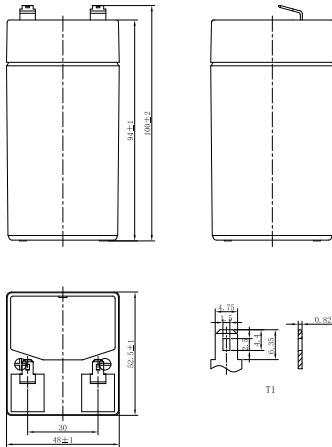


KB445-F1 4V 4.5Ah



CHARACTERISTICS

Item	Specifications	
Rated Voltage	4V	
Nominal Capacity (25°C)	$C_{20}, 1.75V/cell$	4.5Ah
Dimension	Length	52.5mm (2.07inches)
	Width	48mm (1.89inches)
	Container Height	94mm (3.70inches)
	Total Height	100mm (3.94inches)
Approx Weight	0.60kg (1.32lbs)	
Terminal	T1/T2	
Container Material	ABS (UL94 HB or V-0 optional)	
Short-circuit current	126A	
Internal Resistance (25°C)	Approx 15 mΩ (Fully charged)	
Operating Temp. Range	Discharge	-15~50°C (5~122°F)
	Charge	-20~40°C (-4~104°F)
	Storage	-15~40°C (5~104°F)
Nominal Operating Temp. Range	25±3°C (77±5°F)	
Max. Charging Current (25°C)	0.3C	
Charge voltage (25°C)	Standby Use	Cycle Use
	2.25-2.30V/cell	2.35-2.45V/cell
Temp. Coefficient	-3mV/cell/°C	
	-5mV/cell/°C	
Effect of temp. to Capacity	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	≤3% per month at 25°C (77°F). KB series batteries may be stored up to 6 months at 25°C (77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.	

DISCHARGE TABLE

Constant Current Discharge (Amperes) at 25°C (77°F)																
F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	12.8	8.74	6.97	5.67	4.19	3.08	2.53	1.87	1.49	1.09	0.876	0.747	0.646	0.509	0.416	0.220
1.80V/cell	13.7	9.27	7.31	5.89	4.32	3.16	2.60	1.91	1.51	1.11	0.889	0.758	0.656	0.516	0.421	0.223
1.75V/cell	14.4	9.64	7.55	6.06	4.43	3.23	2.65	1.95	1.54	1.12	0.901	0.768	0.663	0.522	0.426	0.225
1.70V/cell	15.1	10.0	7.81	6.23	4.55	3.30	2.70	1.98	1.56	1.14	0.913	0.778	0.671	0.527	0.430	0.227
1.67V/cell	15.7	10.3	8.00	6.36	4.63	3.36	2.74	2.01	1.58	1.15	0.922	0.785	0.677	0.531	0.433	0.229
1.60V/cell	16.6	10.7	8.27	6.55	4.75	3.44	2.80	2.05	1.61	1.17	0.938	0.797	0.687	0.539	0.439	0.231
Constant Power Discharge (Watts/cell) at 25°C (77°F)																
F.V/Time	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	24.1	16.6	13.3	10.9	8.10	5.97	4.93	3.66	2.91	2.14	1.73	1.48	1.28	1.01	0.826	0.440
1.80V/cell	25.7	17.5	13.9	11.3	8.32	6.11	5.03	3.72	2.96	2.17	1.75	1.49	1.30	1.02	0.837	0.445
1.75V/cell	26.8	18.1	14.3	11.5	8.49	6.22	5.12	3.78	3.00	2.20	1.77	1.51	1.31	1.03	0.844	0.450
1.70V/cell	27.8	18.7	14.7	11.8	8.67	6.34	5.19	3.83	3.04	2.23	1.79	1.53	1.32	1.04	0.853	0.454
1.67V/cell	28.5	19.1	15.0	12.0	8.80	6.42	5.26	3.88	3.07	2.25	1.80	1.54	1.33	1.05	0.858	0.457
1.60V/cell	29.6	19.7	15.4	12.3	9.00	6.54	5.36	3.94	3.12	2.28	1.83	1.56	1.35	1.06	0.868	0.462

APPLICATIONS

- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Alarm and security system
- Communication power supply
- DC power supply
- Auto control system

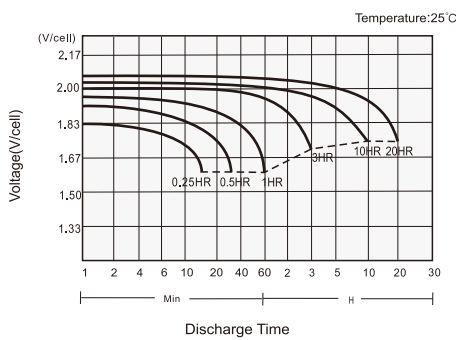
GENERAL FEATURES

- 5 years design life (25°C)
- Lead calcium alloy, sealed design, no watering required
- Puncture resistant micro-porous glass mat separators extend life
- Unique technology optimizes power capacity, cell consistency, and long-term reliability
- Designed for a wide range of applications

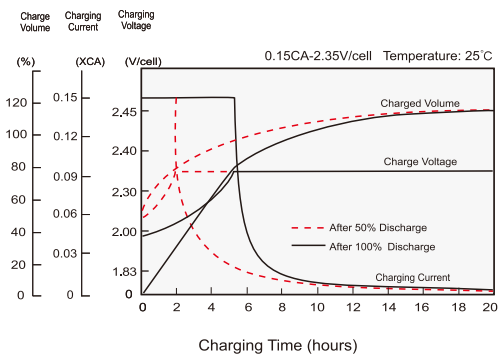
STANDARDS

- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Approved
- Manufactured under ISO 45001, ISO 9001, and ISO 14001 standards.

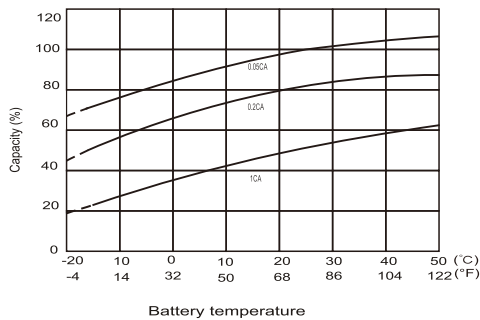
Discharge Characteristics



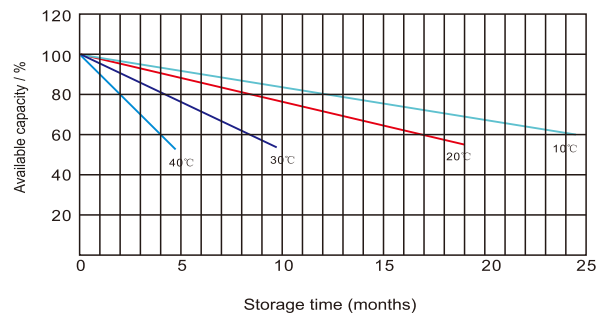
Charging Characteristics



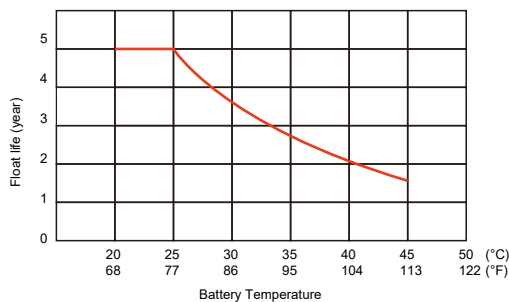
Effects of Temperature on Capacity



Self Discharge Characteristics



Float service life



Cycle Service Life in relation to the Depth of discharge

