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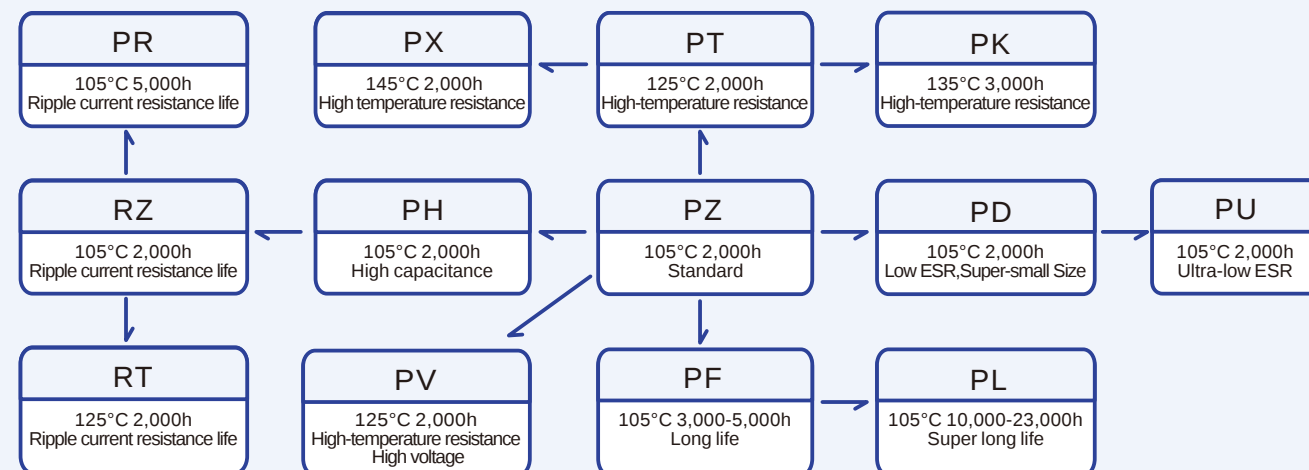
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Group Chart CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS

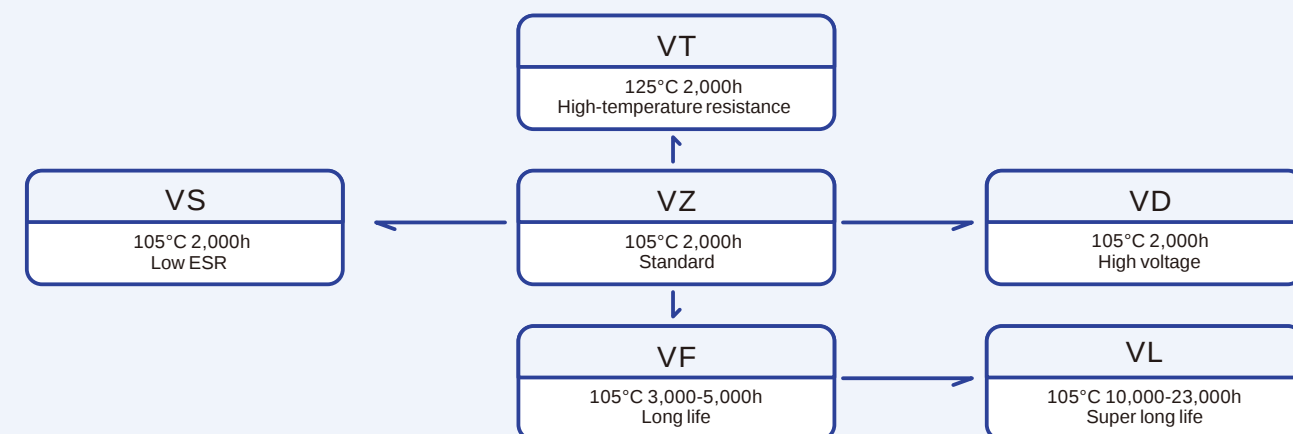
MULTILAYER TYPE



RADIAL TYPE



SURFACE MOUNT TYPE



CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

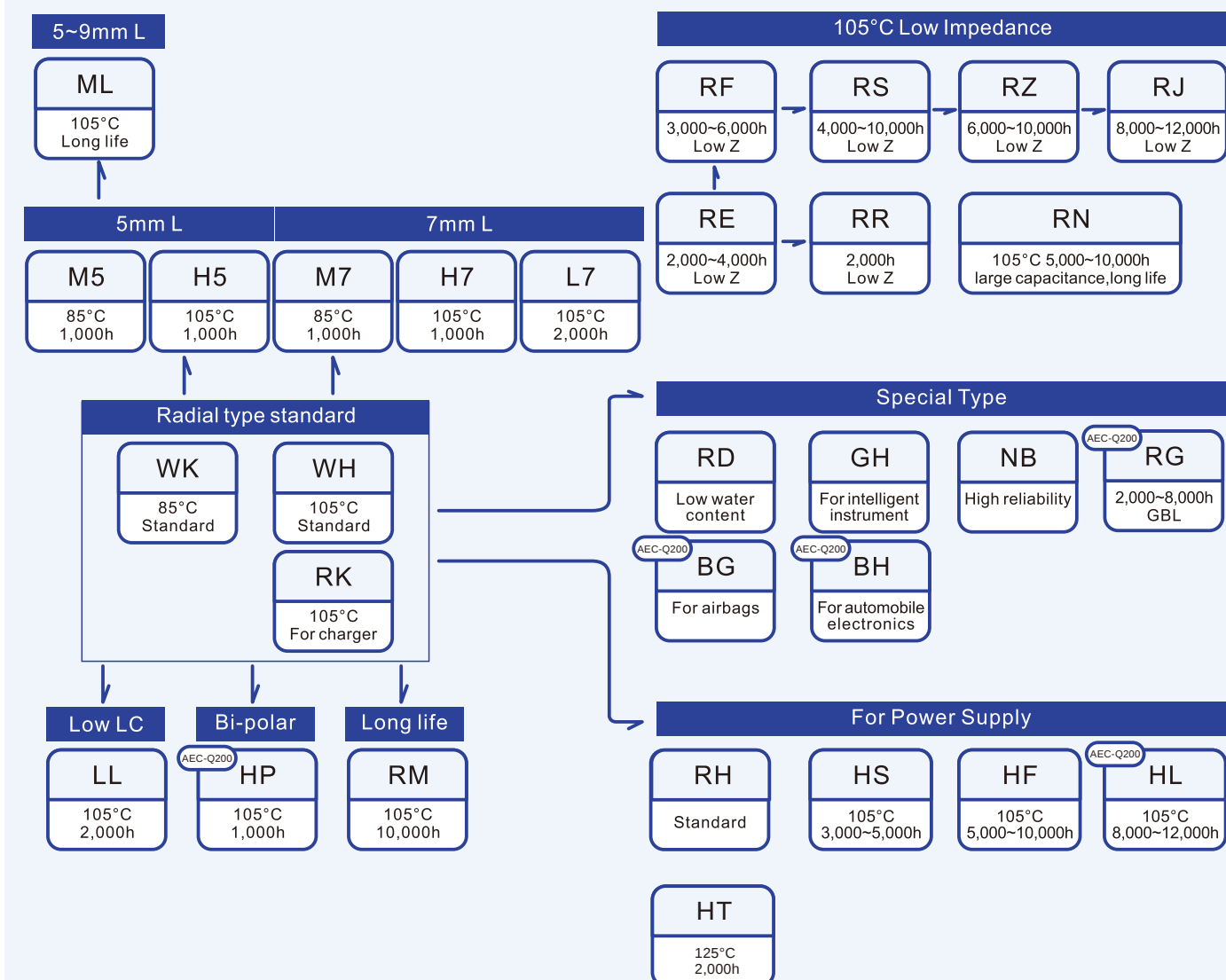
RADIAL TYPE



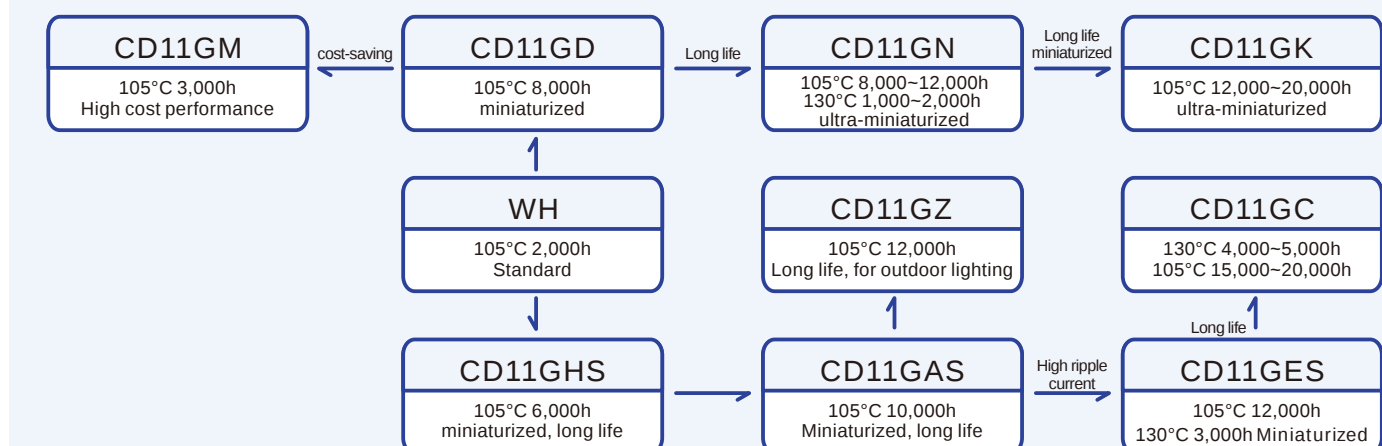
SURFACE MOUNT TYPE



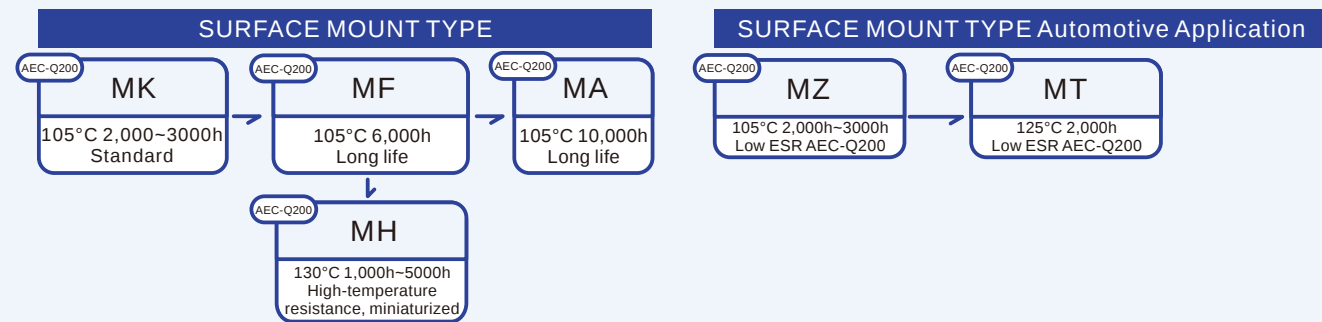
RADIAL TYPE



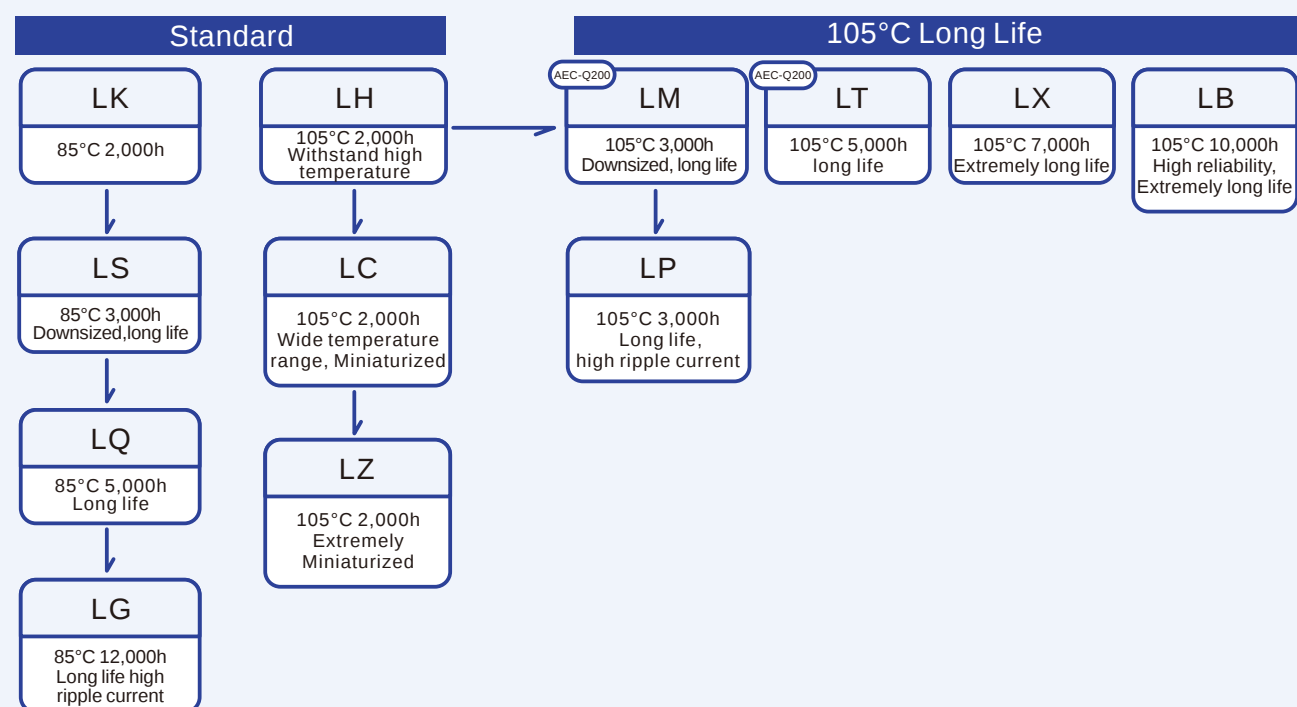
FOR LIGHTING APPLICATION



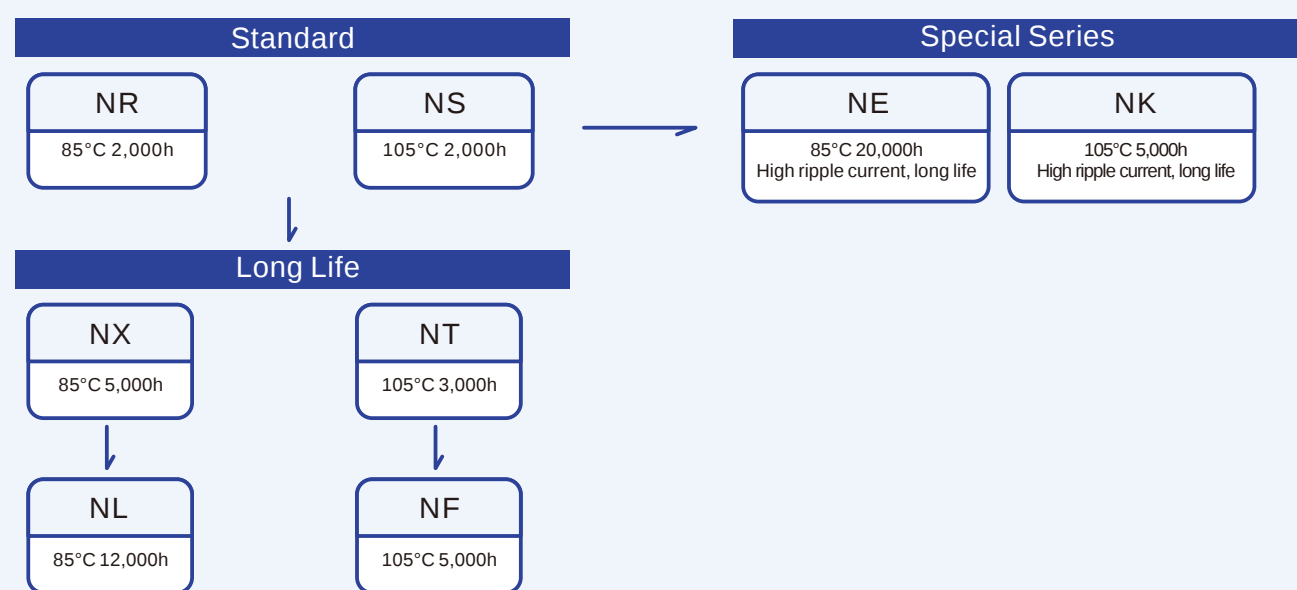
■ SMD TYPE



■ SNAP-IN & LUG TERMINAL TYPE

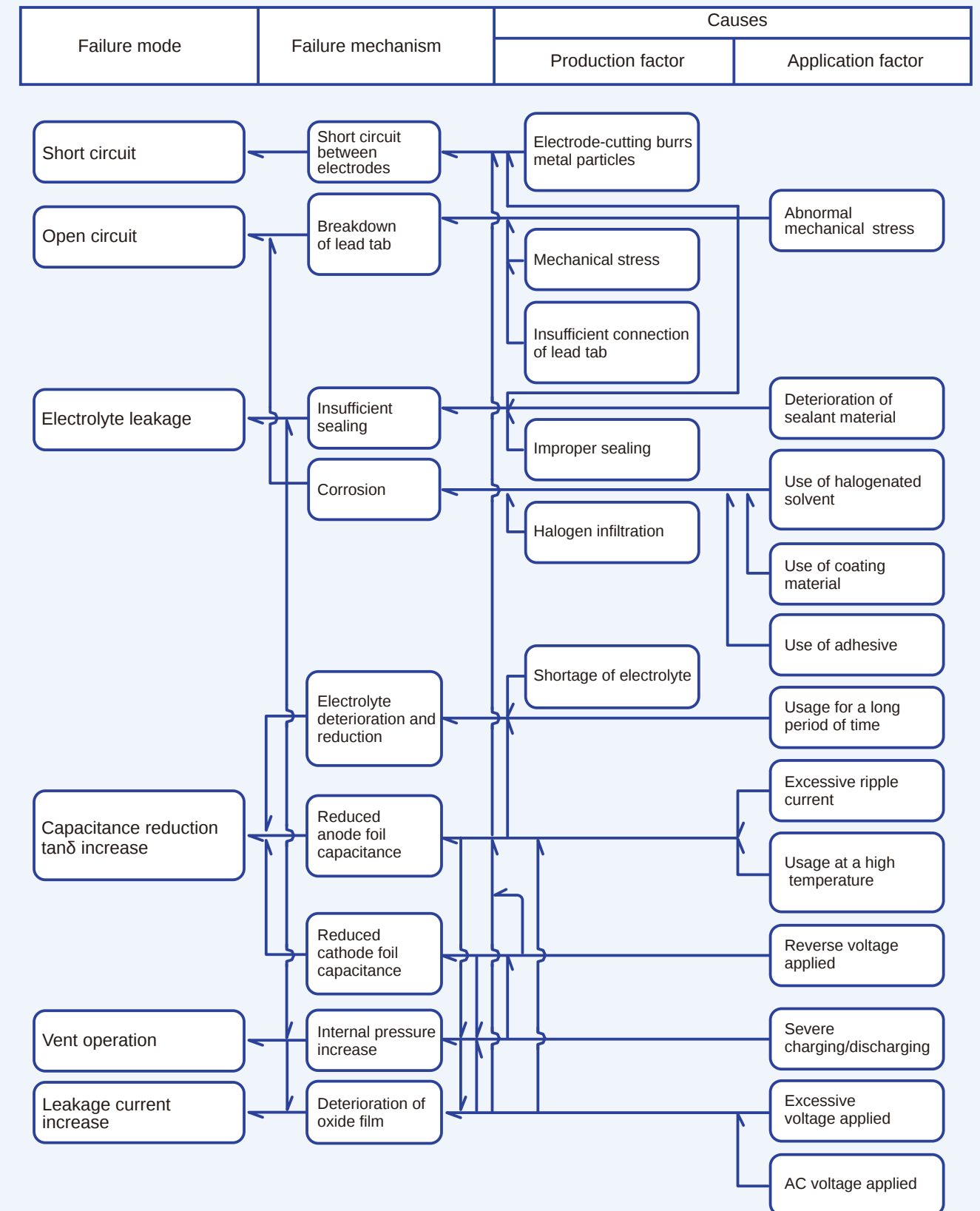


■ SCREW-MOUNT TERMINAL TYPE



■ Failure Modes

Aluminum Electrolytic Capacitors Show Various Failure Modes in Different Applications



ALUMINUM ELECTROLYTIC CAPACITORS

Application Guidelines for Aluminum Electrolytic Capacitors

■ Designing Device Circuits

1. Select the capacitors to suit installation and operating conditions, and use the capacitors to meet the performance limits prescribed in this catalog or the product specifications.

