Data Sheet

Customer :

Product : Aluminum Electrolytic Capacitors – EFK Series

Size : 8x11.5mm ~ 18x41mm

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Edition : Ver. 1

Record of change

Date	Ver.	Description	Page
15-Aug.-2016	1		

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15-Aug.-2016	15-Aug.-2016	15-Aug.-2016	
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Subject : Storage of Aluminium Electrolytic Capacitors

We recommend the following conditions for storage :

1. It is recommended to keep capacitors between the ambient temperatures of 5℃to 35℃ and a relative humidity of 75% or below.

2. Confirm that the environment does not have any of the following conditions :
   (1) Damp conditions such as water, saltwater spray, or oil spray or fumes. High humidity or humidity condensation situations.
   (2) In an atmosphere filled with toxic gasses (such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, elc.)
   (3) Being exposed to direct sunlight, ozone, ultraviolet ray, or radiation.
   (4) Being exposed to acidic or alkaline solutions.

3. Keep capacitors in the original package.

4. Storage life & Re-aging :
   When Aluminium Electrolytic Capacitors are stored without applied voltage, their L.C. (Leakage Current) characteristic increases over time. For long-term stored products, the following treatments must be performed before use :
   (1) For Low Voltage Aluminium Electrolytic Capacitors (i.e., Working Voltage W.V. ≦ 120V) :
   After one year of storage, a test must be performed before use. If the L.C. value exceeds the specified value,it is recommended not to use them, as lifespan and quality cannot be 100% guaranteed.
   (2) For Medium/High Voltage Aluminium Electrolytic Capacitors (i.e., Working Voltage W.V. ≧160V) :
   (A) If stored for more than 6 months, a test must be performed before use to ensure lifespan and quality.
   (B) If stored for 6-24 months and the L.C. value is between 25% and 40% of the specified value, it is recommended to recharge (re-agent) before use. If the L.C. value exceeds 40% of the specified value, do not use.
   (3) Re-aging condition : It is recommended to apply D.C. working voltage to the capacitor for 2 hours through 1KΩ of protective series resistor.

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EFK SERIES

- EFK series capacitors are suitable for electronic ballast and energy saving lamp..
- Load life 105℃, 6000 ~ 8000 hours assured.

Characteristics

Voltage Range	160 ~450V						
Temperature Range	-40 ~ + 105℃						
Capacitance Range	1 to 330 uF						
Leakage Current	I≦0.04CV+100uA, After 1 minute with rated working voltage applied.						
Capacitance Tolerance	±20% at 120Hz , 20℃(10% Tol. is available upon request)						
Dissipation Factor	W.V.	160	200	250	350	400	450
	tanδ	0.10	0.10	0.10	0.12	0.12	0.12
Low Temperature Characteristics (120Hz)	W.V.	160	200	250	350	400	450
	Z-25℃ / Z+20℃	3	3	3	5	5	6
	Z-40℃ / Z+20℃	6	6	6	6	6	-

Load life

Test condition
Duration time :As right
Ambient temperature :+105℃
Applied voltage :Rated DC working voltage
After test requirement at +20℃
Capacitance change: ≦±20% of the initial measured value
Dissipation factor: ≦200% of the initial specified value
Leakage current : ≦The initial specified value

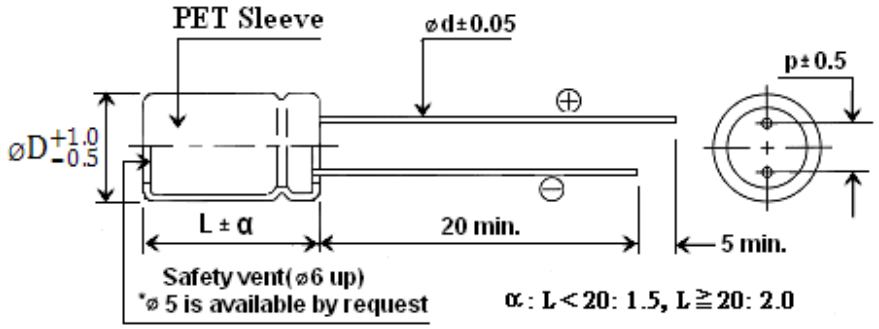
φ (mm)	Life(hrs)
8	6000
≧10	8000

For standard size

Shelf life (at 105℃)

Test conditions
Duration time : 1000Hrs
Ambient temperature :+105℃
Applied voltage : None
After test requirement at +20℃: Same limits as Load life.
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.

Drawing



Dϕ	5	6.3	8	10	13	16	18
p	2.0	2.5	3.5	5.0	5.0	7.5	7.5
dϕ	0.5	0.5	0.5	0.6	0.6	0.8	0.8

Ripple Current Coefficients

Frequency(Hz)	120	1K	10K	≧100K
Multiplier	1.0	1.5	1.7	1.9

Multiplier for R.C. vs Temperature

Temp.(℃)	45	60	70	85	95	105
Multiplier.	2.10	1.90	1.65	1.40	1.25	1.00

Dimensions, Maximum Permissible Ripple Current & Impedance

WV / Cap.	160		200		250		350		400		450	
uF	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1.0							8X11.5	75	8X11.5	65	8X11.5	85
2.2					8X11.5	70	8X11.5	80	8X11.5	85	10X12.5	90
3.3					8X11.5	75	10X12.5	85	10X12.5	95	10X16	105
4.7			8X11.5	80	10X12.5	100	10X12.5	100	10X16	110	10X16	115
6.8			8X11.5	100	10X12.5	105	10X16	110	10X16	115	10X20	125
10	10X12.5	105	10X12.5	115	10X16	130	10X20	140	10X20	160	13X20	175
22	10X16	170	10X16	170	10X20	190	13X20	245	13X20	230	16X21	275
33	10X20	235	10X20	245	13X20	305	13X25	340	13X25	310	16X25	370
47	13X20	285	13X20	370	13X25	370	16X25	410	16X31.5	445	18X25	455
68	13X20	445	13X25	425	16X25	495	18X25	530	18X31.5	550	18X31.5	600
100	16X21	550	16X25	600	16X31.5	645	18X35.5	665	18X41	750		
150	16X25	655	16X31.5	825	18X31.5	775						
220	18X31.5	875	18X31.5	1000								
330	18X35.5	1190										

Ripple Current (mA, rms) at 105°C, 120Hz

Part Numbering System

EFK	101	M	2G	A	–	T1
SERIES	CAPACITANCE	TOL.	W.V.	PACKAGE	SIZE	LEAD SPACE
	IN 3DIGITS	K= ± 10%	2C=160V	B= Bulk	Omit if only	Omit if Bulk
	010= 1.0uF	M= ± 20%	2D=200V	C5= Cut 5mm	one size	T1= L/S 2.5mm Taped
	4R7= 4.7 uF		2E=250V	A= Ammo Pack	A=Smaller	TA= Lead forming space 5mm Taped
	101= 100uF		2V=350V	R= Tape&Reel	size	
	331=330uF		2G=400V			T35= L/S 3.5mm Taped
			2W=450V	F5= Lead formed & cut 5mm		T2=L/S 5mm Taped