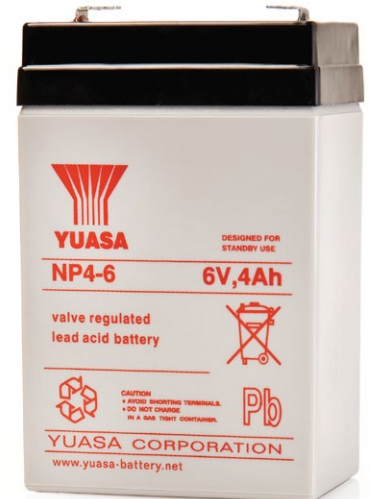
Battery	NP4-6FR	
Application	Standing	
Design Life	5 Years	
Nominal Capacity	4Ah	
Actual Capacity at 25°C	1 hour rate to 1.60Vpc	2.5Ah
	5 hour rate to 1.70Vpc	3.45Ah
	10 hour rate to 1.75Vpc	3.64Ah
	20 hour rate to 1.75Vpc	4Ah

### Electrolyte

Fully charge density at 25°C	1.300
Density Range	1.290-1.310
Gelled/Absorbed	Absorbed
Mounting Orientation	Horizontal/Vertical

### Plates

Positive Plates:	
Number/cell	2
Type	Flat
Material of grid	Lead-Calcium-Tin Alloy
Thickness	3.5mm
Negative Plates:	
Number/cell	3
Type	Flat
Material of grid	Lead-Calcium-Tin Alloy
Thickness	2mm



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### Physical Properties

Separators	
Type	Glass Mat
Is glass fibre included?	Yes
Container & Cover Materials	
Lid Material, Colour	Acrylonitrile Butadiene Styrene ABS / Black
Container Material, Colour	Acrylonitrile Butadiene Styrene ABS / Grey
Flame Retardant	Yes
Safety Vent Operational Pressure	20kPa
Dimensions:	
Overall Width	70mm
Depth	47mm
Height	103mm
Overall Height	105.5mm
Battery Weight (kg)	
Total Weight (wet)	0.85kg

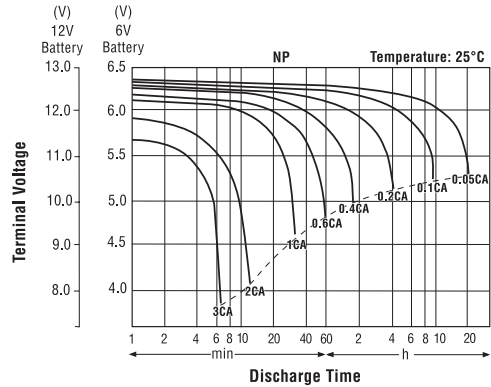
### Electrical Properties

Self Discharge Rate @ 20°C	<3% per month		
Normal Charge (Amperes)	0.4A		
Max. Charge (Amperes)	1.0A		
Internal Resistance (mOHMS)	20 mΩ		
Volts End of Charge	2.260Vpc @ 25°C		
	20°C	25°C	30°C
Float Voltage (Vpc)	2.275Vpc	2.260pc	2.245Vpc
Float Current (mA)	<4mA	<4mA	<4mA
Initial Short circuit current (A)	300		
Efficiency at 10 hour rate (%):			
Ampere-Hour	>90%		
Watt-Hour	>80%		

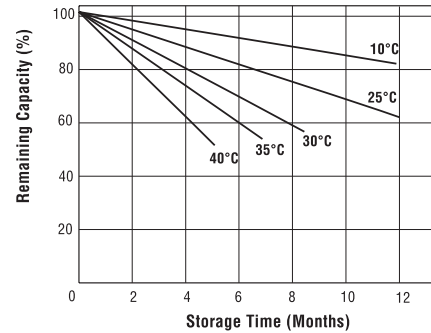
### Compliant Standard

Battery Standard	JIS C8702
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### Discharge Characteristic Curves: NP Batteries



### Self Discharge Characteristics



### Temperature Effects in Relation to Battery Capacity

