

UL4.5-4

Awaiting Image

Physical Specification

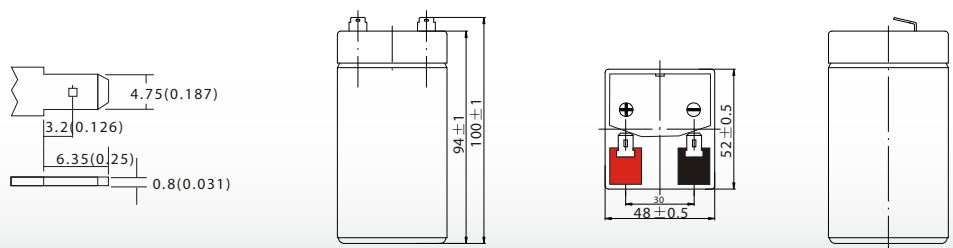
Part Number:	UL4.5-4
Length:	52.5 ± 3 mm (2.07 inches)
Width:	48 ± 3 mm (1.89 inches)
Container Height:	94 ± 3 mm (3.70 inches)
Total Height (with terminal):	100 ± 3 mm (3.94 inches)
Approx Weight:	Approx 0.60 kg (1.32lbs)

Specifications

	Nominal Voltage	4V	
	Nominal Capacity (20HR)	4.5AH	
Terminal Type	Standard Terminal	F1	
	Optional Terminal	F2	
Container Material	Standard Option	ABS	
	Flame Retardant Option (FR)	ABS (UL94:VO)	
Rated Capacity	4.50 AH/0.225A	(20hr, 1.80V/cell, 25°C / 77°F)	
	4.19 AH/0.419A	(10hr, 1.80V/cell, 25°C / 77°F)	
	3.85 AH/0.77A	(5hr, 1.75V/cell, 25°C / 77°F)	
	3.45 AH/1.15A	(3hr, 1.75V/cell, 25°C / 77°F)	
	2.65 AH/2.65A	(1hr, 1.60V/cell, 25°C / 77°F)	
Max Discharge Current	67.5A (5s)		
Internal Resistance	Approx 15mΩ		
Discharge Characteristics	Operating Temp. Range	Discharge: -15 ~ 50°C (5 ~ 122°F)	
		Charge: 0 ~ 40°C (5 ~ 104°F)	
		Storage: -15 ~ 40°C (5 ~ 104°F)	
	Nominal Operating Temp. Range	25 ± 3°C (77 ± 5°F)	
	Cycle Use	Initial Charging Current less than 1.35A. Voltage 4.8V ~ 5.0V at 25°C (77°F) Temp. Coefficient -10mV/°C	
	Standby Use	No limit on Initial Charging Current Voltage 4.5V ~ 4.6V at 25°C (77°F) Temp. Coefficient -6mV/°C	
	Capacity affected by Temperature	40°C (104°F)	103%
25°C (77°F)		100%	
0°C (32°F)		86%	
Design Floating Life at 20°C	5 Years		
Self Discharge	Ultracell batteries may be stored for up to 6 months at 25°C(77F) and then a refresh charge is required. For higher temperatures the time interval will be shorter.		

Dimensions

F1 Terminal



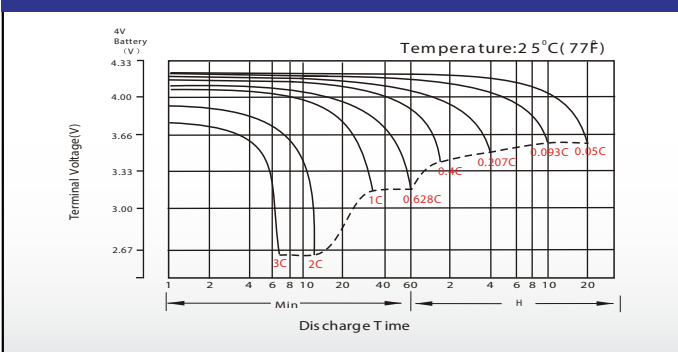
Constant Current Discharge (Amperes) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	8.57	6.58	5.45	4.71	3.64	2.68	2.26	1.34	1.05	0.85	0.69	0.60	0.486	0.406	0.223
1.80V/cell	11.5	8.41	6.59	5.57	4.30	3.12	2.53	1.46	1.13	0.91	0.75	0.65	0.515	0.419	0.225
1.75V/cell	13.0	9.24	7.19	5.99	4.46	3.24	2.65	1.51	1.15	0.93	0.77	0.66	0.524	0.430	0.227
1.70V/cell	14.3	10.1	7.68	6.30	4.65	3.37	2.74	1.55	1.18	0.95	0.78	0.68	0.532	0.438	0.231
1.65V/cell	15.7	10.9	8.17	6.69	4.90	3.45	2.80	1.58	1.23	0.99	0.81	0.69	0.540	0.447	0.234
1.60V/cell	17.4	11.8	8.73	7.13	5.18	3.60	2.83	1.64	1.27	1.02	0.83	0.71	0.545	0.452	0.236

