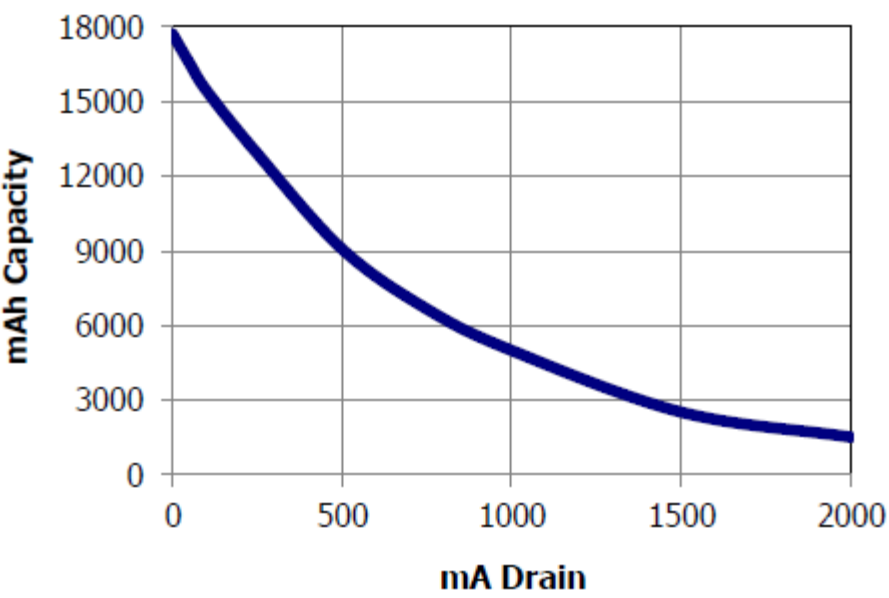


D-Cell Battery Characteristic (Energizer E95)

Constant Current Performance

Typical Characteristics (21°C) to 0.9 Volts



Data Captured By Dagra

D :=

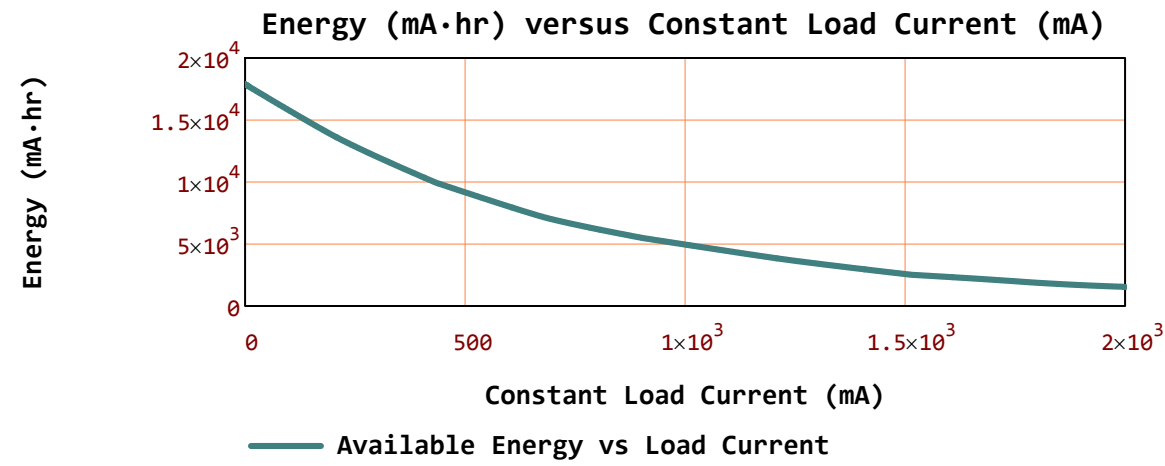
	0	1
0	-5.1	$1.8 \cdot 10^4$
1	-4.805	...

$I_L := D^{(0)} \cdot \text{mA}$

$E_{\text{Ref}} := D^{(1)} \cdot \text{mA} \cdot \text{hr}$

$E(x) := \text{interp}(\text{cspline}(I_L, E_{\text{Ref}}), I_L, E_{\text{Ref}}, x)$

$x := 0\text{mA}, 1\text{mA}.. 2000\text{mA}$



Predicted Run Time At 1.6 A

$E_{\text{Effective}} := E(1600 \cdot \text{mA}) = 2339.95366 \cdot \text{mA} \cdot \text{hr}$

$T_{\text{Predicted}} := \frac{E_{\text{Effective}}}{1.6 \text{A}} = 1.46247 \cdot \text{hr}$

Measured Run Time At 1.6 A

$T_{\text{Actual}} := \text{hhmmss}("1:29:00") = 1.48333 \cdot \text{hr}$

$\epsilon_{\text{Error}} := \frac{T_{\text{Predicted}} - T_{\text{Actual}}}{T_{\text{Actual}}} = -1.40645\%$

Current Draw Limit For 24 Hour Operation

$I_{\text{Load24}} := \text{root}\left(\frac{E(x)}{x} - 24\text{hr}, x, 100\text{mA}, 1000 \cdot \text{mA}\right) = 422.03012 \text{mA}$