2. Polarity

Aluminum Electrolytic Capacitors are polarized.

Apply neither reverse voltage nor AC voltage to polarized capacitors. Using reversed polarity causes a short circuit or venting. Before use, refer to the catalog, product specifications or capacitor body to identify the polarity marking. (The shape of rubber seal does not represent the directional rule for polarity.) Use a bi-polar type of non-solid aluminum electrolytic capacitor for a circuit where the polarity is occasionally reversed. However, note that even a bi-polar aluminum electrolytic capacitor must not be used for AC voltage applications.

3. Operating voltage

Do not apply a DC voltage which exceeds the full rated voltage. The peak voltage of a superimposed AC voltage (ripple voltage) on the DC voltage must not exceed the full rated voltage.

A surge voltage value, which exceeds the full rated voltage, is prescribed in the catalogs, but it is a restricted condition, for especially short periods of time.

4. Ripple current

The rated ripple current has been specified at a certain ripple frequency. The rated ripple current at several frequencies must be calculated by multiplying the rated ripple current at the original frequency using the frequency multipliers for each product series.

5. Category temperature

The use of a capacitor outside the maximum rated category temperature will considerably shorten the life or cause the capacitor to vent.

The relation between the lifetime of aluminum electrolytic capacitors and ambient temperature follows Arrhenius' rule that the lifetime is approximately halved with each 10°C rise in ambient temperature.

6. Life expectancy

Select the capacitors to meet the service life of a device.

7. Charge and discharge

Do not use capacitors in circuits where heavy charge and discharge cycles are frequently repeated. Frequent and sharp heavy discharging cycles will result in decreasing capacitance and damage to the capacitors due to generated heat. Specified capacitors can be designed to enduring such a condition. Rapid charging/discharging may be repeated in a circuit where the ripple voltage at the two terminals of the aluminum electrolytic capacitor fluctuates greatly. If the variation range of voltage exceeds 70Vp-p, please consult us.

8. Failure modes of capacitors

Non-solid aluminum electrolytic capacitors, in general, have a lifetime which ends in an open circuit, the period is dependent upon temperature. Consequently, lifetime of capacitors can be extended by reducing the ambient temperature and/or ripple current.

9. Insulating

- a) Electrically isolate the following parts of a capacitor from the negative terminal, the positive terminal and the circuit traces.
 - The outer can case of a non-solid aluminum electrolytic capacitors.
 - The dummy terminal of a non-solid aluminum electrolytic capacitors, which is designed for mounting stability.
- b) The outer sleeve of a capacitor is not assured as an insulator (Except for screw type). For applications that require an insulated outer sleeve, a custom-designed capacitor is recommended.

10. Conditions

Do not use/expose capacitors to the following conditions.

- a) Oil, water, salty water. Avoid storage in damp locations.
- b) Direct sunlight.
- c) Toxic gases such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine or its compounds, and ammonium.
- d) Ozone, ultraviolet rays or radiation.
- e) Severe vibration or mechanical shock conditions beyond the limits prescribed in the catalogs or the product specification.

11. Mounting

- a) The electrolytic paper and the electrolytic-conductive electrolyte in a non-solid aluminum electrolytic capacitor are flammable. Leaking electrolyte on a printed circuit board can gradually erode the copper traces, possibly causing smoke or burning by short-circuiting the copper traces.

Verify the following points when designing a PC board.

 - Provide the appropriate hole spacing on the PC board to match the terminal spacing of the capacitor.
 - Make the following open space over the vent so that the vent can operate correctly.

Case diameter	Clearance
Ø6.3 to Ø16mm	2mm minimum
Ø18 to Ø35mm	3mm minimum
Ø40mm or more	5mm minimum

 - Do not place any wires or copper traces over the vent of the capacitor.
 - Installing a capacitor with the vent facing the PC board needs an appropriate ventilation hole in PC board.
 - Do not pass any copper traces beneath the seal side of a capacitor. The trace must pass 1 or 2mm to the side of the capacitor.
 - Avoid placing any heat-generating objects adjacent to a capacitor or even on the reverse side of the PC board.
 - Do not pass anything via holes or underneath a capacitor.
 - In designing double-sided PC boards, do not locate any copper trace under the seal side of a capacitor.

- b) Do not mount the terminal side of a screw mount capacitor downwards. If a screw terminal capacitor is mounted on its side, make sure the positive terminal is higher than the negative terminal.

Do not fasten the screws of the terminals and the mounting clamps over

the specified torque prescribed in the catalog or the product specifications.

- c) For a surface mount capacitor, design the copper pads of the PC board in accordance with the catalog or the product specifications.

12. Others

- a) The electrical characteristics of capacitors vary in respect to temperature, frequency and service life. Design the device circuits by taking these changes into account.
- b) Capacitors mounted in parallel need the current to flow equally through the individual capacitors.
- c) Capacitors mounted in series require resistors in parallel with the individual capacitors to balance the voltage.
- d) Using capacitor for applications which always consider safety. Consult with our factory before use in applications which can affect human life.(space equipment, aerial equipment, nuclear equipment, medical equipment, vehicle control equipment, etc.) Please note that the product which is designed only for specific usage can not be used for other purposes.(ex.Photo flash type, etc.)

■ Installing Capacitors

1. Installing

- a) Used capacitors are not reusable, except in the case that the capacitors are detached from a device for periodic inspection to measure their electrical characteristics.
- b) If the capacitors have self-charged, discharge the capacitors through a resistor of approximately 1kΩ before use.
- c) If capacitors are stored at a temperature of 35°C or more and more than 75% RH, the leakage current may increase. In this case, they can be reformed by applying the rated voltage through a resistor of approximately 1kΩ.
- d) Verify the rated capacitance and voltage of the capacitors when installing.
- e) Verify the polarity of the capacitors.
- f) Do not use the capacitors if they have been dropped on the floor.
- g) Do not deform the cases of capacitors.
- h) Verify that the lead spacing of the capacitor fits the hole spacing in the PC board before installing the capacitors. Some standard pre-formed leads are available.
- i) For pin terminals or snap-in terminals, insert the terminals into PC board and press the capacitor downward until the bottom of the capacitor body reaches PC board surface.
- j) Do not apply any mechanical force in excess of the limits prescribed in the catalogs or the product specifications of the capacitors. Also, note the capacitors may be damaged by mechanical shocks caused by the vacuum/insertion head, component checker or centering operation of an automatic mounting or insertion machine.

2. Soldering and Solderability

- a) When soldering with a soldering iron
 - Soldering conditions (temperature and time) should be within the limits prescribed in the catalogs or the product specifications.
 - If the terminal spacing of a capacitor does not fit the terminal hole spacing of the PC board, reform the terminals in a manner to minimize a mechanical stress into the body of the capacitor.
 - Remove the capacitors from the PC board, after the solder is completely melted, reworking by using a soldering iron minimizes the mechanical stress to the capacitors.
 - Do not touch the capacitor body with the hot tip of the soldering iron.
- b) Flow soldering
 - Do not dip the body of a capacitor into the solder bath, only dip the terminals in. The soldering must be done on the reverse side of PC board.
 - Soldering conditions (preheat, solder temperature and dipping time) should be within the limits prescribed in the catalogs or the product specifications.
 - Do not apply flux to any part of capacitors other than their terminals.
 - Make sure the capacitors do not come into contact with any other components while soldering.
- c) Reflow soldering
 - Soldering conditions (preheat, solder temperature and dipping time) should be within the limits prescribed in the catalogs or the product specifications.
 - When setting the temperature infrared heaters, consider that the infrared absorption causes material to be discolored and change in appearance.
 - Do not solder capacitors more than once using reflow. If needed, be sure to consult us first.
 - Make sure capacitors do not come into contact with copper traces.
- d) Do not re-use surface mount capacitors which have already been soldered. In addition, when installing a new capacitor onto the assembly board to rework, remove old residual flux from the surface of the PC board, and then use a soldering iron within the prescribed conditions.
- e) Confirm whether reflow soldering is applicable for the capacitors before operation.

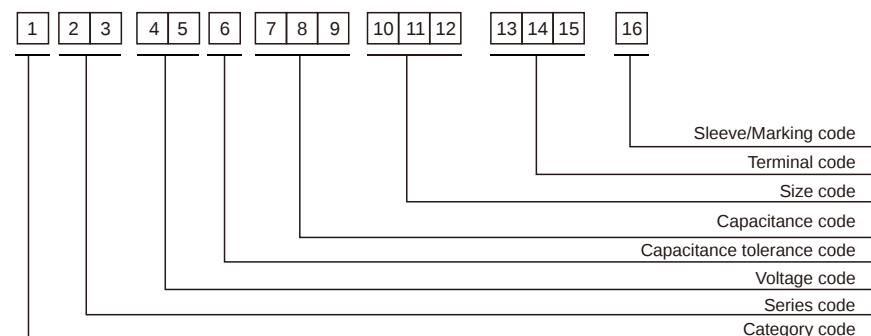
3. Handling after soldering

- Do not apply any mechanical stress to the capacitor after soldering onto the PC board.
- a) Do not lean or twist the body of the capacitor after soldering the capacitors onto the PC board.
- b) Do not use the capacitors for lifting or carrying the assembly board.
- c) Do not hit or poke the capacitor after soldering to PC board. When stacking the assembly board, be careful that other components do not touch the aluminum electrolytic capacitors.
- d) Do not drop the assembly board.

4. Cleaning PC board

- a) Do not wash capacitors by using the following cleaning agents.
 - Halogenated solvents: cause capacitors to fail due to corrosion.
 - Alkali system solvents: corrode (dissolve) an aluminum case.
 - Petroleum and terpene system solvents: cause the rubber seal material to deteriorate.
 - Xylene: causes the rubber seal material to deteriorate.
 - Acetone: erases the marking. Solvent-proof capacitors are only suitable for washing within the cleaning conditions prescribed in the catalogs or the product specifications. In particular, ultrasonic cleaning will accelerate damaging capacitors.

Part Numbering System



Category code

Type	Code
1	
Aluminum Electrolytic Capacitor	E

Series code

Series name	Code	
	2	3
WH	W	H
CD11GE	G	E
CD11GES	G	X
CD11GAS	G	W
CD11GHS	G	S
NR	N	R

Voltage code

WV (V _{dc})	Code	
	4	5
2.5	0	E
3	0	D
4	0	G
6.3	0	J
6.8	0	C
7	0	Q
7.5	0	A
10	1	A
12	1	T
16	1	C
25	1	E
35	1	V
40	1	G
50	1	H
63	1	J
80	1	B
100	1	K
160	2	C
180	2	L
200	2	D
220	2	N
250	2	E
315	2	F
350	2	V
380	2	P
400	2	G
420	2	T
450	2	W
500	2	H
550	2	J
600	2	K

Capacitance tolerance code

Tol. (%)	Code	
	6	
-10 +10	K	
-20 +20	M	
-10 +30	Q	
-10 +20	V	
0 +20	A	
-5 +20	C	
-10 -20	B	
-5 +5	D	
-0 +10	E	
-5 -20	F	
-15 +5	N	

Capacitance code

Cap (μF)	Code		
	7	8	9
0.10	R	1	0
0.22	R	2	2
0.33	R	3	3
0.47	R	4	7
0.68	R	6	8
1	0	1	0
2.2	2	R	2
3.3	3	R	3
4.7	4	R	7
6.8	6	R	8
10	1	0	0
22	2	2	0
33	3	3	0
47	4	7	0
68	6	8	0
100	1	0	1
220	2	2	1
330	3	3	1
470	4	7	1
680	6	8	1
1000	1	0	2
2200	2	2	2
3300	3	3	2
4700	4	7	2
6800	6	8	2
10000	1	0	3
22000	2	2	3
33000	3	3	3
68000	6	8	3

Size code

ΦD (mm)	Code	L (mm)	Code	
	10		11	12
4	C	5	0	5
5	D	7	0	7
6.3	E	11	1	1
8	F	12	1	2
10	G	16	1	6
11	H	20	2	0
12	J	25	2	5
12.5	W	30	3	0
13	K	35	3	5
14	X	40	4	0
16	L	46	4	6
18	M	50	5	0
19	Z	60	6	0
20	N	80	8	0
22	O	100	A	0
25	P	115	B	5
30	Q	120	C	0
35	R	130	D	0
40	Y	140	E	0
51.6	S	160	G	0
64.3	T	200	K	0
76.9	U	220	M	0
91	V	236	N	6
100	A	250	P	0

Terminal code

Specification	Code		
	13	14	15
Bulk packing	O	-	-
Φ4~8 Taping F=5.0mm	P	5	0
Φ10~12.5 Taping F=5.0mm	B	5	0
Lead Cut L=3.5mm	C	3	5
Lead Cut L=11.0mm	C	B	0
Lead Forming Cut L=4.5mm	F	-	-
Kink&Cut L=4.5mm	J	-	-
Snap-in type Terminal 4.0mm in length	K	-	-
Three Terminal	T	-	-
Ring clip mounting standard design	A	0	0
Ring clip mounting special design	S	-	-

Sleeve/Marking code

Sleeve/Marking	Code
16	
PVC	C
PET	T
Dark blue	B
Bright red	R
Sky-blue	S
Light blue	T
Pink	Z
Black	H
Purple-blue	V
Red	O

Lead Forming

Taping Specifications (Unit: mm)

Fig.1 code: X

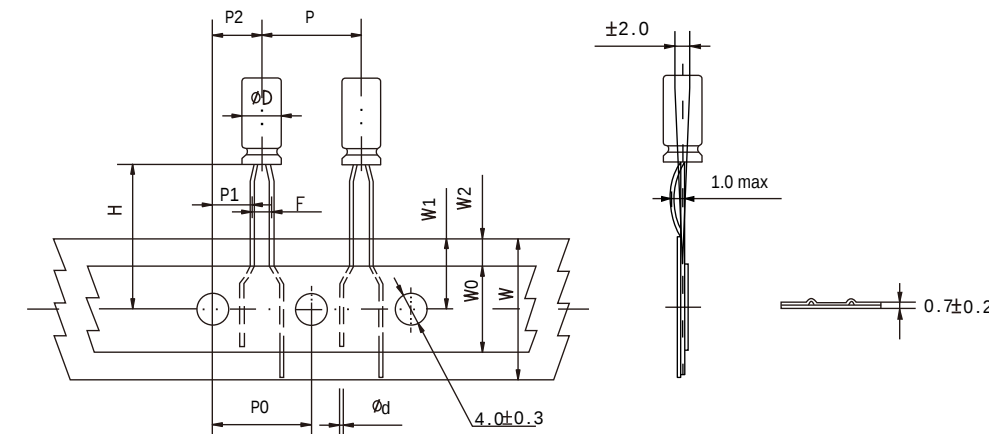


Fig.2 code: B

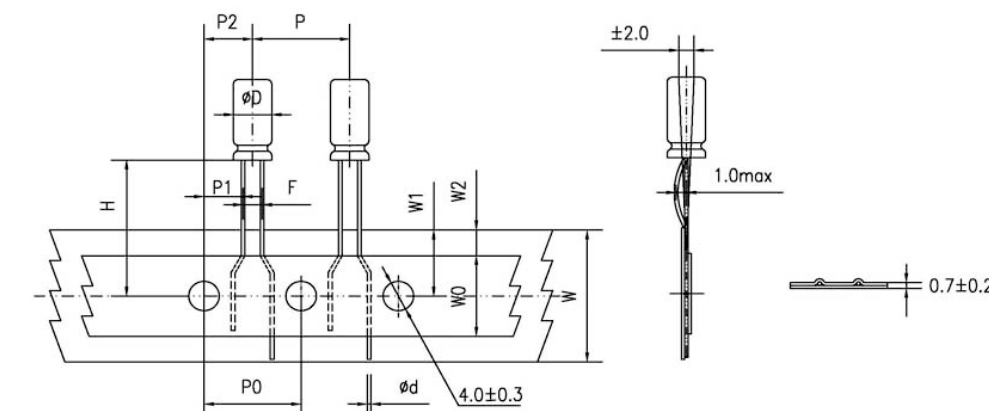


Fig.3 code: B

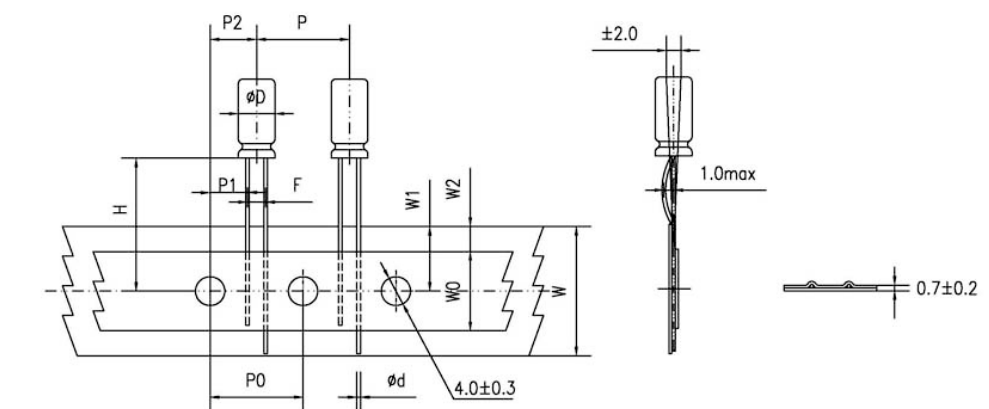
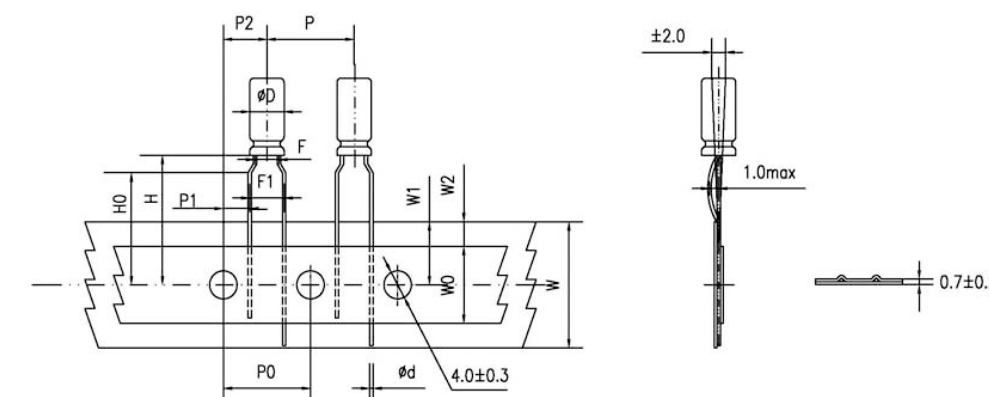


Fig.4 code: P



Lead Forming

Specification Fig.1 & Fig.2 & Fig.3 (mm)

