

# Expected Load Life Calculation of Electrolytic Capacitors

The expected load life of a specific capacitor can be calculated based on the given endurance, maximum temperature and temperature of application:

## Aluminum Polymer Capacitors Radial THT & V-Chip SMT:

$$L_x = L_{Nom} * 10^{\frac{T_{max} - T_A}{20}}$$

## Aluminum Electrolytic Capacitors & Aluminum Polymer Capacitors H-Chip SMT:

$$L_x = L_{Nom} * 2^{\frac{T_{max} - T_A}{10}}$$

- $L_x$  = Expected load life of component
- $L_{Nom}$  = Endurance of component (see datasheet)
- $T_{max}$  = Maximum allowed temperature of component
- $T_A$  = Component ambient temperature within application

Temperature (°C)	Aluminum Polymer Capacitors Radial THT & V-Chip SMT		Aluminum Electrolytic Capacitors & Aluminum Polymer Capacitors H-Chip SMT					
	Expected Load Life (h)		Expected Load Life (h)					
125	2,000	–	–	–	–	–	–	–
115	6,325	–	–	–	–	–	–	–
105	20,000	2,000	10,000	5,000	2,000	–	–	–
95	63,246	6,325	20,000	10,000	4,000	–	–	–
85	200,000	20,000	40,000	20,000	8,000	5,000	2,000	–
75	632,455	63,246	80,000	40,000	16,000	10,000	4,000	–
65	2,000,000	200,000	160,000	80,000	32,000	20,000	8,000	–
55	6,324,555	632,455	320,000	160,000	64,000	40,000	16,000	–
45	20,000,000	2,000,000	640,000	320,000	128,000	80,000	32,000	–
35	63,245,553	6,324,555	1,280,000	640,000	256,000	160,000	64,000	–

## Expected Load Life vs. Temperature

