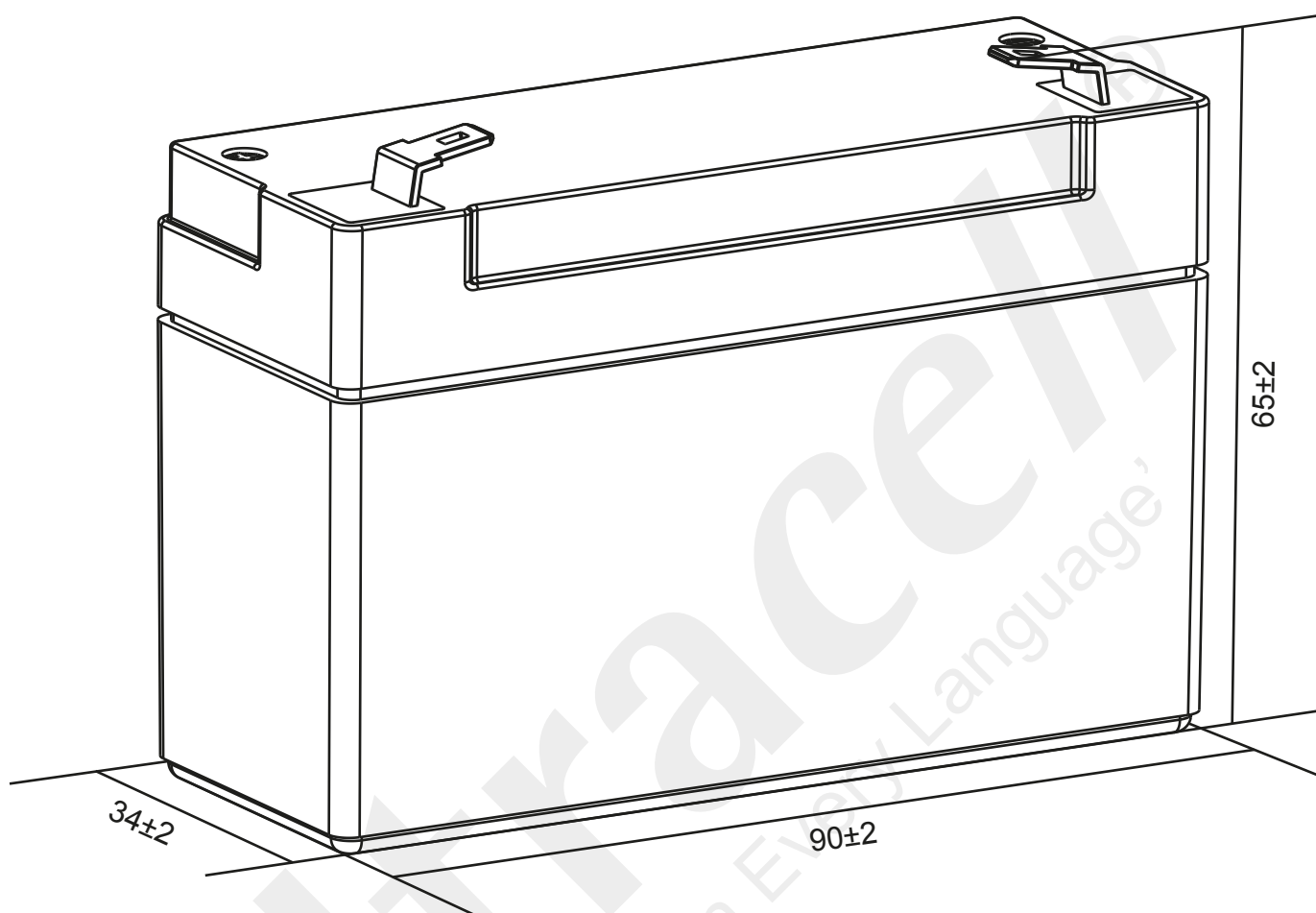
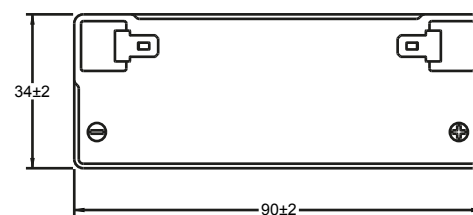
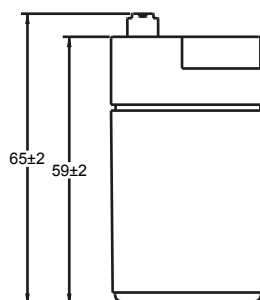




Technical Dimensions (mm)