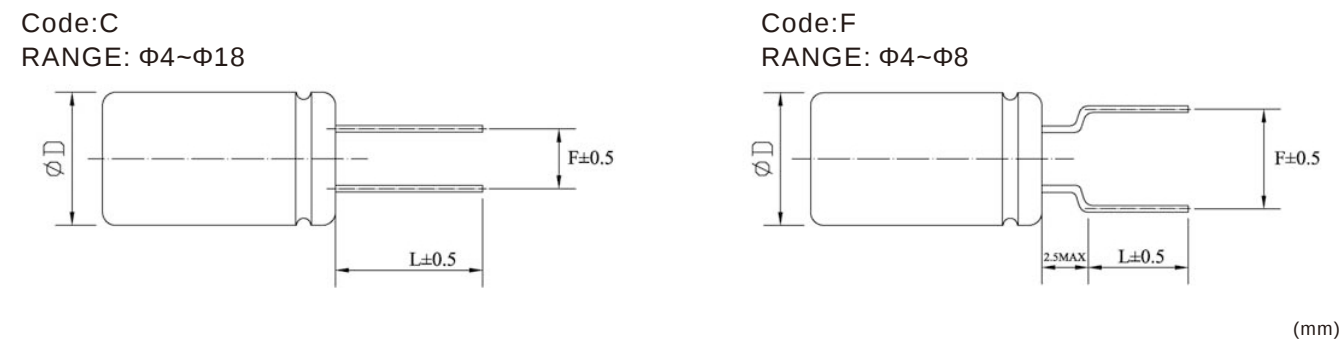
Items	Symbol	Case size											Tolerance	
		4×5 4×7		5×5 5×7		5×11		6.3×5	6.3×7 6.3×9 6.3×11 6.3×12	8×5/7 8×9/11 8×11.5 8×12	8×16 8×20	10×9 10×12 10×13/16 10×20/25		12.5×16 12.5×20 13×20
Pin Code		X	B	X	B	X	B	B	B	B	B	B	B	
Lead wire diameter	Φd	0.45		0.45		0.5		0.45	0.5	0.5	0.5/0.6	0.6	0.6	±0.05
Pitch of body	P	12.7		12.7		12.7		12.7	12.7	12.7	12.7	12.7	15	±1.0
Feed hole pitch	P0	12.7		12.7		12.7		12.7	12.7	12.7	12.7	12.7	15	±0.2
Distance from hole center to lead	P1	5.1	5.6	5.1	5.35	5.1	5.35	5.1	5.1	4.6	4.6	3.85	5.0	±0.7
Distance from feed hole center to body center	P2	6.35		6.35		6.35		6.35	6.35	6.35	6.35	6.35	7.5	±1.0
Lead-to-lead distance	F	2.5	1.5	2.5	2.0	2.5	2.0	2.5	2.5	3.5	3.5	5.0	5.0	±0.5
Height of body from tape center	H	18.5		18.5		18.5		18.5	18.5	18.5	18.5	18.5	18.5	±0.75
Base tape width	W	18.0		18.0		18.0		18.0	18.0	18.0	18.0	18.0	18.0	±0.5
Adhesive tape width	W0	6.0		6.0		6.0		6.0	8.0	8.0	8.0	11.0	11.0	min
Hole position	W1	9.0		9.0		9.0		9.0	9.0	9.0	9.0	9.0	9.0	+0.75 -0.5
Hole down tape position	W2	1.5		1.5		1.5		1.5	1.5	1.5	1.5	1.5	1.5	max

Specification Fig.4 (mm)

Items	Symbol	Case size									Tolerance
		4×5 4×7	5×5	5×7	5×11	6.3×5	6.3×7 6.3×9	6.3×11 6.3×12	8×5/7 8×9/11 8×11.5/12	8×16 8×20	
Pin Code		P	P	P	P	P	P	P	P	P	
Lead wire diameter	Φd	0.45	0.45	0.45	0.5	0.45	0.5	0.5	0.45/0.5	0.5/0.6	±0.05
Pitch of body	P	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	±1.0
Feed hole pitch	P0	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	±0.2
Distance from hole center to lead	P1	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	±0.7
Distance from feed hole center to body center	P2	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	±1.0
Lead-to-lead distance	F	1.5	2.0	2.0	2.0	2.5	2.5	2.5	3.5	3.5	±0.5
Lead to lead distance	F1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	±0.5
Height of body from tape center	H	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	±0.75
Lead wire clinch height	H0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	±0.5
Base tape width	W	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	±0.5
Adhesive tape width	W0	6.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	8.0	min
Hole position	W1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	+0.75 -0.5
Hole down tape position	W2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	max

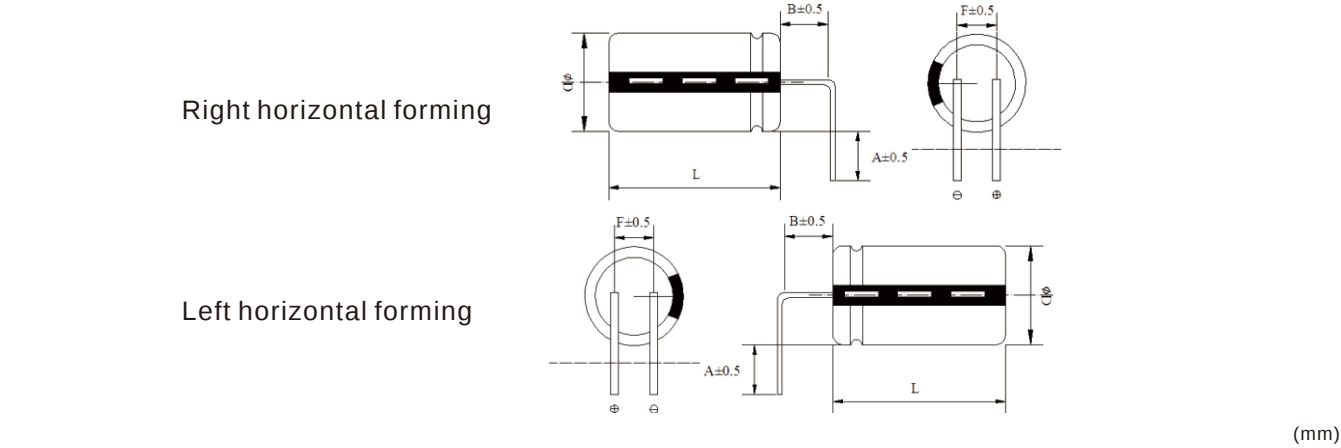
Lead Forming

Lead Forming & Cut



ΦD	F	L	ΦD	F	L
4	1.5	3.0~12.0	4	5.0	3.5, 4.5, 5.0, 7.0
5	2.0	3.0~12.0	5	5.0	3.5, 4.5, 5.0, 7.0
6.3	2.5	3.0~12.0	6.3	5.0	3.5, 4.5, 5.0, 7.0
8	3.5	3.0~12.0	8	5.0	3.5, 4.5, 5.0, 7.0
10	5.0	3.0~12.0	-	-	-
12.5	5.0	3.0~12.0	-	-	-
16	7.5	3.0~12.0	-	-	-
18	7.5	3.0~12.0	-	-	-

Code:R/L
RANGE: Φ10~Φ18



ΦD	F	A	B
10~12.5	5.0	2.5, 3.0, 3.5, 4.0, 4.5, 5.0	1.5, 2.5
16~18	7.5	2.5, 3.0, 3.5, 4.0, 4.5, 5.0	1.5, 2.5

A1 series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size (LxWxT mm)	ESR (mΩ,20°C,100kHz) (max.)	Rated ripple current (mA rms)100kHz	Leakage Current (μA max.)20°C	Part Number
6.3	150	7.3×4.3×1.9	15	3000	94.5	SA10JM151A19R15XXX
	180	7.3×4.3×1.9	15	3000	113.4	SA10JM181A19R15XXX
	220	7.3×4.3×1.9	10	3000	138.6	SA10JM221A19R10XXX
	220	7.3×4.3×1.9	15	3000	138.6	SA10JM221A19R1530X
	220	7.3×4.3×1.9	15	3000	138.6	SA10JL221A19R15XXX
	220	7.3×4.3×1.9	15	3000	138.6	SA10JL221A19R1530X
	220	7.3×4.3×1.9	15	3000	138.6	SA10JM221A19R15XXX
10	10	7.3×4.3×1.9	55	1000	10	SA11AM100A19R55XXX
	22	7.3×4.3×1.9	120	1600	22	SA11AM220A19RA2XXX
	27	7.3×4.3×1.9	80	1000	27	SA11AM270A19R80XXX
	33	7.3×4.3×1.9	25	1800	33	SA11AM330A19R25XXX
	39	7.3×4.3×1.9	25	1800	39	SA11AM390A19R25XXX
	47	7.3×4.3×1.9	40	1800	47	SA11AM470A19R40XXX
	68	7.3×4.3×1.9	40	1800	68	SA11AM680A19R40XXX
	100	7.3×4.3×1.9	15	2500	100	SA11AM101A19R15XXX
	100	7.3×4.3×1.9	40	2500	100	SA11AM101A19R40XXX
16	4.7	7.3×4.3×1.9	120	1000	7.52	SA11CM4R7A19RA2XXX
	6.8	7.3×4.3×1.9	70	1000	10.88	SA11CM6R8A19R70XXX
	10	7.3×4.3×1.9	60	1000	16	SA11CM100A19R60XXX
	15	7.3×4.3×1.9	40	1000	24	SA11CM150A19R40XXX
	22	7.3×4.3×1.9	30	1600	35.2	SA11CM220A19R30XXX
	22	7.3×4.3×1.9	60	1400	35.2	SA11CM220A19R60XXX
	33	7.3×4.3×1.9	80	1400	52.8	SA11CM330A19R80XXX
	47	7.3×4.3×1.9	55	1400	75.2	SA11CM470A19R55XXX
25	2.2	7.3×4.3×1.9	350	800	5.5	SA11EM2R2A19RC0XXX
	4.7	7.3×4.3×1.9	120	1000	11.75	SA11EM4R7A19RA2XXX
	6.8	7.3×4.3×1.9	80	1000	17	SA11EM6R8A19R80XXX
	10	7.3×4.3×1.9	35	1000	25	SA11EM100A19R35XXX
	10	7.3×4.3×1.9	60	1400	25	SA11EM100A19R60XXX
	10	7.3×4.3×1.9	80	1400	25	SA11EM100A19R80XXX
	15	7.3×4.3×1.9	60	1400	37.5	SA11EM150A19R60XXX
	22	7.3×4.3×1.9	60	1400	55	SA11EM220A19R60XXX
	33	7.3×4.3×1.9	40	1400	82.5	SA11EM330A19R40XXX
	33	7.3×4.3×1.9	60	1400	82.5	SA11EM330A19R60XXX
	33	7.3×4.3×1.9	80	1400	82.5	SA11EM330A19R8014X
	33	7.3×4.3×1.9	80	1400	82.5	SA11EM330A19R80XXX

Specifications may be subject to change without notice.

CONDUCTIVE POLYMER ALUMINUM SOLID CAPACITORS

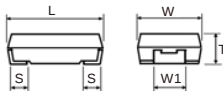
A2 series

- Endurance: 2,000 hours at 105°C
- Low ESR
- Recommended Applications: System Board,Display Card,Small Charger and intelligent TV
- RoHS Compliant and lead-free

SPECIFICATIONS

Items	Characteristics												
Category Temperature Range	-55~+105°C												
Rated Working Voltage Range	2~16V _{dc}												
Nominal Capacitance Range	6.8~470μF												
Capacitance Tolerance	±20%(M) -35%~+10%(L) (at 20°C,120Hz)												
DC Leakage Current	I≤0.1CV (at 20°C after 2 minutes) Where, I: Leakage current (μA),C:Nominal capacitance (μF),V: Rated voltage (V)												
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	2	2.5	4	6.3	7.5	10	12.5	16	20	25	(at 20°C,120Hz)	
	Dissipation Factor (max.)	0.06						0.10					
ESR(100kHz, 20°C)	Value in characteristics table												
Temperature Characteristics (Impedance Ratio at 100kHz)	Z(+105°C)/Z(+20°C)≤1.25 Z(-55°C)/Z(+20°C)≤1.25												
Endurance	After applying rated voltage for 2,000 hours at 105°C,the capacitors shall meet the following requirements .												
	Appearance	No significant damage											
	Capacitance Change	≤±20% of the initial value											
	Dissipation Factor	≤150% of the initial specified value											
	ESR	≤150% of the initial specified value											
	Leakage Current	≤The initial specified value											
Humidity Test	After subjecting to 90%~95% RH for 500 hours at 60°C(no voltage), the capacitors shall meet the requirement as Endurance.												
	Rated Voltage(V _{dc})	2~2.5			4			6.3~7.5			8~16		25
	Capacitance Change	+70,-20%			+60,-20%			+50,-20%			+40,-20%		
	D.F. (tanδ)	≤200% of the initial specified value											
	Leakage Current	≤The initial specified value											
Surge Test	After subjecting to 1,000 cycles each consisting of charge with the surge voltage specified at normal temperature for 30 seconds through a protective resistor and discharge for 5 minutes 30 seconds, the capacitors shall meet the following requirements.												
	Appearance	No significant damage											
	Capacitance Change	≤±20% of the initial value											
	Dissipation Factor	≤150% of the initial specified value											
	ESR	≤150% of the initial specified value											
	Leakage Current	≤The initial specified value											

DIMENSIONS[mm]



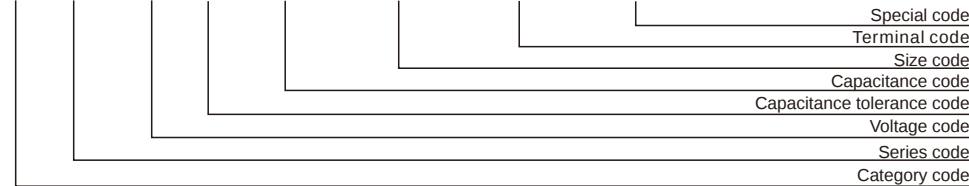
Case Size	L±0.3(mm)	W±0.2(mm)	T±0.1(mm)	W1±0.2(mm)	S±0.2(mm)
7.3x4.3x2.8	7.3	4.3	2.8	2.4	1.3

MARKING



PART NUMBERING SYSTEM

S	A	2	0	B	M	3	3	1	A	2	8	R	0	9	X	X	X
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PH series

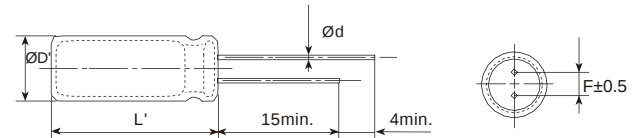
- Endurance: 2,000 hours at 105°C
- High Capacitance
- Recommended Applications: Charger. Ripple current can be applied.
- **RoHS Compliant and lead-free**



SPECIFICATIONS

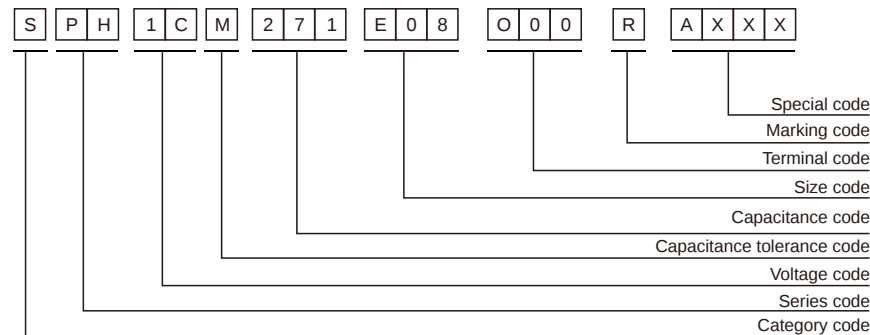
Items	Characteristics										
Category Temperature Range	-55~+105°C										
Rated Working Voltage Range	6.3~25 V _{dc}										
Nominal Capacitance Range	10~2200μF										
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)										
DC Leakage Current	I≤0.2CV or 500μA, whichever is greater. Where, I:Max.leakage current (μA),C:Nominal capacitance (μF),V: Rated voltage (V) (at 20°C after 2 minutes)										
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	6.3	6.8	7	7.5	10	12	16	20	25	(at 20°C,120Hz)
	Dissipation Factor (Max.)	0.08				0.12					
ESR(100kHz, 20°C)	Value in characteristics table										
Temperature Characteristics (Impedance Ratio at 100kHz)	Z(+105°C)/Z(+20°C)≤1.25 Z(-55°C)/Z(+20°C)≤1.25										
Endurance	After applying rated voltage for 2,000 hours at 105°C,the capacitors shall meet the following requirements.										
	Appearance	No significant damage									
	Capacitance Change	≤±20% of the initial value									
	Dissipation Factor	≤150% of the initial specified value									
	ESR	≤150% of the initial specified value									
	Leakage Current	≤The initial specified value									
Humidity Test	After subjecting to 90%~95% RH for 2,000 hours at 60°C without voltage applied, the capacitors shall meet the specified values for the Endurance characteristics listed above.										
Surge Test	After subjecting to 1,000 cycles each consisting of charge with the surge voltage specified at normal temperature for 30 seconds through a protective resistor and discharge for 5 minutes 30 seconds, the capacitors shall meet the following requirements.										
	Appearance	No significant damage									
	Capacitance Change	≤±20% of the initial value									
	Dissipation Factor	≤150% of the initial specified value									
	ESR	≤150% of the initial specified value									
	Leakage Current	≤The initial specified value									

■ DIMENSIONS[mm]



ØD	5	5.5	6.3	8	10
Ød	0.5	0.5	0.5	0.6	0.6
F	2.0	2.5	2.5	3.5	5.0
ØD'	ØD-0.1~+0.5		ØD-0.3~-+0.3		
L'	L+1.0max.			ØD-0.1~-+0.5	
				L-0.5~-+1	

■ PART NUMBERING SYSTEM



PH series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦD×L(mm)	ESR (mΩ,20°C,100kHz) (max.)	Rated ripple current (mA rms/105°C,100kHz)	Leakage Current (μA)(max.)	Part Number
6.3	220	5×7	16	4000	500	SPH0JM221D07000RAXXX
	270	5×7	16	4300	500	SPH0JM271D07000RAXXX
	330	5×8	16	4600	500	SPH0JM331D08000RAXXX
	330	6.3×5	20	3600	500	SPH0JM331E05000RAXXX
	330	6.3×8	12	4600	500	SPH0JM331E08000RAXXX
	390	5×9	16	4700	500	SPH0JM391D09000RAXXX
	470	5×10	16	4900	592	SPH0JM471D10000RAXXX
	470	5.5×9	16	4700	592	SPH0JM471B09000RAXXX
	470	6.3×8	12	5000	592	SPH0JM471E08000RAXXX
	500	5×9	16	4700	630	SPH0JM501D09000RAXXX
	560	5.5×9	16	4900	706	SPH0JM561B09000RAXXX
	560	6.3×8	16	5500	706	SPH0JM561E08000RAXXX
	680	5.5×9	16	5500	857	SPH0JM681B09000RAXXX
	680	6.3×9	16	5800	857	SPH0JM681E09000RAXXX
	680	8×9	16	5200	857	SPH0JM681F09000RAXXX
	820	6.3×9	16	5800	1033	SPH0JM821E09000RAXXX
	1000	6.3×10	8	5900	1260	SPH0JM102E10000RAXXX
	1000	8×9	9	5500	1260	SPH0JM102F09000RAXXX
	1000	8×11	8	5900	1260	SPH0JM102F11000RAXXX
	6.8	1200	8×11	8	6000	1512
1500		8×11	8	6200	1890	SPH0JM152F11000RAXXX
1500		10×12	8	6300	1890	SPH0JM152G12000RAXXX
1800		10×10	8	6300	2268	SPH0JM182G10000RAXXX
2200		8×14	8	6500	2772	SPH0JM222F14000RAXXX
2200		10×12	8	6600	2772	SPH0JM222G12000RAXXX
220		5×7	18	3500	500	SPH0CM221D07000RAXXX
270		5×7	18	3800	500	SPH0CM271D07000RAXXX
270		6.3×8	18	4100	500	SPH0CM271E08000RAXXX
330		5×8	18	4000	500	SPH0CM331D08000RAXXX
330		6.3×5	23	3300	500	SPH0CM331E05000RAXXX
390		5×9	18	4100	530	SPH0CM391D09000RAXXX
470		5×9	18	4300	639	SPH0CM471D09000RAXXX
470		6.3×7	18	3900	639	SPH0CM471E07000RAXXX
560		6.3×8	18	4700	762	SPH0CM561E08000RAXXX
680		6.3×9	18	5000	925	SPH0CM681E09000RAXXX
820		6.3×9	18	5100	1115	SPH0CM821E09000RAXXX
1000		6.3×11	11	5400	1360	SPH0CM102E11000RAXXX
1000		8×11	9	5400	1360	SPH0CM102F11000RAXXX
7		150	5×6	27	1600	500
	220	5×7	18	3400	500	SPH0QM221D07000RAXXX
	270	5×8	18	3600	500	SPH0QM271D08000RAXXX
	330	5×9	18	3800	500	SPH0QM331D09000RAXXX
	470	5.5×9	18	3800	658	SPH0QM471B09000RAXXX
	470	6.3×8	18	4000	658	SPH0QM471E08000RAXXX
	560	6.3×8	18	4200	784	SPH0QM561E08000RAXXX
	680	6.3×9	11	4400	952	SPH0QM681E09000RAXXX
	820	6.3×10	11	4700	1148	SPH0QM821E10000RAXXX
7.5	820	8×9	11	4800	1148	SPH0QM821F09000RAXXX
	220	5×7	18	3300	500	SPH0AM221D07000RAXXX
	270	5×8	18	3500	500	SPH0AM271D08000RAXXX
	330	5×9	18	3700	500	SPH0AM331D09000RAXXX
	390	5×9	18	3700	585	SPH0AM391D09000RAXXX
	470	5×9	18	3700	705	SPH0AM471D09000RAXXX
	470	5.5×9	18	3700	705	SPH0AM471B09000RAXXX
	470	6.3×7	23	3400	705	SPH0AM471E07000RAXXX
	500	5.5×9	18	3800	750	SPH0AM501B09000RAXXX
	560	6.3×8	18	4100	840	SPH0AM561E08000RAXXX
	680	6.3×9	11	4300	1020	SPH0AM681E09000RAXXX
	820	6.3×10	11	4600	1230	SPH0AM821E10000RAXXX
	820	8×9	11	4800	1230	SPH0AM821F09000RAXXX
	1000	6.3×11	11	4700	1500	SPH0AM102E11000RAXXX
	1000	8×11	11	4900	1500	SPH0AM102F11000RAXXX
	1200	8×11	11	5000	1800	SPH0AM122F11000RAXXX
	1500	8×11	11	5100	2250	SPH0AM152F11000RAXXX
	1800	8×14	11	5400	2700	SPH0AM182F14000RAXXX
	2200	10×12	11	6000	3300	SPH0AM222G12000RAXXX
	10	47	5×7	28	2500	500
56		5×7	28	2500	500	SPH1AM560D07000RAXXX
68		5×7	28	2600	500	SPH1AM680D07000RAXXX
82		5×7	28	2700	500	SPH1AM820D07000RAXXX
100		5×7	28	2700	500	SPH1AM101D07000RAXXX
100		6.3×5	24	2600	500	SPH1AM101E05000RAXXX
150		5×7	16	2800	500	SPH1AM151D07000RAXXX
180		6.3×7	16	3200	500	SPH1AM181E07000RAXXX
220		5×9	16	3200	500	SPH1AM221D09000RAXXX