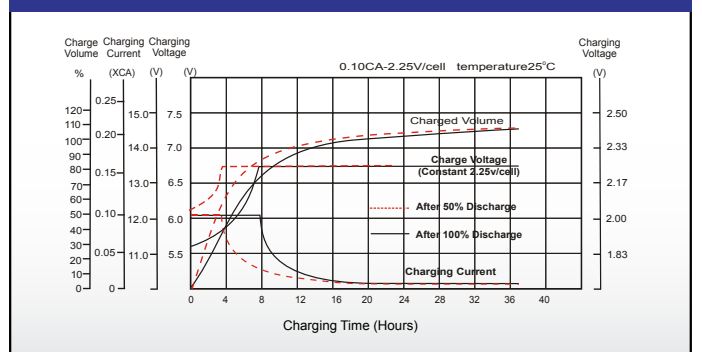
Constant Power Discharge (Watts) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	15.7	12.2	10.2	8.88	6.95	5.16	4.37	2.60	2.04	1.66	1.36	1.18	0.959	0.803	0.441
1.80V/cell	20.8	15.4	12.1	10.3	8.07	5.96	4.86	2.82	2.18	1.77	1.45	1.27	1.014	0.827	0.445
1.75V/cell	23.0	16.6	13.1	11.0	8.31	6.12	5.06	2.91	2.22	1.80	1.49	1.30	1.030	0.848	0.449
1.70V/cell	24.6	17.7	13.8	11.5	8.60	6.34	5.21	2.98	2.27	1.85	1.52	1.32	1.043	0.864	0.457
1.65V/cell	26.7	18.9	14.5	12.1	9.00	6.44	5.29	3.00	2.36	1.90	1.56	1.35	1.057	0.881	0.462
1.60V/cell	28.8	20.1	15.3	12.8	9.43	6.68	5.31	3.12	2.42	1.96	1.61	1.37	1.065	0.889	0.464

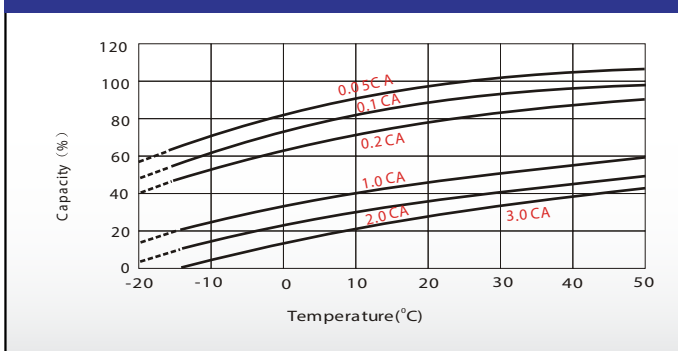
Discharge Characteristics



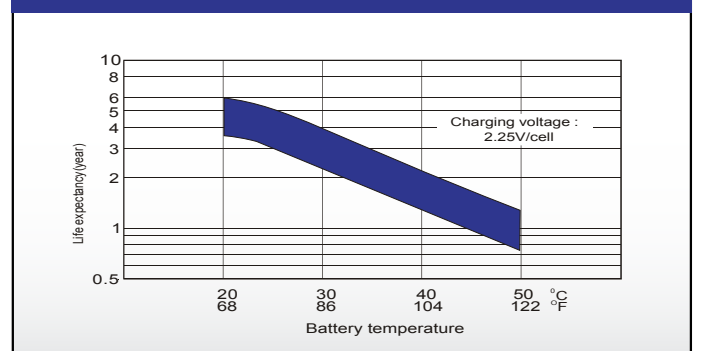
Float Charging Characteristics



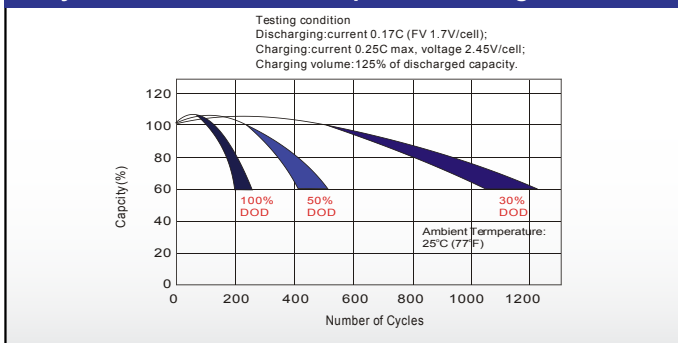
Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics

