

Aluminum Electrolytic Capacitor Expected Life

SAMWHA ELECTRIC

1.Standard Serises.

$$L = L_s \times 2^{\frac{T_s - (T+\Delta T)}{10}}$$

ALL of SMD, TR, BL products except guaranteed products of ripple are reduced the life when applying ripple.

2. Guaranteed products of ripple (BA, RH, BM, BL, BK, BM, QA, AR, HZ)

$$L = L_s \times 2^{\left[\frac{(T_s + \Delta T_s) - (T + \Delta T)}{10} \right]}$$

* ΔT

Ambient temperature(°C)	~50	65	85	105
ΔTs ₁ (°C)	30	25	10	5

* ΔTs

Ts	85	105
ΔTs(°C)	10	5

$\Delta T = \Delta T_{s1} \left[\frac{I}{I_s} \right]^2$

(Operating input Ripple)

(Rated Ripple)

3. Explanation

L : Lifetime of capacitor to be estimated (Hour)

Ls : Base life time of capacitor (Hour)

Ts : Maximum operating temperature shown in catalog (°C)

ΔT_s : An Increase temperature of capacitor by internal heating due to rated maximum permissible ripple current. (°C)

T : Ambient temperature (°C)

ΔT : An increase temperature produced by internal heating due to actual operating ripple current. (°C)