PT series

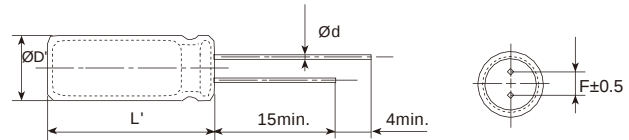
- Endurance: 2,000 hours at 125°C
- Long Life, High Temperature
- Recommended Applications: Lamps Power, LED Power, Service Equipment
- **RoHS Compliant and lead-free**



SPECIFICATIONS

Items	Characteristics										
Category Temperature Range	-55~+125°C										
Rated Working Voltage Range	6.3~25 V _{dc}										
Nominal Capacitance Range	22~5600μF										
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)										
DC Leakage Current	Is0.2CV or 500μA, whichever is greater. Where, I:Max.leakage current (μA),C:Nominal capacitance (μF),V: Rated voltage (V) (at 20°C after 2 minutes)										
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	6.3	6.8	7	7.5	10	12	16	20	25	(at 20°C,120Hz)
	Dissipation Factor (Max.)	0.08				0.12					
ESR(100kHz, 20°C)	Value in characteristics table										
Temperature Characteristics (Impedance Ratio at 100kHz)	Z(+105°C)/Z(+20°C)≤1.25 Z(-55°C)/Z(+20°C)≤1.25										
Endurance	After applying rated voltage for 2,000 hours at 125°C,the capacitors shall meet the following requirements.										
	Appearance	No significant damage									
	Capacitance Change	≤±20% of the initial value									
	Dissipation Factor	≤150% of the initial specified value									
	ESR	≤150% of the initial specified value									
	Leakage Current	≤The initial specified value									
Humidity Test	After subjecting to 90%~95% RH for 2,000 hours at 60°C without voltage applied, the capacitors shall meet the specified values for the Endurance characteristics listed above.										
Surge Test	After subjecting to 1,000 cycles each consisting of charge with the surge voltage specified at normal temperature for 30 seconds through a protective resistor and discharge for 5 minutes 30 seconds, the capacitors shall meet the following requirements.										
	Appearance	No significant damage									
	Capacitance Change	≤±20% of the initial value									
	Dissipation Factor	≤150% of the initial specified value									
	ESR	≤150% of the initial specified value									
	Leakage Current	≤The initial specified value									

■ DIMENSIONS[mm]



ØD	5	5.5	6.3	8	10
ød	0.5	0.5	0.5	0.6	0.6
F	2.0	2.5	2.5	3.5	5.0
ØD'	ØD-0.1~+0.5		ØD-0.1~+0.5		
L'	L+1.0max.			L-0.5~+1	

■ PART NUMBERING SYSTEM

The diagram shows a 10-digit resistor code with the following digits and their corresponding values:

Digit	Value
1	Special code
2	Marking code
3	Terminal code
4	Size code
5	Capacitance code
6	Capacitance tolerance code
7	Voltage code
8	Series code
9	Category code
10	

PT series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦD×L(mm)	ESR (mΩ,20℃,100kHz) (max.)	Rated ripple current (mA rms/125℃,100kHz)	Leakage Current (μA)(max.)	Part Number
6.3	220	5×7	30	1000	500	SPT0JM221D07O00RAXXX
	270	5×7	30	1100	500	SPT0JM271D07O00RAXXX
	330	5×8	30	1200	500	SPT0JM331D08O00RAXXX
	330	6.3×8	22	1200	500	SPT0JM331E08O00RAXXX
	390	5×9	30	1200	500	SPT0JM391D09O00RAXXX
	470	5×10	30	1200	592	SPT0JM471D10O00RAXXX
	470	5.5×9	30	1200	592	SPT0JM471B09O00RAXXX
	470	6.3×8	22	1300	592	SPT0JM471E08O00RAXXX
	560	6.3×8	30	1400	706	SPT0JM561E08O00RAXXX
	560	5.5×9	30	1200	706	SPT0JM561B09O00RAXXX
	680	5.5×9	30	1400	857	SPT0JM681B09O00RAXXX
	680	6.3×9	30	1500	857	SPT0JM681E09O00RAXXX
	680	8×9	30	1300	857	SPT0JM681F09O00RAXXX
	820	6.3×9	30	1500	1033	SPT0JM821E09O00RAXXX
	1000	6.3×10	15	1500	1260	SPT0JM102E10O00RAXXX
	1000	8×9	18	1400	1260	SPT0JM102F09O00RAXXX
	1000	8×11	15	1500	1260	SPT0JM102F11O00RAXXX
	1200	8×11	15	1500	1512	SPT0JM122F11O00RAXXX
	1500	8×11	15	1600	1890	SPT0JM152F11O00RAXXX
	1500	10×12	15	1600	1890	SPT0JM152G12O00RAXXX
	1800	10×10	15	1600	2268	SPT0JM182G10O00RAXXX
	2200	8×14	15	1700	2772	SPT0JM222F14O00RAXXX
	2200	10×12	15	1700	2772	SPT0JM222G12O00RAXXX
	3300	10×14	15	1700	4158	SPT0JM332G14O00RAXXX
4700	10×17	15	1800	5000	SPT0JM472G17O00RAXXX	
5600	10×18	15	1800	5000	SPT0JM562G18O00RAXXX	
6.8	220	5×7	28	900	500	SPT0CM221D07O00RAXXX
	270	5×7	28	1000	500	SPT0CM271D07O00RAXXX
	330	5×8	28	1100	500	SPT0CM331D08O00RAXXX
	330	6.3×5	35	900	500	SPT0CM331E05O00RAXXX
	470	5×9	28	1200	639	SPT0CM471D09O00RAXXX
	470	6.3×7	28	1100	639	SPT0CM471E07O00RAXXX
	560	6.3×8	28	1300	762	SPT0CM561E08O00RAXXX
	680	6.3×9	28	1400	925	SPT0CM681E09O00RAXXX
	820	6.3×9	28	1400	1115	SPT0CM821E09O00RAXXX
	1000	6.3×11	17	1500	1360	SPT0CM102E11O00RAXXX
1000	8×11	14	1500	1360	SPT0CM102F11O00RAXXX	
7	220	5×7	28	900	500	SPT0QM221D07O00RAXXX
	270	5×8	28	1000	500	SPT0QM271D08O00RAXXX
	330	5×9	28	1000	500	SPT0QM331D09O00RAXXX
	470	5.5×9	28	1000	658	SPT0QM471B09O00RAXXX
	470	6.3×7	28	1100	658	SPT0QM471E07O00RAXXX
	560	6.3×8	28	1200	784	SPT0QM561E08O00RAXXX
	680	6.3×9	17	1200	952	SPT0QM681E09O00RAXXX
	820	6.3×10	17	1300	1148	SPT0QM821E10O00RAXXX
	820	8×9	17	1300	1148	SPT0QM821F09O00RAXXX
7.5	220	5×7	28	900	500	SPT0AM221D07O00RAXXX
	270	5×7	28	900	500	SPT0AM271D07O00RAXXX
	330	5×9	28	1000	500	SPT0AM331D09O00RAXXX
	390	5×9	28	1000	585	SPT0AM391D09O00RAXXX
	470	5.5×9	28	1000	705	SPT0AM471B09O00RAXXX
	470	6.3×7	35	900	705	SPT0AM471E07O00RAXXX
	500	5.5×9	28	1000	750	SPT0AM501B09O00RAXXX
	560	6.3×8	28	1100	840	SPT0AM561E08O00RAXXX
	680	6.3×9	17	1200	1020	SPT0AM681E09O00RAXXX
	820	6.3×10	17	1300	1230	SPT0AM821E10O00RAXXX
820	8×9	17	1300	1230	SPT0AM821F09O00RAXXX	
1200	8×11	17	1440	1800	SPT0AM122F11O00RAXXX	
10	47	5×7	52	600	500	SPT1AM470D07O00RAXXX
	56	5×7	52	600	500	SPT1

VF series

- Endurance: 3,000~5,000 hours at 105°C
- Long life
- Recommended Applications: System Board, Display Card, Small Changer and intelligent TV
- **RoHS Compliant and lead-free**

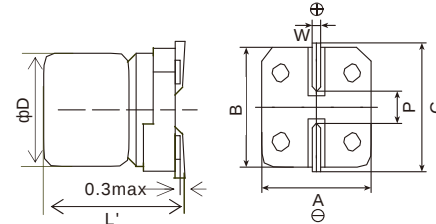


SPECIFICATIONS

Items	Characteristics									
Category Temperature Range	-55~+105°C									
Rated Working Voltage Range	2.5~63 V _{dc}									
Nominal Capacitance Range	22~2200μF									
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)									
DC Leakage Current	Is0.2CV or 500μA, whichever is greater. Where, I:Max.leakage current(μA), C:Nominal capacitance(μF), V:Rated voltage(V) (at 20°C after 2 minutes)									
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	2.5	6.3	10	16	25	35	50	63	(at 20°C,120Hz)
	Dissipation Factor (Max.)	0.08			0.12					
ESR(100kHz,20°C)	Value in characteristics table									
Temperature Characteristics (Impedance Ratio at 100kHz)	Z(+105°C)/Z(+20°C)≤1.25 Z(-55°C)/Z(+20°C)≤1.25									
Endurance	After applying rated voltage for 3,000~5,000 hours at 105°C,the capacitors shall meet the following requirements.									
	Appearance	No significant damage								
	Capacitance Change	≤±20% of the initial value								
	Dissipation Factor	≤150% of the initial specified value								
	ESR	≤150% of the initial specified value								
	Leakage Current	≤The initial specified value								
Humidity Test	After subjecting 90~95% RH for 2,000 hours at 60°C.no voltage, The capacitors shall meet the requirement as Endurance.									
Surge Test	After subjecting to 1,000 cycles each consisting of charge with the surge voltage specified at normal temperature for 30 seconds through a protective resistor and discharge for 5 minutes 30 seconds, the capacitors shall meet the following requirements.									
	Appearance	No significant damage								
	Capacitance Change	≤±20% of the initial value								
	Dissipation Factor	≤150% of the initial specified value								
	ESR	≤150% of the initial specified value								
	Leakage Current	≤The initial specified value								

*Note: If any doubt arises, measure the leakage current after the following voltage treatment.
Voltage treatment: DC rated voltage is applied to the capacitors for 120 minutes at 105°C.

■ DIMENSIONS[mm]



Size Code	6.3	8	10
P±0.2	1.9	3.1	4.5
W±0.2	6.6	8.3	10.3
H±0.2	6.6	8.3	10.3
C±0.2	7.2	9.0	11.0
W	0.5-0.8	0.7-1.1	0.7-1.1
ØD'	ØD-0.1-+0.5		
L'	L±0.5		

■ PART NUMBERING SYSTEM

The diagram shows a 10-digit resistor code: S V F 1 C M 2 7 1 E 0 9 E 0 0 R A X X X. Each digit is in a box. Lines connect the boxes to labels on the right:

- S**: Series code
- V**: Voltage code
- F**: Capacitance tolerance code
- 1**: Capacitance code
- C**: Marking code
- M**: Terminal code
- 2**: Size code
- 7**: Special code
- 1**: Special code
- E**: Special code
- 0**: Special code
- 9**: Special code
- E**: Special code
- 0**: Special code
- 0**: Special code
- R**: Special code
- A**: Special code
- X**: Special code
- X**: Special code
- X**: Special code

VF series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	ESR (mΩ,20°C,100kHz) (max.)	Rated ripple current (mA rms/105°C,100kHz)	Leakage Current (μA)(max.)	Part Number
2.5	330	6.3×6	22	2400	500	SVF0EM331E06E00RAXXX
	390	6.3×6	22	2500	500	SVF0EM391E06E00RAXXX
	470	6.3×6	22	2600	500	SVF0EM471E06E00RAXXX
	560	6.3×6	22	2700	500	SVF0EM561E06E00RAXXX
	680	6.3×9	16	3800	500	SVF0EM681E09E00RAXXX
6.3	220	6.3×6	22	2500	500	SVF0JM221E06E00RAXXX
	270	6.3×6	22	2700	500	SVF0JM271E06E00RAXXX
	330	6.3×6	22	2700	500	SVF0JM331E06E00RAXXX
	470	6.3×9	16	3100	592	SVF0JM471E09E00RAXXX
	560	6.3×9	16	3300	706	SVF0JM561E09E00RAXXX
	1000	8×11.5	16	3800	1260	SVF0JM102FBRE00RAXXX
	1500	8×11.5	16	3900	1890	SVF0JM152FBRE00RAXXX
	2200	10×12.5	16	5000	2772	SVF0JM222GCRE00RAXXX
	120	6.3×6	33	2400	500	SVF1AM121E06E00RAXXX
	220	6.3×6	33	2400	500	SVF1AM221E06E00RAXXX
	220	6.3×9	22	2700	500	SVF1AM221E09E00RAXXX
	330	6.3×9	22	2700	660	SVF1AM331E09E00RAXXX
	560	8×11.5	22	3200	1120	SVF1AM561FBRE00RAXXX
	560	10×12.5	22	4500	1120	SVF1AM561GCRE00RAXXX
10	1000	8×11.5	16	3700	2000	SVF1AM102FBRE00RAXXX
	1000	10×12.5	16	3900	2000	SVF1AM102GCRE00RAXXX
	1500	10×12.5	16	3900	3000	SVF1AM152GCRE00RAXXX
	47	6.3×6	44	1500	500	SVF1CM470E06E00RAXXX
	68	6.3×6	44	1800	500	SVF1CM680E06E00RAXXX
	100	6.3×6	33	2100	500	SVF1CM101E06E00RAXXX
	150	6.3×6	33	2100	500	SVF1CM151E06E00RAXXX
16	150	6.3×9	27	2300	500	SVF1CM151E09E00RAXXX
	180	6.3×6	66	2200	576	SVF1CM181E06E00RAXXX
	180	6.3×9	27	2400	576	SVF1CM181E09E00RAXXX
	220	6.3×9	27	2200	704	SVF1CM221E09E00RAXXX
	270	6.3×9	27	2300	864	SVF1CM271E09E00RAXXX
	270	8×9.5	27	2500	864	SVF1CM271F9RE00RAXXX
	560	8×11.5	22	3100	1792	SVF1CM561FBRE00RAXXX
	680	10×12.5	22	3600	2176	SVF1CM681GCRE00RAXXX
	1000	10×12.5	22	3600	3200	SVF1CM102GCRE00RAXXX
	27	6.3×6	55	900	500	SVF1EM270E06E00RAXXX
25	47	6.3×6	55	1600	500	SVF1EM470E06E00RAXXX
	47	6.3×9	38	1800	500	SVF1EM470E09E00RAXXX
	56	6.3×6	55	1600	500	SVF1EM560E06E00RAXXX
	100	6.3×6	55	1800	500	SVF1EM101E06E00RAXXX
	100	6.3×9	33	2100	500	SVF1EM101E09E00RAXXX
	150	6.3×9	33	2200	750	SVF1EM151E09E00RAXXX
	220	8×11.5	33	2300	1100	SVF1EM221FBRE00RAXXX
	330	8×11.5	33	2400	1650	SVF1EM331FBRE00RAXXX
	330	10×12.5	24	2500	1650	SVF1EM331GCRE00RAXXX
35	470	10×12.5	24	2700	2350	SVF1EM471GCRE00RAXXX
	22	6.3×6	66	900	500	SVF1VM220E06E00RAXXX
	27	6.3×6	66	900	500	SVF1VM270E06E00RAXXX
	33	6.3×6	66	900	500	SVF1VM330E06E00RAXXX
	47	6.3×6	49	900	500	SVF1VM470E06E00RAXXX
	47	6.3×9	55	1300	500	SVF1VM470E09E00RAXXX
	68	6.3×9	44	1600	500	SVF1VM680E09E00RAXXX
	100	6.3×9	44	1800	700	SVF1VM101E09E00RAXXX
	100	8×11.5	33	2700	700	SVF1VM101FBRE00RAXXX
	150	8×11.5	33	2700	1050	SVF1VM151FBRE00RAXXX
50	220	8×11.5	33	2100	1540	SVF1VM221FBRE00RAXXX
	270	8×11.5	33	2200	1890	SVF1VM271FBRE00RAXXX
	270	10×12.5	33	2400	1890	SVF1VM271GCRE00RAXXX
	330	10×12.5	33	2400	2310	SVF1VM331GCRE00RAXXX
	470	10×12.5	33	2700	3290	SVF1VM471GCRE00RAXXX
	22	6.3×6	88	720	500	SVF1HM220E06E00RAXXX
	33	6.3×6	88	760	500	SVF1HM330E06E00RAXXX
63	47	6.3×9	66	1200	500	SVF1HM470E09E00RAXXX
	82	10×12.5	33	1800	820	SVF1HM820GCRE00RAXXX
	100	8×11.5	33	1800	1000	SVF1HM101FBRE00RAXXX
	120	8×11.5	33	1800	1200	SVF1HM121FBRE00RAXXX
	220	10×12.5	33	2000	2200	SVF1HM221GCRE00RAXXX
	22	6.3×6	88	400	500	SVF1JM220E06E00RAXXX
	33	6.3×9	66	450	500	SVF1JM330E09E00RAXXX
	47	8×9.5	66	900	592	SVF1JM470F9RE00RAXXX
	56	8×11.5	44	1200	706	SVF1JM560FBRE00RAXXX
	100	10×12.5	44	1400	1260	SVF1JM101GCRE00RAXXX

Specifications subject to change without notice.

MA series

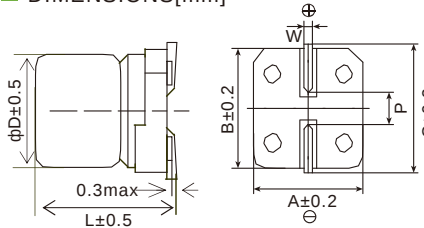
- Endurance: 10,000 hours at 105°C
- Designed for surface mounting on high density PC board
- Compliant to AEC-Q200
- RoHS Compliant



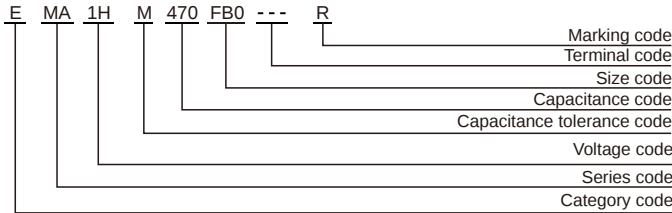
SPECIFICATIONS

Items	Characteristics										
Category Temperature Range	-55~+105°C(16~100 V dc)					-40~+105°C(160~450 V dc)					
Rated Voltage Range	16~450 V _{dc}										
Capacitance Tolerance	±20%(M)										(at 20°C,120Hz)
Leakage Current	16~100 V _{dc}						160~450 V _{dc}				(at 20°C)
	I≤0.03CV or 4μA, whichever is greater. (2 minutes)						I≤0.04CV+100μA (1 minute)				
	Where, I:Max.leakage current (μA),C:Nominal capacitance (μF),V: Rated voltage (V)										
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	16	25	35	50	63	80	100	160~250	400~450	(at 20°C,120Hz)
	Dissipation Factor(Max.)	0.26	0.16	0.14	0.14	0.20	0.20	0.20	0.20	0.24	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(V _{dc})	16	25	35	50	63	80	100	160~250	400~450	(at 120Hz)
	Z(-25°C)/Z(+20°C)	2	2	2	2	2	2	2	6	6	
	Z(-40°C)/Z(+20°C)	3	3	3	3	3	3	3	10	18	
	Z(-55°C)/Z(+20°C)	4	3	3	3	3	3	3	-	-	
Endurance	The specifications listed below shall be satisfied when the capacitors are restored to 20°C after rated voltage is applied for 10,000 hours at 105°C.										
	Rated Voltage(V _{dc})	16~100						160~450			
	Capacitance Change	≤±30% of the initial value						≤±20% of the initial value			
	Dissipation Factor (tanδ)	≤300% of the initial specified value						≤200% of the initial specified value			
	Leakage Current	≤The initial specified value						≤The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after leaving them under no load at 105°C for 1,000 hours.										
	Rated Voltage(V _{dc})	16~100						160~450			
	Capacitance Change	≤±30% of the initial value						≤±20% of the initial value			
	Dissipation Factor (tanδ)	≤300% of the initial specified value						≤200% of the initial specified value			
	Leakage Current	≤300% of the initial specified value						≤200% of the initial specified value			

DIMENSIONS[mm]



PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz)	120	1k	10k	100k
Rated voltage(V _{dc})				
16~450	0.50	0.80	0.90	1.00

ALUMINUM ELECTROLYTIC CAPACITORS

MA series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size code	Rated ripple current (mA rms/105°C, 100kHz)	Part Number
16	47	E83	125	EMA1CM470E83---R
	100	E83	245	EMA1CM101E83---R
	220	FB0	260	EMA1CM221FB0---R
	330	GB0	450	EMA1CM331GB0---R
	470	GD0	480	EMA1CM471GD0---R
	680	WE0	820	EMA1CM681WE0---R
	1000	WG5	860	EMA1CM102WG5---R
25	47	E83	125	EMA1EM470E83---R
	100	FB0	245	EMA1EM101FB0---R
	220	GB0	440	EMA1EM221GB0---R
	330	GB0	460	EMA1EM331GB0---R
	470	WE0	820	EMA1EM471WE0---R
35	680	WG5	860	EMA1EM681WG5---R
	47	E83	140	EMA1VM470E83---R
	100	FB0	245	EMA1VM101FB0---R
	220	GB0	440	EMA1VM221GB0---R
	330	WE0	820	EMA1VM331WE0---R
50	470	WG5	860	EMA1VM471WG5---R
	10	E83	100	EMA1HM100E83---R
	22	E83	105	EMA1HM220E83---R
	33	E83	110	EMA1HM330E83---R
	47	FB0	260	EMA1HM470FB0---R
63	47	GB0	400	EMA1HM470GB0---R
	100	GB0	420	EMA1HM101GB0---R
	220	WE0	800	EMA1HM221WE0---R
	330	WG5	845	EMA1HM331WG5---R
80	22	E83	95	EMA1JM220E83---R
	33	FB0	180	EMA1JM330FB0---R
	47	FB0	210	EMA1JM470FB0---R
	100	GD0	420	EMA1JM101GD0---R
100	220	WG5	820	EMA1JM221WG5---R
	10	FB0	165	EMA1BM100FB0---R
	22	FB0	180	EMA1BM220FB0---R
	22	GB0	305	EMA1BM220GB0---R
	33	FB0	190	EMA1BM330FB0---R
160	47	GB0	350	EMA1BM470GB0---R
	100	WE0	760	EMA1BM101WE0---R
	10	E83	150	EMA1KM100E83---R
	22	FB0	165	EMA1KM220FB0---R
	33	GB0	280	EMA1KM330GB0---R
200	47	GB0	320	EMA1KM470GB0---R
	68	GD0	350	EMA1KM680GD0---R
	82	WE0	530	EMA1KM820WE0---R
	100	WE0	555	EMA1KM101WE0---R
	10	GB0	190	EMA2CM100GB0---R
250	15	FD0	220	EMA2CM150FD0---R
	22	GB0	315	EMA2CM220GB0---R
	33	GE0	420	EMA2CM330GE0---R
	47	GH0	530	EMA2CM470GH0---R
	68	WM5	640	EMA2CM680WM5---R
400	100	WM5	840	EMA2CM101WM5---R
	4.7	FB0	110	EMA2DM4R7FB0---R
	6.8	FB0	150	EMA2DM6R8FB0---R
	10	FD0	180	EMA2DM100FD0---R
	10	GB0	198	EMA2DM100GB0---R
450	15	FE0	230	EMA2DM150FE0---R
	22	GE0	350	EMA2DM220GE0---R
	33	GH0	440	EMA2DM330GH0---R
	68	WM5	670	EMA2DM680WM5---R
	2.2	EB0	52	EMA2EM2R2EB0---R
250	4.7	FB0	120	EMA2EM4R7FB0---R
	10	FE0	180	EMA2EM100FE0---R
	10	GB0	200	EMA2EM100GB0---R
	22	GH0	360	EMA2EM220GH0---R
	33	WM5	435	EMA2EM330WM5---R
450	47	WM5	600	EMA2EM470WM5---R

Specifications subject to change without notice.

Surface Mount Type

NB series

STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦD×L(mm)	Rated ripple current (mA _{rms} /130°C,100kHz)	Part Number
120	150	12.5×25	515	ENB2BM151W25---T
	220	12.5×30	630	ENB2BM221W30---T
	220	16×20	630	ENB2BM221L20---T
	270	16×25	720	ENB2BM271L25---T
	270	18×20	720	ENB2BM271M20---T
	330	16×30	775	ENB2BM331L30---T
	330	18×25	775	ENB2BM331M25---T
	470	16×40	865	ENB2BM471L40---T
	470	18×30	865	ENB2BM471M30---T

Specifications subject to change without notice.

ALUMINUM ELECTROLYTIC CAPACITORS

RD series

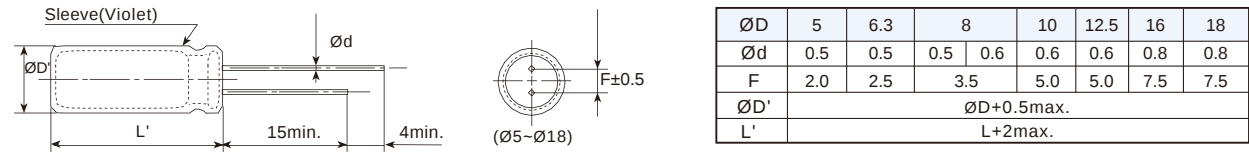
- Endurance: 2,000~5,000 hours at 105°C
- High frequency and low impedance; moisture content: under 40%
- RoHS Compliant



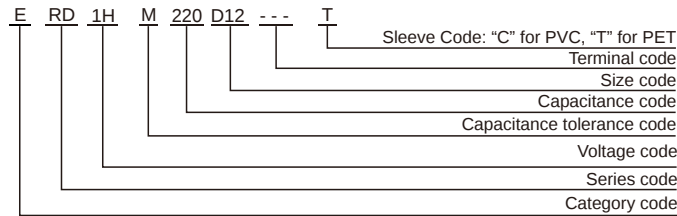
SPECIFICATIONS

Items	Characteristics										
Category Temperature Range	-40~+105°C										
Rated Working Voltage Range	6.3~100 V _{dc}										
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)										
Leakage Current	I≤0.01CV or 3μA, whichever is greater. Where, I:Max.leakage current (μA), C:Nominal capacitance (μF), V: Rated voltage (V) (at 20°C after 2 minutes)										
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	6.3	10	16	25	35	50	63	100		
	Dissipation Factor (max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08		
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C,120Hz)										
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(V _{dc})	6.3	10	16	25	35	50	63	100		
	Z (-25°C)/Z(+20°C)	4	3	2	2	2					
	Z (-40°C)/Z(+20°C)	8	6	4	3	3					(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus the rated ripple current is applied for a specified period of time at 105 °C.										
	Capacitance Change	≤±25% of the initial value							Case size	Load life (hours)	
	Dissipation Factor	≤200% of the initial specified value							ØD≤6.3	2,000	
	Leakage Current	≤The initial specified value							ØD=8	3,000	
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.										
	Capacitance Change	≤±25% of the initial value									
	Dissipation Factor	≤200% of the initial specified value									
	Leakage Current	≤200% of the initial specified value									

DIMENSIONS[mm]



PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Freq.(Hz)		120	1k	10k	100k
Cap.(μF)	Cap.<220	0.40	0.75	0.90	1.00
	220≤Cap.<680	0.50	0.85	0.94	1.00
	680≤Cap.<2200	0.60	0.87	0.95	1.00
	2200≤Cap.<4700	0.75	0.90	0.95	1.00
	Cap.≥4700	0.85	0.95	0.98	1.00

LK series

■ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
10	12000	22×25	0.55	2.41	ELK1AM123O25KT
	15000	22×30	0.55	2.88	ELK1AM153O30KT
	15000	25×25	0.55	2.88	ELK1AM153P25KT
	18000	22×35	0.55	3.22	ELK1AM183O35KT
	18000	25×30	0.55	3.08	ELK1AM183P30KT
	22000	22×40	0.55	3.79	ELK1AM223O40KT
	22000	25×30	0.55	3.66	ELK1AM223P30KT
	22000	30×25	0.55	3.53	ELK1AM223Q25KT
	27000	22×45	0.55	4.04	ELK1AM273O45KT
	27000	25×35	0.55	4.04	ELK1AM273P35KT
	27000	30×30	0.55	3.99	ELK1AM273Q30KT
	33000	22×50	0.55	4.58	ELK1AM333O50KT
	33000	25×40	0.55	4.56	ELK1AM333P40KT
	33000	30×30	0.55	4.58	ELK1AM333Q30KT
	39000	25×45	0.55	5.29	ELK1AM393P45KT
	39000	30×35	0.55	5.21	ELK1AM393Q35KT
	39000	35×30	0.55	5.05	ELK1AM393R30KT
	47000	25×50	0.55	5.78	ELK1AM473P50KT
	47000	30×40	0.55	5.78	ELK1AM473Q40KT
	47000	35×35	0.55	5.55	ELK1AM473R35KT
	56000	30×45	0.55	6.59	ELK1AM563Q45KT
	56000	35×35	0.55	6.40	ELK1AM563R35KT
	68000	30×50	0.55	7.50	ELK1AM683Q50KT
	68000	35×40	0.55	7.48	ELK1AM683R40KT
	82000	35×50	0.55	8.50	ELK1AM823R50KT
16	8200	22×25	0.50	2.56	ELK1CM822O25KT
	10000	22×30	0.50	2.81	ELK1CM103O30KT
	12000	22×30	0.50	3.31	ELK1CM123O30KT
	12000	25×25	0.50	2.96	ELK1CM123P25KT
	15000	22×35	0.50	3.69	ELK1CM153O35KT
	15000	25×30	0.50	3.64	ELK1CM153P30KT
	15000	30×25	0.50	3.73	ELK1CM153Q25KT
	18000	22×40	0.50	3.98	ELK1CM183O40KT
	18000	25×35	0.50	3.98	ELK1CM183P35KT
	18000	30×30	0.50	3.88	ELK1CM183Q30KT
	22000	22×50	0.50	4.52	ELK1CM223O50KT
	22000	25×40	0.50	4.44	ELK1CM223P40KT
	22000	30×30	0.50	4.38	ELK1CM223Q30KT
	27000	25×45	0.50	4.98	ELK1CM273P45KT
	27000	30×35	0.50	4.82	ELK1CM273Q35KT
	27000	35×30	0.50	4.82	ELK1CM273R30KT
	33000	25×50	0.50	5.49	ELK1CM333P50KT
	33000	30×40	0.50	5.38	ELK1CM333Q40KT
	33000	35×35	0.50	5.33	ELK1CM333R35KT
	39000	30×45	0.50	6.11	ELK1CM393Q45KT
	39000	35×35	0.50	6.01	ELK1CM393R35KT
	47000	30×50	0.50	6.80	ELK1CM473Q50KT
	47000	35×40	0.50	6.80	ELK1CM473R40KT
	56000	35×45	0.50	7.62	ELK1CM563R45KT
	25	5600	22×25	0.45	2.31
6800		22×30	0.45	2.56	ELK1EM682O30KT
8200		22×35	0.45	2.81	ELK1EM822O35KT
8200		25×25	0.45	2.78	ELK1EM822P25KT
10000		22×35	0.45	3.18	ELK1EM103O35KT
10000		25×30	0.45	3.16	ELK1EM103P30KT
12000		22×45	0.45	3.53	ELK1EM123O45KT
12000		25×35	0.45	3.48	ELK1EM123P35KT
12000		30×25	0.45	3.53	ELK1EM123Q25KT
15000		22×50	0.45	4.08	ELK1EM153O50KT
15000		25×40	0.45	4.00	ELK1EM153P40KT
15000		30×30	0.45	4.00	ELK1EM153Q30KT

LK series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
200	820	22x50	0.15	2.68	ELK2DM821O50KT
	820	25x40	0.15	2.66	ELK2DM821P40KT
	820	30x30	0.15	2.62	ELK2DM821Q30KT
	1000	22x50	0.15	3.00	ELK2DM102O50KT
	1000	25x45	0.15	3.12	ELK2DM102P45KT
	1000	30x35	0.15	3.00	ELK2DM102Q35KT
	1000	35x30	0.15	2.96	ELK2DM102R30KT
	1200	25x50	0.15	3.44	ELK2DM122P50KT
	1200	30x40	0.15	3.44	ELK2DM122Q40KT
	1200	35x35	0.15	3.40	ELK2DM122R35KT
	1500	30x50	0.15	3.93	ELK2DM152Q50KT
	1500	35x40	0.15	3.87	ELK2DM152R40KT
	1800	35x45	0.15	4.37	ELK2DM182R45KT
	2200	35x50	0.15	5.00	ELK2DM222R50KT
220	220	22x25	0.15	1.18	ELK2NM221O25KT
	270	22x25	0.15	1.31	ELK2NM271O25KT
	330	22x30	0.15	1.58	ELK2NM331O30KT
	330	25x25	0.15	1.49	ELK2NM331P25KT
	390	22x35	0.15	1.69	ELK2NM391O35KT
	390	25x30	0.15	1.71	ELK2NM391P30KT
	470	22x40	0.15	1.99	ELK2NM471O40KT
	470	25x30	0.15	1.95	ELK2NM471P30KT
	470	25x35	0.15	2.00	ELK2NM471P35KT
	470	30x25	0.15	1.89	ELK2NM471Q25KT
	560	22x45	0.15	2.28	ELK2NM561O45KT
	560	25x35	0.15	2.22	ELK2NM561P35KT
	560	30x30	0.15	2.19	ELK2NM561Q30KT
	680	22x50	0.15	2.46	ELK2NM681O50KT
	680	25x40	0.15	2.40	ELK2NM681P40KT
	680	30x30	0.15	2.39	ELK2NM681Q30KT
	820	25x45	0.15	2.81	ELK2NM821P45KT
	820	30x35	0.15	2.70	ELK2NM821Q35KT
	820	35x30	0.15	2.62	ELK2NM821R30KT
	1000	25x50	0.15	3.13	ELK2NM102P50KT
	1000	30x40	0.15	3.08	ELK2NM102Q40KT
	1000	35x35	0.15	3.05	ELK2NM102R35KT
250	1200	30x45	0.15	3.60	ELK2NM122Q45KT
	1200	35x40	0.15	3.51	ELK2NM122R40KT
	1500	35x45	0.15	3.92	ELK2NM152R45KT
	220	22x25	0.15	1.18	ELK2EM221O25KT
	270	22x30	0.15	1.43	ELK2EM271O30KT
	330	22x30	0.15	1.58	ELK2EM331O30KT
	330	25x25	0.15	1.53	ELK2EM331P25KT
	390	22x40	0.15	1.79	ELK2EM391O40KT
	390	25x30	0.15	1.79	ELK2EM391P30KT
	470	22x40	0.15	2.05	ELK2EM471O40KT
	470	25x35	0.15	2.05	ELK2EM471P35KT
	470	30x25	0.15	1.94	ELK2EM471Q25KT
	560	22x45	0.15	2.36	ELK2EM561O45KT
	560	25x35	0.15	2.24	ELK2EM561P35KT
	560	30x30	0.15	2.24	ELK2EM561Q30KT
	680	25x40	0.15	2.54	ELK2EM681P40KT
	680	30x35	0.15	2.58	ELK2EM681Q35KT
	820	25x50	0.15	2.87	ELK2EM821P50KT
	820	30x35	0.15	2.84	ELK2EM821Q35KT
	820	35x30	0.15	2.82	ELK2EM821R30KT
	1000	30x45	0.15	3.39	ELK2EM102Q45KT
	1000	35x35	0.15	3.31	ELK2EM102R35KT
	1200	30x50	0.15	3.80	ELK2EM122Q50KT
	1200	35x40	0.15	3.66	ELK2EM122R40KT
	1500	35x45	0.15	4.12	ELK2EM152R45KT
	1800	35x50	0.15	4.31	ELK2EM182R50KT

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
315	180	22x30	0.15	1.23	ELK2FM181O30KT
	180	25x25	0.15	1.31	ELK2FM181P25KT
	220	22x35	0.15	1.34	ELK2FM221O35KT
	220	25x30	0.15	1.40	ELK2FM221P30KT
	270	22x40	0.15	1.60	ELK2FM271O40KT
	270	25x30	0.15	1.62	ELK2FM271P30KT
	330	22x45	0.15	1.82	ELK2FM331O45KT
	330	25x35	0.15	1.85	ELK2FM331P35KT
	330	30x30	0.15	1.89	ELK2FM331Q30KT
	390	22x50	0.15	1.97	ELK2FM391O50KT
	390	25x40	0.15	2.01	ELK2FM391P40KT
	390	30x30	0.15	2.05	ELK2FM391Q30KT
	470	25x45	0.15	2.20	ELK2FM471P45KT
	470	30x35	0.15	2.27	ELK2FM471Q35KT
350	470	35x30	0.15	2.25	ELK2FM471R30KT
	560	30x40	0.15	2.50	ELK2FM561Q40KT
	560	35x35	0.15	2.56	ELK2FM561R35KT
	680	30x45	0.15	2.67	ELK2FM681Q45KT
	680	35x40	0.15	2.90	ELK2FM681R40KT
	820	30x50	0.15	3.12	ELK2FM821Q50KT
	820	35x45	0.15	3.29	ELK2FM821R45KT
	1000	35x50	0.15	3.40	ELK2FM102R50KT
	120	22x25	0.15	0.99	ELK2VM121O25KT
	150	22x30	0.15	1.44	ELK2VM151O30KT
	150	25x25	0.15	1.16	ELK2VM151P25KT
	180	22x35	0.15	1.28	ELK2VM181O35KT
	180	25x30	0.15	1.30	ELK2VM181P30KT
	220	22x40	0.15	1.40	ELK2VM221O40KT
385	220	25x35	0.15	1.46	ELK2VM221P35KT
	220	30x25	0.15	1.47	ELK2VM221Q25KT
	270	22x45	0.15	1.62	ELK2VM271O45KT
	270	25x35	0.15	1.65	ELK2VM271P35KT
	270	30x30	0.15	1.71	ELK2VM271Q30KT
	330	22x50	0.15	1.78	ELK2VM331O50KT
	330	25x40	0.15	1.88	ELK2VM331P40KT
	330	30x35	0.15	1.93	ELK2VM331Q35KT
	390	25x45	0.15	2.04	ELK2VM391P45KT
	390	30x35	0.15	2.12	ELK2VM391Q35KT
	390	35x30	0.15	2.19	ELK2VM391R30KT
	470	30x40	0.15	2.41	ELK2VM471Q40KT
	470	35x35	0.15	2.43	ELK2VM471R35KT
	560	30x45	0.15	2.60	ELK2VM561Q45KT
385	560	35x35	0.15	2.62	ELK2VM561R35KT
	680	35x40	0.15	3.00	ELK2VM681R40KT
	820	35x50	0.15	3.30	ELK2VM821R50KT
	82	22x25	0.15	0.70	ELK3BM820O25KT
	100	22x30	0.15	0.82	ELK3BM101O30KT
	120	22x30	0.15	0.91	ELK3BM121O30KT
	120	25x25	0.15	0.95	ELK3BM121P25KT
	150	22x35	0.15	1.04	ELK3BM151O35KT
	150	25x30	0.15	1.08	ELK3BM151P30KT
	180	22x40	0.15	1.18	ELK3BM181O40KT
	180	25x35	0.15	1.20	ELK3BM181P35KT
	180	30x25	0.15	1.28	ELK3BM181Q25KT
	220	22x45	0.15	1.33	ELK3BM221O45KT
	220	25x35	0.15	1.44	ELK3BM221P35KT
	220	30x30	0.15	1.40	ELK3BM221Q30KT
	270	25x40	0.15	1.56	ELK3BM271P40KT
	270	30x35	0.15	1.62	ELK3BM271Q35KT

LK series

■ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
385	330	25×50	0.15	1.80	ELK3BM331P50KT
	330	30×40	0.15	1.85	ELK3BM331Q40KT
	330	35×30	0.15	1.85	ELK3BM331R30KT
	390	30×40	0.15	2.04	ELK3BM391Q40KT
	390	35×35	0.15	2.06	ELK3BM391R35KT
	470	30×50	0.15	2.27	ELK3BM471Q50KT
	470	35×40	0.15	2.30	ELK3BM471R40KT
	560	35×45	0.15	2.57	ELK3BM561R45KT
680	35×50	0.15	2.80	ELK3BM681R50KT	
400	82	22x25	0.15	0.80	ELK2GM820O25KT
	100	22x30	0.15	0.94	ELK2GM101O30KT
	120	22x30	0.15	1.04	ELK2GM121O30KT
	120	25x25	0.15	1.08	ELK2GM121P25KT
	150	22x35	0.15	1.18	ELK2GM151O35KT
	150	25x30	0.15	1.21	ELK2GM151P30KT
	180	22x40	0.15	1.34	ELK2GM181O40KT
	180	25x35	0.15	1.37	ELK2GM181P35KT
	180	30x25	0.15	1.45	ELK2GM181Q25KT
	220	22x45	0.15	1.50	ELK2GM221O45KT
	220	25x35	0.15	1.56	ELK2GM221P35KT
	220	30x30	0.15	1.58	ELK2GM221Q30KT
	270	25x40	0.15	1.70	ELK2GM271P40KT
	270	30x35	0.15	1.73	ELK2GM271Q35KT
	330	25x50	0.15	1.90	ELK2GM331P50KT
	330	30x40	0.15	1.95	ELK2GM331Q40KT
	330	35x30	0.15	1.95	ELK2GM331R30KT
	390	25x50	0.15	2.15	ELK2GM391P50KT
	390	30x35	0.15	2.10	ELK2GM391Q35KT
	390	30x40	0.15	2.15	ELK2GM391Q40KT
	390	35x30	0.15	2.15	ELK2GM391R30KT
	390	35x35	0.15	2.17	ELK2GM391R35KT
	470	30x50	0.15	2.39	ELK2GM471Q50KT
	470	35x40	0.15	2.42	ELK2GM471R40KT
	560	35x40	0.15	2.55	ELK2GM561R40KT
	560	35x45	0.15	2.71	ELK2GM561R45KT
	680	30x60	0.15	2.92	ELK2GM681Q60KT
	680	35x45	0.15	2.92	ELK2GM681R45KT
	680	35x50	0.15	2.95	ELK2GM681R50KT
	820	30x50	0.15	2.80	ELK2GM821Q50KT
	820	30x55	0.15	2.95	ELK2GM821Q55KT
	820	30x60	0.15	3.00	ELK2GM821Q60KT
	820	35x60	0.15	3.25	ELK2GM821R60KT
	820	40x50	0.15	3.20	ELK2GM821Y50PT
	1000	30x80	0.15	3.65	ELK2GM102Q80KT
	1000	35x50	0.15	3.20	ELK2GM102R50KT
	1000	35x60	0.15	3.65	ELK2GM102R60KT
	1000	35x70	0.15	3.80	ELK2GM102R70KT
	1000	40x55	0.15	3.55	ELK2GM102Y55PT
	1200	35x65	0.15	3.80	ELK2GM122R65KT
1200	35x70	0.15	4.20	ELK2GM122R70KT	
1200	40x60	0.15	4.20	ELK2GM122Y60PT	
1500	35x85	0.15	4.50	ELK2GM152R85PT	
1500	40x80	0.15	4.90	ELK2GM152Y80PT	
1800	40x90	0.15	5.75	ELK2GM182Y90PT	
2200	40x100	0.15	6.66	ELK2GM222YA0PT	
420	82	22×25	0.15	0.75	ELK2TM820O25KT
	100	22×30	0.15	0.87	ELK2TM101O30KT
	100	25×25	0.15	0.92	ELK2TM101P25KT
	120	22×30	0.15	1.01	ELK2TM121O30KT
	120	25×25	0.15	1.03	ELK2TM121P25KT
	150	22×35	0.15	1.19	ELK2TM151O35KT

LH series

■ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (A _{rms} /105°C, 120Hz)	Part Number	
200	470	25x30	0.15	1.44	ELH2DM471P30KT	
	470	30x25	0.15	1.48	ELH2DM471Q25KT	
	560	22x35	0.15	1.50	ELH2DM561O35KT	
	560	22x45	0.15	1.60	ELH2DM561O45KT	
	560	25x35	0.15	1.60	ELH2DM561P35KT	
	560	30x30	0.15	1.60	ELH2DM561Q30KT	
	680	22x50	0.15	1.75	ELH2DM681O50KT	
	680	25x40	0.15	1.76	ELH2DM681P40KT	
	680	30x30	0.15	1.74	ELH2DM681Q30KT	
	820	25x45	0.15	2.10	ELH2DM821P45KT	
	820	30x35	0.15	2.11	ELH2DM821Q35KT	
	820	35x30	0.15	2.10	ELH2DM821R30KT	
	1000	25x45	0.15	2.20	ELH2DM102P45KT	
	1000	25x50	0.15	2.36	ELH2DM102P50KT	
	1000	30x40	0.15	2.40	ELH2DM102Q40KT	
	1000	35x35	0.15	2.30	ELH2DM102R35KT	
	1200	30x45	0.15	2.69	ELH2DM122Q45KT	
	1200	35x35	0.15	2.53	ELH2DM122R35KT	
	1500	30x45	0.15	2.60	ELH2DM152Q45KT	
	1500	35x40	0.15	2.97	ELH2DM152R40KT	
	1800	35x50	0.15	3.45	ELH2DM182R50KT	
220	220	22x25	0.15	0.94	ELH2NM221O25KT	
	270	22x30	0.15	1.09	ELH2NM271O30KT	
	330	22x35	0.15	1.24	ELH2NM331O35KT	
	330	25x30	0.15	1.14	ELH2NM331P30KT	
	390	22x35	0.15	1.30	ELH2NM391O35KT	
	390	25x30	0.15	1.26	ELH2NM391P30KT	
	470	22x40	0.15	1.41	ELH2NM471O40KT	
	470	25x35	0.15	1.39	ELH2NM471P35KT	
	470	30x25	0.15	1.37	ELH2NM471Q25KT	
	560	22x45	0.15	1.60	ELH2NM561O45KT	
	560	25x40	0.15	1.56	ELH2NM561P40KT	
	560	30x30	0.15	1.61	ELH2NM561Q30KT	
	560	35x25	0.15	1.52	ELH2NM561R25KT	
	680	25x45	0.15	1.75	ELH2NM681P45KT	
	680	30x35	0.15	1.76	ELH2NM681Q35KT	
	680	35x30	0.15	1.72	ELH2NM681R30KT	
	820	25x50	0.15	1.97	ELH2NM821P50KT	
	820	30x40	0.15	2.06	ELH2NM821Q40KT	
	820	35x30	0.15	1.95	ELH2NM821R30KT	
	1000	30x45	0.15	2.44	ELH2NM102Q45KT	
	1000	35x35	0.15	2.20	ELH2NM102R35KT	
1200	35x40	0.15	2.37	ELH2NM122R40KT		
1500	35x45	0.15	2.64	ELH2NM152R45KT		
250	180	22x25	0.15	0.84	ELH2EM181O25KT	
	220	22x30	0.15	0.97	ELH2EM221O30KT	
	220	25x25	0.15	0.99	ELH2EM221P25KT	
	270	22x35	0.15	1.11	ELH2EM271O35KT	
	270	25x30	0.15	1.15	ELH2EM271P30KT	
	330	22x40	0.15	1.26	ELH2EM331O40KT	
	330	25x30	0.15	1.26	ELH2EM331P30KT	
	330	30x25	0.15	1.31	ELH2EM331Q25KT	
	390	22x45	0.15	1.41	ELH2EM391O45KT	
	390	25x35	0.15	1.42	ELH2EM391P35KT	
	390	30x30	0.15	1.50	ELH2EM391Q30KT	
	470	22x50	0.15	1.58	ELH2EM471O50KT	
	470	25x40	0.15	1.61	ELH2EM471P40KT	
	470	30x30	0.15	1.61	ELH2EM471Q30KT	
	560	25x45	0.15	1.80	ELH2EM561P45KT	
	560	30x35	0.15	1.84	ELH2EM561Q35KT	
	300	680	25x50	0.15	2.03	ELH2EM681P50KT
		680	30x40	0.15	2.09	ELH2EM681Q40KT
		680	35x25	0.15	1.80	ELH2EM681R25KT
		680	35x30	0.15	1.72	ELH2EM681R30KT
		820	30x45	0.15	2.35	ELH2EM821Q45KT
820		35x35	0.15	2.26	ELH2EM821R35KT	
1000		30x50	0.15	2.64	ELH2EM102Q50KT	
1000		35x35	0.15	2.40	ELH2EM102R35KT	
1000		35x40	0.15	2.57	ELH2EM102R40KT	
1200		35x45	0.15	2.88	ELH2EM122R45KT	
1200		40x40	0.15	2.88	ELH2EM122Y40PT	
1500		35x50	0.15	3.00	ELH2EM152R50KT	
120		22x25	0.15	0.56	ELH2FM121O25KT	
150		22x30	0.15	0.66	ELH2FM151O30KT	
150		25x25	0.15	0.65	ELH2FM151P25KT	
180		22x30	0.15	0.78	ELH2FM181O30KT	
180		25x25	0.15	0.71	ELH2FM181P25KT	
220		22x35	0.15	0.89	ELH2FM221O35KT	
220		25x30	0.15	0.85	ELH2FM221P30KT	
270		22x40	0.15	1.01	ELH2FM271O40KT	
270		25x30	0.15	0.98	ELH2FM271P30KT	
270	30x25	0.15	1.01	ELH2FM271Q25KT		
315	330	22x45	0.15	1.14	ELH2FM331O45KT	
	330	25x35	0.15	1.12	ELH2FM331P35KT	
	330	30x30	0.15	1.21	ELH2FM331Q30KT	
	390	25x40	0.15	1.31	ELH2FM391P40KT	
	390	30x30	0.15	1.30	ELH2FM391Q30KT	
	390	35x25	0.15	1.23	ELH2FM391R25KT	
	470	30x35	0.15	1.53	ELH2FM471Q35KT	
	470	35x30	0.15	1.47	ELH2FM471R30KT	
	560	30x40	0.15	1.65	ELH2FM561Q40KT	
	560	35x35	0.15	1.66	ELH2FM561R35KT	
	680	30x45	0.15	1.80	ELH2FM681Q45KT	
	680	35x40	0.15	1.96	ELH2FM681R40KT	
	820	35x50	0.15	2.19	ELH2FM821R50KT	
	100	22x25	0.15	0.53	ELH2VM101O25KT	
	120	22x30	0.15	0.61	ELH2VM121O30KT	
	120	25x25	0.15	0.62	ELH2VM121P25KT	
	150	22x35	0.15	0.73	ELH2VM151O35KT	
	150	25x30	0.15	0.73	ELH2VM151P30KT	
	180	22x40	0.15	0.83	ELH2VM181O40KT	
	180	25x30	0.15	0.80	ELH2VM181P30KT	
	180	30x25	0.15	0.81	ELH2VM181Q25KT	
350	220	22x45	0.15	0.94	ELH2VM221O45KT	
	220	25x35	0.15	0.92	ELH2VM221P35KT	
	220	30x30	0.15	0.98	ELH2VM221Q30KT	
	270	25x40	0.15	1.07	ELH2VM271O50KT	
	270	25x40	0.15	1.05	ELH2VM271P40KT	
	270	30x30	0.15	1.03	ELH2VM271Q30KT	
	330	25x45	0.15	1.24	ELH2VM331P45KT	
	330	30x35	0.15	1.24	ELH2VM331Q35KT	
	330	35x30	0.15	1.18	ELH2VM331R30KT	
	390	25x50	0.15	1.38	ELH2VM391P50KT	
	390	30x40	0.15	1.39	ELH2VM391Q40KT	
	390	35x35	0.15	1.39	ELH2VM391R35KT	
	470	30x45	0.15	1.57	ELH2VM471Q45KT	
	470	35x35	0.15	1.50	ELH2VM471R35KT	
	560	30x50	0.15	1.75	ELH2VM561Q50KT	
	560	35x40	0.15	1.69	ELH2VM561R40KT	
	680	35x45	0.15	1.96	ELH2VM681R45KT	
	385	820	35x50	0.15	2.36	ELH2VM821R50KT
		820	35x55	0.15	2.50	ELH2VM821R55KT
		1000	35x65	0.15	2.60	ELH2VM102R65KT
		1000	35x70	0.15	2.65	ELH2VM102R70KT
1200		35x75	0.15	2.85	ELH2VM122R75KT	
1200		40x70	0.15	2.97	ELH2VM122Y70PT	
1500		35x85	0.15	3.00	ELH2VM152R85KT	
120		22x25	0.15	0.53	ELH2GM120O25KT	
150		22x30	0.15	0.61	ELH2GM150O30KT	
150		25x25	0.15	0.62	ELH2GM150P25KT	
180		22x35	0.15	0.73	ELH2GM180O35KT	
180		22x40	0.15	0.75	ELH2GM180O40KT	
180		25x30	0.15	0.73	ELH2GM180P30KT	
180		30x25	0.15	0.75	ELH2GM180Q25KT	
220		22x40	0.15	0.86	ELH2GM220O40KT	
220		22x45	0.15	0.88	ELH2GM220O45KT	
220		25x35	0.15	0.86	ELH2GM220P35KT	
220		30x25	0.15	0.88	ELH2GM220Q25KT	
220		30x30	0.15	0.94	ELH2GM220Q30KT	
270		25x40	0.15	0.97	ELH2GM270P40KT	
270		30x25	0.15	0.94	ELH2GM270Q25KT	
270	30x30	0.15	1.00	ELH2GM270Q30KT		
270	35x25	0.15	0.94	ELH2GM270R25KT		
400	330	30x30	0.15	1.10	ELH2GM330Q30KT	
	330	30x35	0.15	1.16	ELH2GM330Q35KT	
	330	35x30	0.15	1.10	ELH2GM330R30KT	
	390	30x35	0.15	1.20	ELH2GM390Q35KT	
	390	30x40	0.15	1.26	ELH2GM390Q40KT	
	390	35x30	0.15	1.20	ELH2GM390R30KT	
	470	30x40	0.15	1.30	ELH2GM470Q40KT	
	470	30x45	0.15	1.36	ELH2GM470Q45KT	
	470	35x35	0.15	1.30	ELH2GM470R35KT	
	470	35x40	0.15	1.36	ELH2GM470R40KT	
	560	30x45	0.15	1.44	ELH2GM560Q45KT	
	560	30x50	0.15	1.50	ELH2GM560Q50KT	
	560	35x40	0.15	1.44	ELH2GM560R40KT	
	680	30x50	0.15	1.60	ELH2GM680Q50KT	
	680	30x55	0.15	1.70	ELH2GM680Q55KT	
	680	35x40	0.15	1.60	ELH2GM680R40KT	
	680	35x45	0.15	1.70	ELH2GM680R45KT	
	680	35x50	0.15	1.80	ELH2GM680R50KT	
	820	35x50	0.15	1.80	ELH2GM820R50KT	
	420	820	35x55	0.15	1.90	ELH2GM820R55KT
		1000	35x65	0.15	1.90	ELH2GM1000R65KT
1000		35x70	0.15	1.95	ELH2GM1000R70KT	
440	1000	40x60	0.15	1.90	ELH2GM1000Y60PT	
	1200	35x75	0.15	2.10	ELH2GM1200R75KT	
	1200	40x70	0.15	2.15	ELH2GM1200Y70PT	
460	1200	40x75	0.15	2.20	ELH2GM1200Y75PT	
	1500	35x85	0.15	2.20	ELH2GM1500R85KT	
	1500	40x80	0.15	2.25	ELH2GM1500Y80PT	

LZ series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
400	150	22x25	0.15	0.90	ELZ2GM151O25KT
	180	22x30	0.15	1.02	ELZ2GM181O40KT
	180	25x25	0.15	1.04	ELZ2GM181P30KT
	220	22x35	0.15	1.20	ELZ2GM221O45KT
	220	25x30	0.15	1.22	ELZ2GM221P35KT
	270	22x40	0.15	1.32	ELZ2GM271O50KT
	270	25x30	0.15	1.28	ELZ2GM271P40KT
	270	30x25	0.15	1.32	ELZ2GM271R25KT
	330	22x45	0.15	1.46	ELZ2GM331P50KT
	330	25x35	0.15	1.42	ELZ2GM331Q40KT
	390	22x55	0.15	1.65	ELZ2GM391P50KT
	390	25x40	0.15	1.60	ELZ2GM391Q45KT
	390	30x30	0.15	1.60	ELZ2GM391R35KT
	470	25x50	0.15	1.90	ELZ2GM471Q50KT
	470	30x35	0.15	1.78	ELZ2GM471R40KT
	560	25x55	0.15	2.08	ELZ2GM561R45KT
	560	30x40	0.15	2.00	ELZ2GM561R45KT
	680	30x50	0.15	2.28	ELZ2GM681R45KT
	820	30x55	0.15	2.50	ELZ2GM821R50KT
420	150	22x25	0.20	0.87	ELZ2TM151O25KT
	180	22x30	0.20	1.00	ELZ2TM181O30KT
	180	25x25	0.20	1.02	ELZ2TM181P25KT
	220	22x35	0.20	1.13	ELZ2TM221O35KT
	270	22x40	0.20	1.27	ELZ2TM271O40KT
	270	25x30	0.20	1.28	ELZ2TM271P30KT
	270	30x25	0.20	1.28	ELZ2TM271Q25KT
	330	22x45	0.20	1.44	ELZ2TM331O45KT
	330	25x35	0.20	1.48	ELZ2TM331P35KT
	390	22x55	0.20	1.63	ELZ2TM391O55KT
	390	25x40	0.20	1.64	ELZ2TM391P40KT
	390	30x30	0.20	1.55	ELZ2TM391Q30KT
	470	25x50	0.20	1.86	ELZ2TM471P50KT
	470	30x35	0.20	1.74	ELZ2TM471Q35KT
	560	25x55	0.20	2.09	ELZ2TM561P55KT
	560	30x40	0.20	1.96	ELZ2TM561Q40KT
	680	30x50	0.20	2.25	ELZ2TM681Q50KT
	820	30x55	0.20	2.52	ELZ2TM821Q55KT
	120	22x25	0.20	0.78	ELZ2WM121O25KT
	180	22x30	0.20	1.00	ELZ2WM181O30KT
	180	25x25	0.20	1.02	ELZ2WM181P25KT
	220	22x35	0.20	1.13	ELZ2WM221O35KT
	220	25x30	0.20	1.16	ELZ2WM221P30KT
	270	22x45	0.20	1.30	ELZ2WM271O45KT
	270	25x35	0.20	1.34	ELZ2WM271P35KT
	330	22x50	0.20	1.47	ELZ2WM331O50KT
	330	25x40	0.20	1.51	ELZ2WM331P40KT

Specifications subject to change without notice.