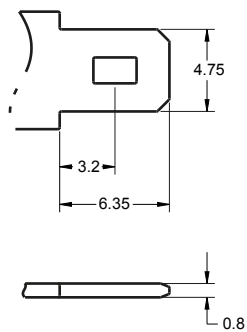


Image



Terminal Dimensions (mm)

Standard Terminal: F1



Technical Specification

Output	Nominal Voltage	4V
	Nominal Capacity (20HR)	3.5Ah
Terminal Type	Standard Terminal	F1
Container Material	Standard Option	ABS
	Flame Retardant Option (FR)	ABS (UL94:VO)
Rated Capacity	(20HR 1.80V/cell, 25°C)	3.50 Ah/0.175A
	(10HR 1.80V/cell, 25°C)	3.26 Ah/0.326A
	(5HR 1.75V/cell, 25°C)	2.94 Ah/0.588A
	(3HR 1.75V/cell, 25°C)	2.57 Ah/0.856A
	(1HR 1.60V/cell, 25°C)	2.12 Ah/2.12A
Max Discharge Current	52.5A (5s)	
Internal Resistance	Approx 14mΩ	
Discharge Characteristics	Operating Temp Range	Discharge: -15 ~ 50°C
		Charge: 0 ~ 40°C
		Storage: -15 ~ 40°C
	Nominal Operating Temp Range	25 ± 3°C
	Cycle Use	Initial Charging Current less than 1.05A. Voltage 4.8V ~ 5.0V @ 25°C Temp. Coefficient -10mV/°C
	Standby Use	No limit on initial charging current. Voltage 4.5V ~ 4.6V @ 25°C Temp. Coefficient -6mV/°C
	Capacity affected by Temperature	40°C 103%
		25°C 100%
		0°C 86%
Design Floating Life at 20°C	5 Years	

Self Discharge

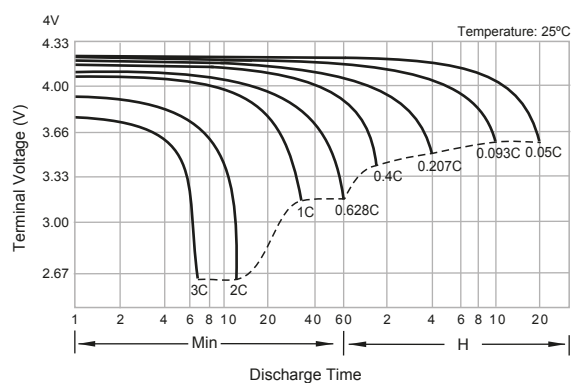
Ultracell® UL batteries may be stored for up to 6 months at 25°C and then a refresh charge is required. For higher temperatures the time intervals will be shorter.

Constant Current Discharge / Constant Power Discharge At 25°C (Amperes & Watts/Cell)