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
450	330	30x30	0.20	1.43	ELZ2WM331Q30KT
	390	25x45	0.20	1.67	ELZ2WM391P45KT
	390	30x35	0.20	1.59	ELZ2WM391Q35KT
	470	25x55	0.20	1.81	ELZ2WM471P55KT
	470	30x40	0.20	1.70	ELZ2WM471Q40KT
	560	25x60	0.20	1.88	ELZ2WM561P60KT
	560	30x45	0.20	1.80	ELZ2WM561Q45KT
	680	30x50	0.20	2.00	ELZ2WM681Q50KT
	820	30x60	0.20	2.30	ELZ2WM821Q60KT

LS series

- Downsized, long life series
- Endurance: 3,000 hours at 85°C
- Non solvent-proof type
- RoHS Compliant

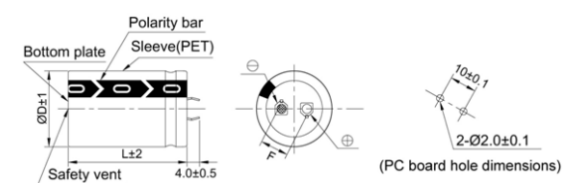


■ SPECIFICATIONS

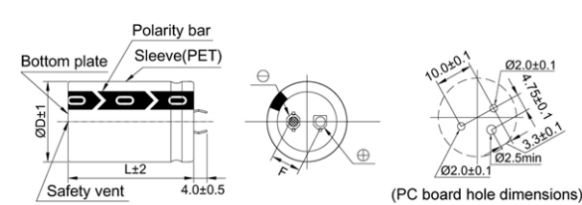
Items	Characteristics				
Category Temperature Range	-25~+85°C				
Rated Voltage Range	160~600V.DC				
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)				
Leakage Current	I≤3√CV Where, I:Max.leakage current (μA),C:Nominal capacitance (μF),V: Rated voltage (V) (at 20°C after 5 minutes)				
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	160 to 400	420 to 550	600	(at 20°C,120Hz)
	Dissipation Factor(Max.)	0.15	0.20	0.30	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(V _{dc})	160 to 250	315 to 550	600	(at 120Hz)
	Z(-25°C)/Z(+20°C)	4	8	10	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus the rated ripple current is applied for 3,000 hours at 85°C.				
	Capacitance Change	≤±20% of the initial value			
	Dissipation Factor	≤200% of the initial specified value			
	Leakage Current	≤The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 85 °C without voltage applied.				
	Capacitance Change	≤±15% of the initial value			
	Dissipation Factor	≤150% of the initial specified value			
	Leakage Current	≤200% of the initial specified value			

■ DIMENSIONS[mm]

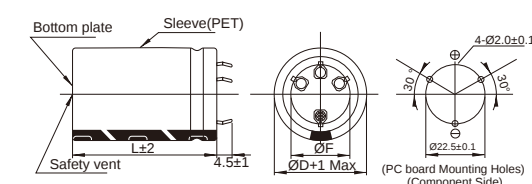
- Terminal Code : K (Φ22 to Φ35) : Standard



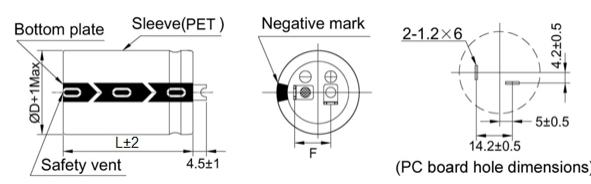
- Terminal Code : T (Φ22 to Φ35) : Standard



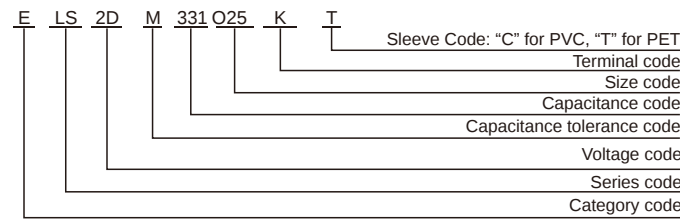
- Terminal Code: P (Φ35 to Φ45): Standard



- Terminal Code : L (Φ35) : Standard



■ PART NUMBERING SYSTEM



■ RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current (Hz)

W.V	120	1k	10k	100k
160~250	1.00	1.32	1.45	1.50
315~600	1.00	1.30	1.41	1.43

LM series

■ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
160	220	22×20	0.15	0.81	ELM2CM221O20KT
	270	25×20	0.15	0.98	ELM2CM271P20KT
	330	22×25	0.15	1.20	ELM2CM331O25KT
	330	25×20	0.15	1.02	ELM2CM331P20KT
	390	22×25	0.15	1.30	ELM2CM391O25KT
	390	25×25	0.15	1.26	ELM2CM391P25KT
	390	30×20	0.15	1.25	ELM2CM391Q20KT
	470	22×30	0.15	1.55	ELM2CM471O30KT
	470	25×25	0.15	1.55	ELM2CM471P25KT
	470	30×20	0.15	1.30	ELM2CM471Q20KT
	560	22×35	0.15	1.67	ELM2CM561O35KT
	560	25×30	0.15	1.67	ELM2CM561P30KT
	560	30×25	0.15	1.67	ELM2CM561Q25KT
	560	35×20	0.15	1.46	ELM2CM561R20KT
	680	22×40	0.15	1.82	ELM2CM681O40KT
	680	25×30	0.15	1.82	ELM2CM681P30KT
	680	30×25	0.15	1.82	ELM2CM681Q25KT
	680	35×20	0.15	1.51	ELM2CM681R20KT
	820	22×45	0.15	2.04	ELM2CM821O45KT
	820	25×35	0.15	2.04	ELM2CM821P35KT
	820	30×30	0.15	2.04	ELM2CM821Q30KT
	820	35×25	0.15	2.04	ELM2CM821R25KT
	1000	22×50	0.15	2.25	ELM2CM102O50KT
	1000	25×40	0.15	2.25	ELM2CM102P40KT
	1000	30×30	0.15	2.25	ELM2CM102Q30KT
	1000	35×25	0.15	2.25	ELM2CM102R25KT
	1200	25×45	0.15	2.49	ELM2CM122P45KT
	1200	30×35	0.15	2.49	ELM2CM122Q35KT
	1200	30×40	0.15	2.54	ELM2CM122Q40KT
	1200	35×30	0.15	2.49	ELM2CM122R30KT
	1500	25×60	0.15	2.97	ELM2CM152P60KT
	1500	30×40	0.15	2.84	ELM2CM152Q40KT
	1800	30×45	0.15	3.32	ELM2CM182Q45KT
	1800	35×35	0.15	3.00	ELM2CM182R35KT
	2200	30×60	0.15	3.86	ELM2CM222Q60KT
	2200	35×45	0.15	3.50	ELM2CM222R45KT
	2700	35×50	0.15	4.00	ELM2CM272R50KT
	3300	35×60	0.15	4.35	ELM2CM332R60KT
180	180	22×20	0.15	0.80	ELM2LM181O20KT
	220	25×20	0.15	0.90	ELM2LM221P20KT
	270	22×25	0.15	1.00	ELM2LM271O25KT
	270	25×20	0.15	0.95	ELM2LM271P20KT
	330	22×25	0.15	1.20	ELM2LM331O25KT
	330	25×25	0.15	1.16	ELM2LM331P25KT
	330	30×20	0.15	1.15	ELM2LM331Q20KT
	390	22×30	0.15	1.35	ELM2LM391O30KT
	390	25×25	0.15	1.35	ELM2LM391P25KT
	390	30×20	0.15	1.20	ELM2LM391Q20KT
	470	22×35	0.15	1.50	ELM2LM471O35KT
	470	25×30	0.15	1.50	ELM2LM471P30KT
	470	30×25	0.15	1.50	ELM2LM471Q25KT
	470	35×20	0.15	1.36	ELM2LM471R20KT
	560	22×40	0.15	1.67	ELM2LM561O40KT
	560	25×30	0.15	1.67	ELM2LM561P30KT
	560	30×25	0.15	1.67	ELM2LM561Q25KT
	560	35×20	0.15	1.43	ELM2LM561R20KT
	680	22×45	0.15	1.78	ELM2LM681O45KT
	680	25×35	0.15	1.78	ELM2LM681P35KT
	680	30×30	0.15	1.78	ELM2LM681Q30KT
	680	35×25	0.15	1.83	ELM2LM681R25KT
	820	22×50	0.15	2.04	ELM2LM821O50KT
	820	25×40	0.15	2.04	ELM2LM821P40KT
	820	30×30	0.15	2.04	ELM2LM821Q30KT
	820	35×25	0.15	2.04	ELM2LM821R25KT
	1000	25×45	0.15	2.30	ELM2LM102P45KT
	1000	30×35	0.15	2.30	ELM2LM102Q35KT
	1000	35×30	0.15	2.30	ELM2LM102R30KT
	1200	25×50	0.15	2.55	ELM2LM122P50KT
	1200	30×40	0.15	2.55	ELM2LM122Q40KT
	1200	35×30	0.15	2.55	ELM2LM122R30KT
	1500	30×45	0.15	2.90	ELM2LM152Q45KT
	1500	35×35	0.15	2.85	ELM2LM152R35KT
	1800	30×60	0.15	3.49	ELM2LM182Q60KT
	1800	35×40	0.15	3.10	ELM2LM182R40KT
	2200	35×50	0.15	3.65	ELM2LM222R50KT
	2700	35×60	0.15	4.12	ELM2LM272R60KT

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
200	150	22×20	0.15	0.73	ELM2DM151O20KT
	180	22×20	0.15	0.80	ELM2DM181O20KT
	220	25×20	0.15	0.85	ELM2DM221P20KT
	270	22×25	0.15	1.10	ELM2DM271O25KT
	270	30×20	0.15	1.05	ELM2DM271Q20KT
	330	22×30	0.15	1.25	ELM2DM331O30KT
	330	25×25	0.15	1.25	ELM2DM331P25KT
	330	30×20	0.15	1.10	ELM2DM331Q20KT
	390	22×30	0.15	1.35	ELM2DM391O30KT
	390	25×25	0.15	1.35	ELM2DM391P25KT
	390	30×25	0.15	1.30	ELM2DM391Q25KT
	390	35×20	0.15	1.30	ELM2DM391R20KT
	470	22×35	0.15	1.50	ELM2DM471O35KT
	470	22×40	0.15	1.54	ELM2DM471O40KT
	470	25×30	0.15	1.50	ELM2DM471P30KT
	470	30×25	0.15	1.50	ELM2DM471Q25KT
	470	35×20	0.15	1.41	ELM2DM471R20KT
	560	22×40	0.15	1.67	ELM2DM561O40KT
	560	25×30	0.15	1.67	ELM2DM561P30KT
	560	30×25	0.15	1.67	ELM2DM561Q25KT
	680	22×45	0.15	1.78	ELM2DM681O45KT
	680	25×35	0.15	1.78	ELM2DM681P35KT
	680	30×30	0.15	1.78	ELM2DM681Q30KT
	680	35×25	0.15	1.78	ELM2DM681R25KT
	820	25×40	0.15	2.04	ELM2DM821P40KT
	820	25×45	0.15	2.04	ELM2DM821P45KT
	820	30×30	0.15	2.04	ELM2DM821Q30KT
	820	30×35	0.15	2.08	ELM2DM821Q35KT
	1000	25×50	0.15	2.30	ELM2DM102P50KT
	1000	30×35	0.15	2.30	ELM2DM102Q35KT
	1000	35×30	0.15	2.30	ELM2DM102R30KT
	1200	25×60	0.15	2.66	ELM2DM122P60KT
	1200	30×45	0.15	2.65	ELM2DM122Q45KT
	1200	35×35	0.15	2.65	ELM2DM122R35KT
	1500	30×50	0.15	3.08	ELM2DM152Q50KT
	1500	35×40	0.15	3.08	ELM2DM152R40KT
	1800	30×60	0.15	3.49	ELM2DM182Q60KT
	1800	35×45	0.15	3.48	ELM2DM182R45KT
	2200	35×55	0.15	3.62	ELM2DM222R55KT
	3300	40×60	0.15	4.00	ELM2DM332Y60PT
220	150	22×20	0.15	0.67	ELM2NM151O20KT
	180	25×20	0.15	0.76	ELM2NM181P20KT
	220	22×25	0.15	1.00	ELM2NM221O25KT
	220	25×20	0.15	0.84	ELM2NM221P20KT
	270	22×30	0.15	1.15	ELM2NM271O30KT
	270	25×25	0.15	1.08	ELM2NM271P25KT
	270	30×20	0.15	0.98	ELM2NM271Q20KT
	330	22×35	0.15	1.25	ELM2NM331O35KT
	330	25×25	0.15	1.25	ELM2NM331P25KT
	330	35×20	0.15	1.13	ELM2NM331R20KT
	390	22×35	0.15	1.40	ELM2NM391O35KT
	390	25×30	0.15	1.40	ELM2NM391P30KT
	390	30×25	0.15	1.36	ELM2NM391Q25KT
	390	35×20	0.15	1.23	ELM2NM391R20KT
	470	22×40	0.15	1.51	ELM2NM471O40KT
	470	25×35	0.15	1.54	ELM2NM471P35KT
	470	30×25	0.15	1.50	ELM2NM471Q25KT
	560	22×45	0.15	1.70	ELM2NM561O45KT
	560	25×40	0.15	1.72	ELM2NM561P40KT
	560	30×30	0.15	1.70	ELM2NM561Q30KT
	560	35×25	0.15	1.71	ELM2NM561R25KT
	680	25×45	0.15	1.94	ELM2NM681P45KT
	680	30×35	0.15	1.93	ELM2NM681Q35KT
	680	35×25	0.15	1.89	ELM2NM681R25KT
	820	25×50	0.15	2.18	ELM2NM821P50KT
	820	30×40	0.15	2.19	ELM2NM821Q40KT
	820	35×30	0.15	2.16	ELM2NM821R30KT
	1000	25×60	0.15	2.54	ELM2NM102P60KT
	1000	30×45	0.15	2.50	ELM2NM102Q45KT
	1000	35×35	0.15	2.44	ELM2NM102R35KT
	1200	30×50	0.15	2.81	ELM2NM122Q50KT
	1200	35×40	0.15	2.79	ELM2NM122R40KT
	1500	30×60	0.15	3.30	ELM2NM152Q60KT
	1500	35×45	0.15	3.22	ELM2NM152R45KT
	1800	35×50	0.15	3.63	ELM2NM182R50KT
	2200	35×60	0.15	4.23	ELM2NM222R60KT

LM series

■ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
250	120	22×20	0.15	0.60	ELM2EM121O20KT
	150	25×20	0.15	0.74	ELM2EM151P20KT
	180	22×25	0.15	0.78	ELM2EM181O25KT
	180	25×20	0.15	0.75	ELM2EM181P20KT
	220	22×25	0.15	1.00	ELM2EM221O25KT
	220	25×25	0.15	0.95	ELM2EM221P25KT
	220	30×20	0.15	0.95	ELM2EM221Q20KT
	270	22×30	0.15	1.18	ELM2EM271O30KT
	270	25×25	0.15	1.18	ELM2EM271P25KT
	270	30×20	0.15	1.00	ELM2EM271Q20KT
	330	22×35	0.15	1.30	ELM2EM331O35KT
	330	25×30	0.15	1.30	ELM2EM331P30KT
	330	30×25	0.15	1.30	ELM2EM331Q25KT
	330	35×20	0.15	1.16	ELM2EM331R20KT
	390	22×40	0.15	1.49	ELM2EM391O40KT
	390	25×35	0.15	1.49	ELM2EM391P35KT
	390	30×25	0.15	1.49	ELM2EM391Q25KT
	470	22×45	0.15	1.65	ELM2EM471O45KT
	470	25×35	0.15	1.65	ELM2EM471P35KT
	470	30×25	0.15	1.60	ELM2EM471Q25KT
	470	30×30	0.15	1.65	ELM2EM471Q30KT
	470	35×25	0.15	1.65	ELM2EM471R25KT
	560	22×50	0.15	1.67	ELM2EM561O50KT
	560	25×40	0.15	1.80	ELM2EM561P40KT
	560	30×30	0.15	1.80	ELM2EM561Q30KT
	560	35×25	0.15	1.80	ELM2EM561R25KT
	680	25×40	0.15	1.90	ELM2EM681P40KT
	680	25×50	0.15	2.00	ELM2EM681P50KT
	680	30×35	0.15	2.00	ELM2EM681Q35KT
	680	35×30	0.15	2.00	ELM2EM681R30KT

LM series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
400	330	30x40	0.15	1.44	ELM2GM331Q40KT
	330	35x30	0.15	1.44	ELM2GM331R30KT
	390	25x60	0.15	1.51	ELM2GM391P60KT
	390	30x45	0.15	1.60	ELM2GM391Q45KT
	390	35x35	0.15	1.60	ELM2GM391R35KT
	470	25x50	0.15	1.80	ELM2GM471P50KT
	470	30x50	0.15	1.90	ELM2GM471Q50KT
	470	35x35	0.15	1.80	ELM2GM471R35KT
	470	35x40	0.15	1.90	ELM2GM471R40KT
	470	35x45	0.15	2.00	ELM2GM471R45KT
	560	30x50	0.15	2.05	ELM2GM561Q50KT
	560	30x60	0.15	2.10	ELM2GM561Q60KT
	560	35x45	0.15	2.12	ELM2GM561R45KT
	680	35x45	0.15	2.20	ELM2GM681R45KT
	680	35x50	0.15	2.27	ELM2GM681R50KT
	820	35x60	0.15	2.42	ELM2GM821R60KT
	1000	35x65	0.15	2.60	ELM2GM102R65KT
	1200	35x65	0.15	2.70	ELM2GM122R65KT
	1200	40x80	0.15	2.80	ELM2GM122Y80PT
	1500	40x80	0.15	3.00	ELM2GM152Y80PT
	2200	45x100	0.15	3.50	ELM2GM222IA0PT
420	47	22x20	0.20	0.37	ELM2TM470O20KT
	56	25x20	0.20	0.42	ELM2TM560P20KT
	68	22x25	0.20	0.50	ELM2TM680O25KT
	68	25x20	0.20	0.46	ELM2TM680P20KT
	82	22x25	0.20	0.64	ELM2TM820O25KT
	82	25x20	0.20	0.56	ELM2TM820P20KT
	82	25x25	0.20	0.58	ELM2TM820P25KT
	82	30x20	0.20	0.53	ELM2TM820Q20KT
	100	22x30	0.20	0.70	ELM2TM101O30KT
	100	25x25	0.20	0.70	ELM2TM101P25KT
	100	30x20	0.20	0.59	ELM2TM101Q20KT
	120	22x35	0.20	0.75	ELM2TM121O35KT
	120	25x30	0.20	0.75	ELM2TM121P30KT
	120	30x25	0.20	0.73	ELM2TM121Q25KT
	120	35x20	0.20	0.67	ELM2TM121R20KT
	150	22x40	0.20	0.88	ELM2TM151O40KT
	150	25x35	0.20	0.88	ELM2TM151P35KT
	150	30x25	0.20	0.88	ELM2TM151Q25KT
	180	22x45	0.20	0.95	ELM2TM181O45KT
	180	25x35	0.20	0.95	ELM2TM181P35KT
	180	30x30	0.20	0.95	ELM2TM181Q30KT
	180	35x25	0.20	0.94	ELM2TM181R25KT
	220	22x50	0.20	1.10	ELM2TM221O50KT
	220	25x45	0.20	1.10	ELM2TM221P45KT
	220	30x35	0.20	1.10	ELM2TM221Q35KT
	220	35x25	0.20	1.10	ELM2TM221R25KT
	270	25x50	0.20	1.22	ELM2TM271P50KT
	270	30x40	0.20	1.22	ELM2TM271Q40KT
	270	35x30	0.20	1.22	ELM2TM271R30KT
	330	25x60	0.20	1.41	ELM2TM331P60KT
	330	30x45	0.20	1.45	ELM2TM331Q45KT
	330	35x35	0.20	1.45	ELM2TM331R35KT
	390	30x50	0.20	1.55	ELM2TM391Q50KT
	390	35x40	0.20	1.55	ELM2TM391R40KT
	470	30x60	0.20	1.79	ELM2TM471Q60KT
	470	35x45	0.20	1.90	ELM2TM471R45KT
	560	35x50	0.20	2.15	ELM2TM561R50KT
	680	35x60	0.20	2.27	ELM2TM681R60KT
450	56	22x25	0.20	0.40	ELM2WM560Q25KT
	68	22x30	0.20	0.53	ELM2WM680O30KT
	68	25x25	0.20	0.50	ELM2WM680P25KT
	82	22x30	0.20	0.64	ELM2WM820O30KT
	82	25x25	0.20	0.64	ELM2WM820P25KT
	100	22x30	0.20	0.69	ELM2WM101O30KT
	100	25x25	0.20	0.69	ELM2WM101P25KT
	120	22x35	0.20	0.80	ELM2WM121O35KT
	120	25x30	0.20	0.80	ELM2WM121P30KT