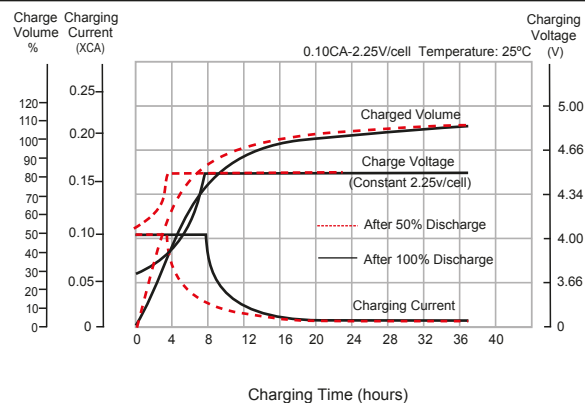
A = Amperes W = Watts

F.V/TIME	5	10	15	20	30	45	60	2	3	4	5	6	8	10	20
A W	min	min	min	min	min	min	min	hours	hours	hours	hours	hours	hours	hours	hours
1.85V/cell	6.72	4.68	3.86	3.35	2.69	2.07	1.69	1.03	0.786	0.647	0.549	0.475	0.378	0.314	0.173
	12.7	8.92	7.43	6.49	5.24	4.05	3.33	2.04	1.56	1.29	1.10	0.954	0.760	0.634	0.350
1.80V/cell	8.26	5.59	4.48	3.79	2.98	2.25	1.82	1.10	0.827	0.680	0.573	0.496	0.392	0.326	0.175
	15.4	10.5	8.54	7.29	5.76	4.39	3.57	2.16	1.63	1.35	1.14	0.989	0.784	0.652	0.352
1.75V/cell	9.79	6.32	4.94	4.13	3.18	2.39	1.91	1.14	0.856	0.701	0.588	0.509	0.403	0.332	0.177
	18.0	11.8	9.33	7.87	6.11	4.64	3.73	2.24	1.68	1.38	1.16	1.01	0.800	0.661	0.353
1.70V/cell	11.11	6.97	5.35	4.43	3.34	2.49	2.00	1.19	0.884	0.718	0.603	0.521	0.409	0.337	0.180
	20.2	12.9	10.0	8.39	6.38	4.79	3.87	2.32	1.73	1.41	1.18	1.03	0.807	0.668	0.357
1.65V/cell	12.25	7.50	5.66	4.65	3.48	2.59	2.08	1.23	0.907	0.733	0.616	0.531	0.415	0.342	0.182
	22.0	13.7	10.5	8.72	6.59	4.94	4.00	2.37	1.76	1.43	1.20	1.04	0.816	0.674	0.360
1.60V/cell	12.85	7.81	5.89	4.80	3.58	2.64	2.12	1.27	0.929	0.752	0.629	0.541	0.424	0.348	0.183
	22.7	14.1	10.8	8.89	6.71	5.01	4.06	2.43	1.79	1.46	1.22	1.06	0.829	0.682	0.361

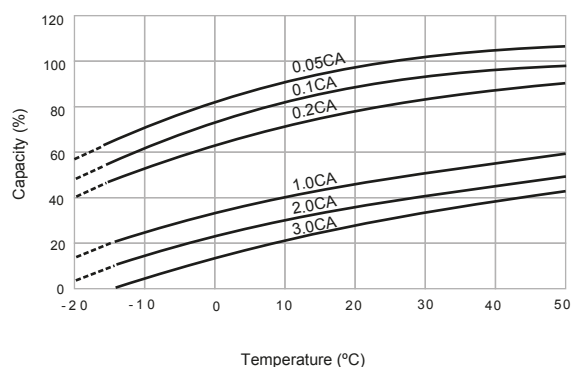
Discharge Characteristics



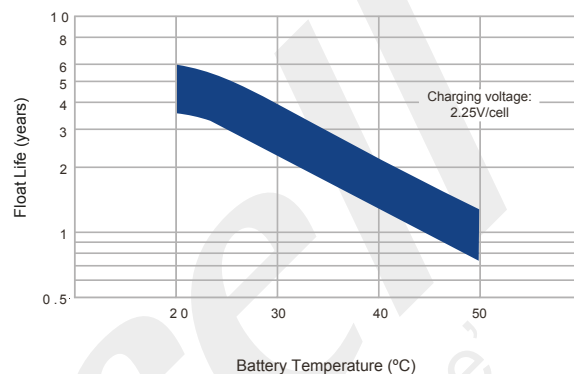
Float Charging Characteristics



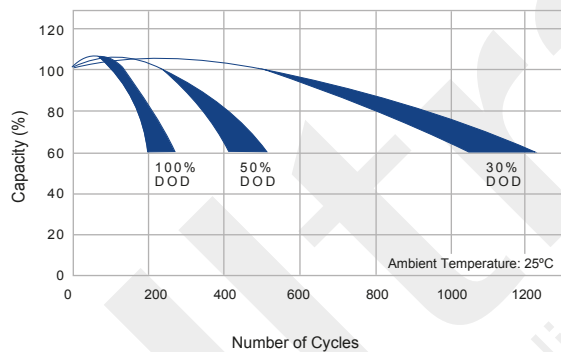
Temperature Effects in Relation to Battery Capacity



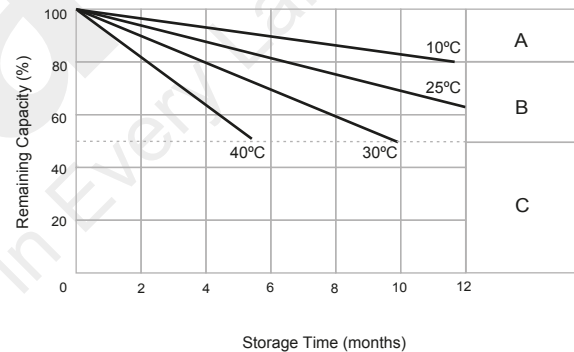
Effects of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



General Relation of Capacity vs. Storage Time



General Relation of Capacity vs. Storage Time (Notes)

- A) No supplementary charge required.
(Carryout supplementary charge before use if 100% capacity is required.)
- B) Supplementary charge required before use. Optional charging way as below:
 1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
 2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.25V/cell.
 3. Charged for 8 ~ 10 hours at limited current 0.05 CA.
- C) Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.