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
450	120	30x25	0.20	0.80	ELM2WM121Q25KT
	150	22x40	0.20	0.88	ELM2WM151O40KT
	150	25x30	0.20	0.88	ELM2WM151P30KT
	150	30x25	0.20	0.88	ELM2WM151Q25KT
	180	22x45	0.20	1.00	ELM2WM181O45KT
	180	25x35	0.20	1.00	ELM2WM181P35KT
	180	30x25	0.20	0.92	ELM2WM181Q25KT
	180	30x30	0.20	1.00	ELM2WM181Q30KT
	220	22x45	0.20	1.10	ELM2WM221O45KT
	220	25x35	0.20	1.10	ELM2WM221P35KT
	220	25x40	0.20	1.12	ELM2WM221P40KT
	220	25x45	0.20	1.18	ELM2WM221P45KT
	220	30x25	0.20	1.00	ELM2WM221Q25KT
	220	30x30	0.20	1.08	ELM2WM221Q30KT
	220	30x35	0.20	1.12	ELM2WM221Q35KT
	220	35x25	0.20	1.12	ELM2WM221R25KT
	270	25x50	0.20	1.18	ELM2WM271P50KT
	270	30x30	0.20	1.10	ELM2WM271Q30KT
	270	30x35	0.20	1.26	ELM2WM271Q35KT
	270	30x40	0.20	1.28	ELM2WM271Q40KT
	270	35x30	0.20	1.20	ELM2WM271R30KT
	270	35x35	0.20	1.28	ELM2WM271R35KT
	330	25x45	0.20	1.24	ELM2WM331P45KT
	330	25x50	0.20	1.31	ELM2WM331P50KT
	330	30x45	0.20	1.40	ELM2WM331Q45KT
	330	35x35	0.20	1.38	ELM2WM331R35KT
	390	25x60	0.20	1.48	ELM2WM391P60KT
	390	30x50	0.20	1.51	ELM2WM391Q50KT
	390	35x40	0.20	1.55	ELM2WM391R40KT
	470	30x45	0.20	1.60	ELM2WM471Q45KT
	470	35x40	0.20	1.70	ELM2WM471R40KT
	470	35x50	0.20	1.85	ELM2WM471R50KT
	560	30x50	0.20	1.72	ELM2WM561Q50KT
	560	30x55	0.20	1.84	ELM2WM561Q55KT
	560	35x45	0.20	1.84	ELM2WM561R45KT
	560	35x50	0.20	1.91	ELM2WM561R50KT
	680	30x65	0.20	2.00	ELM2WM681Q65KT
	680	35x55	0.20	2.10	ELM2WM681R55KT
	820	35x65	0.20	2.30	ELM2WM821R65KT
	1000	35x70	0.20	2.50	ELM2WM102R70PT
	1500	45x83	0.20	2.80	ELM2WM152I83PT
500	47	22x25	0.20	0.51	ELM2HM470O25KT
	56	22x30	0.20	0.58	ELM2HM560O30KT
	68	25x25	0.20	0.65	ELM2HM680P25KT
	82	22x35	0.20	0.72	ELM2HM820O35KT
	82	25x30	0.20	0.74	ELM2HM820P30KT
	100	22x45	0.20	0.83	ELM2HM101O45KT
	100	30x25	0.20	0.82	ELM2HM101Q25KT
	120	22x50	0.20	0.93	ELM2HM121O50KT
	120	25x35	0.20	0.93	ELM2HM121P35KT
	120	25x40	0.20	0.95	ELM2HM121P40KT
	120	30x30	0.20	0.91	ELM2HM121Q30KT
	150	22x50	0.20	1.08	ELM2HM151O50KT
	150	25x45	0.20	1.08	ELM2HM151P45KT
	150	30x35	0.20	1.04	ELM2HM151Q35KT
	150	35x25	0.20	0.99	ELM2HM151R25KT
	180	25x50	0.20	1.20	ELM2HM181P50KT
	180	30x40	0.20	1.17	ELM2HM181Q40KT
	180	35x30	0.20	1.10	ELM2HM181R30KT
	220	30x45	0.20	1.33	ELM2HM221Q45KT
	220	35x35	0.20	1.23	ELM2HM221R35KT
	270	30x50	0.20	1.38	ELM2HM271Q50KT
	270	35x40	0.20	1.40	ELM2HM271R40KT
	330	35x40	0.20	1.52	ELM2HM331R40KT
	330	35x45	0.20	1.55	ELM2HM331R45KT
	390	35x50	0.20	1.68	ELM2HM391R50KT
	470	35x60	0.20	1.76	ELM2HM471R60KT

LM series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
550	82	22x35	0.20	0.72	ELM2JM820O35KT
	82	25x30	0.20	0.74	ELM2JM820P30KT
	100	22x45	0.20	0.83	ELM2JM101O45KT
	100	25x35	0.20	0.85	ELM2JM101P35KT
	100	30x25	0.20	0.82	ELM2JM101Q25KT
	120	22x50	0.20	0.93	ELM2JM121O50KT
	120	25x40	0.20	0.95	ELM2JM121P40KT
	120	30x30	0.20	0.91	ELM2JM121Q30KT
	120	35x25	0.20	0.88	ELM2JM121R25KT
	150	25x45	0.20	1.08	ELM2JM151P45KT
	150	30x35	0.20	1.04	ELM2JM151Q35KT
	180	25x50	0.20	1.20	ELM2JM181P50KT
	180	30x40	0.20	1.17	ELM2JM181Q40KT
	180	35x30	0.20	1.10	ELM2JM181R30KT
	220	30x45	0.20	1.33	ELM2JM221Q45KT
	220	35x35	0.20	1.23	ELM2JM221R35KT
	270	30x50	0.20	1.50	ELM2JM271Q50KT
	270	35x40	0.20	1.42	ELM2JM271R40KT
	330	35x50	0.20	1.60	ELM2JM331R50KT
	390	35x55	0.20	1.64	ELM2JM391R55KT
	470	35x60	0.20	1.80	ELM2JM471R60KT

Specifications subject to change without notice.

LQ series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
315	100	22×25	0.15	0.79	ELQ2FM101O25KT
	120	22×30	0.15	0.90	ELQ2FM121O30KT
	150	22×30	0.15	1.06	ELQ2FM151O30KT
	150	25×25	0.15	1.00	ELQ2FM151P25KT
	180	22×35	0.15	1.29	ELQ2FM181O35KT
	180	25×30	0.15	1.32	ELQ2FM181P30KT
	220	22×40	0.15	1.41	ELQ2FM221O40KT
	220	25×35	0.15	1.45	ELQ2FM221P35KT
	220	30×25	0.15	1.28	ELQ2FM221Q25KT
	270	22×45	0.15	1.68	ELQ2FM271O45KT
	270	25×40	0.15	1.62	ELQ2FM271P40KT
	270	30×30	0.15	1.55	ELQ2FM271Q30KT
	270	35×25	0.15	1.43	ELQ2FM271R25KT
	330	25×45	0.15	1.94	ELQ2FM331P45KT
	330	30×35	0.15	1.98	ELQ2FM331Q35KT
	330	35×30	0.15	1.91	ELQ2FM331R30KT
	390	25×50	0.15	2.11	ELQ2FM391P50KT
	390	30×40	0.15	2.15	ELQ2FM391Q40KT
	390	35×30	0.15	1.95	ELQ2FM391R30KT
	470	30×45	0.15	2.38	ELQ2FM471Q45KT
	470	35×35	0.15	2.46	ELQ2FM471R35KT
	560	30×50	0.15	2.63	ELQ2FM561Q50KT
	560	35×40	0.15	2.69	ELQ2FM561R40KT
	680	35×45	0.15	3.05	ELQ2FM681R45KT
350	82	22×25	0.15	0.64	ELQ2VM820O25KT
	100	22×25	0.15	0.86	ELQ2VM101O25KT
	120	22×30	0.15	1.04	ELQ2VM121O30KT
	120	25×25	0.15	0.90	ELQ2VM121P25KT
	150	22×35	0.15	1.20	ELQ2VM151O35KT
	150	25×30	0.15	1.22	ELQ2VM151P30KT
	180	22×40	0.15	1.34	ELQ2VM181O40KT
	180	25×30	0.15	1.37	ELQ2VM181P30KT
	220	22×45	0.15	1.47	ELQ2VM221O45KT
	220	25×35	0.15	1.53	ELQ2VM221P35KT
	220	30×30	0.15	1.54	ELQ2VM221Q30KT
	220	35×25	0.15	1.29	ELQ2VM221R25KT
	270	25×45	0.15	1.73	ELQ2VM271P45KT
	270	30×35	0.15	1.80	ELQ2VM271Q35KT
	270	35×30	0.15	1.49	ELQ2VM271R30KT
	330	25×50	0.15	1.97	ELQ2VM331P50KT
	330	30×40	0.15	2.03	ELQ2VM331Q40KT
	330	35×30	0.15	1.80	ELQ2VM331R30KT
	390	30×40	0.15	2.23	ELQ2VM391Q40KT
	390	35×35	0.15	2.30	ELQ2VM391R35KT
	470	30×45	0.15	2.53	ELQ2VM471Q45KT
	470	35×40	0.15	2.55	ELQ2VM471R40KT
	560	35×45	0.15	2.75	ELQ2VM561R45KT
	680	35×50	0.15	3.15	ELQ2VM681R50KT
400	68	22×25	0.15	0.65	ELQ2GM680O25KT
	82	22×25	0.15	0.84	ELQ2GM820O25KT
	100	22×30	0.15	0.99	ELQ2GM101O30KT
	100	25×25	0.15	0.82	ELQ2GM101P25KT
	120	22×35	0.15	1.09	ELQ2GM121O35KT
	120	25×30	0.15	1.13	ELQ2GM121P30KT
	150	22×40	0.15	1.24	ELQ2GM151O40KT
	150	25×30	0.15	1.27	ELQ2GM151P30KT
	150	30×25	0.15	1.20	ELQ2GM151Q25KT
	180	22×45	0.15	1.41	ELQ2GM181O45KT
	180	25×35	0.15	1.44	ELQ2GM181P35KT
	180	30×30	0.15	1.52	ELQ2GM181Q30KT
	180	35×25	0.15	1.16	ELQ2GM181R25KT

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
400	220	22×50	0.15	1.58	ELQ2GM221O50KT
	220	25×40	0.15	1.64	ELQ2GM221P40KT
	220	30×35	0.15	1.66	ELQ2GM221Q35KT
	220	35×30	0.15	1.47	ELQ2GM221R30KT
	270	25×45	0.15	1.79	ELQ2GM271P45KT
	270	30×40	0.15	1.82	ELQ2GM271Q40KT
	270	35×30	0.15	1.63	ELQ2GM271R30KT
	330	30×45	0.15	2.05	ELQ2GM331Q45KT
	330	35×35	0.15	2.05	ELQ2GM331R35KT
	390	30×50	0.15	2.26	ELQ2GM391Q50KT
	390	35×40	0.15	2.28	ELQ2GM391R40KT
	470	35×45	0.15	2.54	ELQ2GM471R45KT
	560	35×50	0.15	2.85	ELQ2GM561R50KT
	680	35×55	0.15	3.28	ELQ2GM681R55KT
	1000	35×55	0.15	3.50	ELQ2GM102R55KT
	1000	35×65	0.15	3.62	ELQ2GM102R65KT
	1200	40×60	0.15	3.80	ELQ2GM122Y60PT
	1200	40×70	0.15	3.90	ELQ2GM122Y70PT
	1500	40×75	0.15	4.15	ELQ2GM152Y75PT
	1500	40×80	0.15	4.20	ELQ2GM152Y80PT
	1500	45×60	0.15	4.15	ELQ2GM152I60PT
	1800	35×100	0.15	4.52	ELQ2GM182RA0KT
	1800	40×80	0.15	4.52	ELQ2GM182Y80PT
	1800	40×100	0.15	4.68	ELQ2GM182YA0PT
420	100	22×30	0.20	0.97	ELQ2TM101O30KT
	100	25×25	0.20	0.98	ELQ2TM101P25KT
	120	22×30	0.20	1.07	ELQ2TM121O30KT
	120	25×30	0.20	1.08	ELQ2TM121P30KT
	150	22×40	0.20	1.21	ELQ2TM151O40KT
	150	25×35	0.20	1.26	ELQ2TM151P35KT
	180	25×35	0.20	1.42	ELQ2TM181P35KT
	180	30×30	0.20	1.48	ELQ2TM181Q30KT
	220	25×40	0.20	1.58	ELQ2TM221P40KT
	220	30×35	0.20	1.65	ELQ2TM221Q35KT
	270	30×35	0.20	1.90	ELQ2TM271Q35KT
	270	35×30	0.20	1.94	ELQ2TM271R30KT
	330	35×35	0.20	2.17	ELQ2TM331R35KT
	390	30×50	0.20	2.22	ELQ2TM391Q50KT
	390	35×45	0.20	2.23	ELQ2TM391R45KT
	560	35×50	0.20	2.93	ELQ2TM561R50KT
450	68	22×30	0.20	0.71	ELQ2WM680O30KT
	82	22×35	0.20	0.86	ELQ2WM820O35KT
	100	22×35	0.20	0.95	ELQ2WM101O35KT
	100	25×30	0.20	0.97	ELQ2WM101P30KT
	120	22×40	0.20	1.07	ELQ2WM121O40KT
	120	25×35	0.20	1.09	ELQ2WM121P35KT
	150	22×50	0.20	1.18	ELQ2WM151O50KT
	150	25×40	0.20	1.25	ELQ2WM151P40KT
	150	30×30	0.20	1.29	ELQ2WM151Q30KT
	180	25×45	0.20	1.40	ELQ2WM181P45KT
	180	30×35	0.20	1.45	ELQ2WM181Q35KT
	180	35×25	0.20	1.30	ELQ2WM181R25KT
	220	25×50	0.20	1.59	ELQ2WM221P50KT
	220	30×40	0.20	1.64	ELQ2WM221Q40KT
	220	35×30	0.20	1.60	ELQ2WM221R30KT
	270	30×45	0.20	1.88	ELQ2WM271Q45KT
	270	35×35	0.20	1.89	ELQ2WM271R35KT
	330	30×50	0.20	2.12	ELQ2WM331Q50KT
	330	35×40	0.20	2.15	ELQ2WM331R40KT
	390	35×45	0.20	2.35	ELQ2WM391R45KT
	470	35×50	0.20	2.65	ELQ2WM471R50KT

LQ series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/85°C, 120Hz)	Part Number
450	560	35×50	0.20	2.88	ELQ2WM561R50KT
	680	35×55	0.20	3.20	ELQ2WM681R55KT
	820	35×60	0.20	3.58	ELQ2WM821R60KT
	1000	35×70	0.20	3.70	ELQ2WM102R70KT

Specifications subject to change without notice.

LX series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
160	330	22×25	0.15	1.11	ELX2CM331O25KT
	390	22×30	0.15	1.26	ELX2CM391O30KT
	470	22×30	0.15	1.39	ELX2CM471O30KT
	470	25×25	0.15	1.38	ELX2CM471P25KT
	560	22×35	0.15	1.55	ELX2CM561O35KT
	560	25×30	0.15	1.55	ELX2CM561P30KT
	680	22×40	0.15	1.75	ELX2CM681O40KT
	680	25×35	0.15	1.78	ELX2CM681P35KT
	680	30×25	0.15	1.74	ELX2CM681Q25KT
	820	22×50	0.15	1.97	ELX2CM821O50KT
	820	25×40	0.15	2.01	ELX2CM821P40KT
	820	30×30	0.15	1.96	ELX2CM821Q30KT
	1000	25×45	0.15	2.27	ELX2CM102P45KT
	1000	30×35	0.15	2.26	ELX2CM102Q35KT
	1200	25×50	0.15	2.54	ELX2CM122P50KT
	1200	30×40	0.15	2.56	ELX2CM122Q40KT
	1200	35×30	0.15	2.52	ELX2CM122R30KT
	1500	30×45	0.15	2.96	ELX2CM152Q45KT
	1500	35×35	0.15	2.89	ELX2CM152R35KT
	1800	30×50	0.15	3.32	ELX2CM182Q50KT
180	1800	35×40	0.15	3.30	ELX2CM182R40KT
	2200	35×50	0.15	3.50	ELX2CM222R50KT
	270	22×25	0.15	1.00	ELX2LM271O25KT
	330	22×30	0.15	1.16	ELX2LM331O30KT
	390	22×30	0.15	1.26	ELX2LM391O30KT
	390	25×25	0.15	1.26	ELX2LM391P25KT
	470	22×35	0.15	1.42	ELX2LM471O35KT
	470	25×30	0.15	1.42	ELX2LM471P30KT
	560	22×40	0.15	1.59	ELX2LM561O40KT
	560	25×30	0.15	1.55	ELX2LM561P30KT
	560	30×25	0.15	1.58	ELX2LM561Q25KT
	680	22×45	0.15	1.79	ELX2LM681O45KT
	680	25×35	0.15	1.78	ELX2LM681P35KT
	680	30×30	0.15	1.79	ELX2LM681Q30KT
	820	25×40	0.15	2.01	ELX2LM821P40KT
	820	30×35	0.15	2.04	ELX2LM821Q35KT
	1000	25×50	0.15	2.32	ELX2LM102P50KT
	1000	30×35	0.15	2.26	ELX2LM102Q35KT
	1000	35×30	0.15	2.30	ELX2LM102R30KT
	1200	30×45	0.15	2.65	ELX2LM122Q45KT
200	1200	35×35	0.15	2.58	ELX2LM122R35KT
	1500	30×50	0.15	3.03	ELX2LM152Q50KT
	1500	35×40	0.15	3.01	ELX2LM152R40KT
	1800	35×45	0.15	3.20	ELX2LM182R45KT
	2200	35×50	0.15	3.50	ELX2LM222R50KT
	220	22×25	0.15	0.90	ELX2DM221O25KT
	270	22×30	0.15	1.05	ELX2DM271O30KT
	330	22×30	0.15	1.16	ELX2DM331O30KT
	330	25×25	0.15	1.16	ELX2DM331P25KT
	390	22×35	0.15	1.29	ELX2DM391O35KT
	390	25×30	0.15	1.29	ELX2DM391P30KT
	470	22×40	0.15	1.46	ELX2DM471O40KT
	470	25×30	0.15	1.42	ELX2DM471P30KT
	470	30×25	0.15	1.45	ELX2DM471Q25KT
	560	22×45	0.15	1.63	ELX2DM561O45KT
	560	25×35	0.15	1.62	ELX2DM561P35KT
	560	30×30	0.15	1.62	ELX2DM561Q30KT

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
200	680	25×40	0.15	1.83	ELX2DM681P40KT
	680	30×30	0.15	1.79	ELX2DM681Q30KT
	820	25×45	0.15	2.06	ELX2DM821P45KT
	820	30×35	0.15	2.04	ELX2DM821Q35KT
	1000	30×45	0.15	2.42	ELX2DM102Q45KT
	1000	35×35	0.15	2.30	ELX2DM102R35KT
	1200	30×50	0.15	2.71	ELX2DM122Q50KT
	1200	35×40	0.15	2.70	ELX2DM122R40KT
	1500	35×45	0.15	3.11	ELX2DM152R45KT
	1800	35×50	0.15	3.30	ELX2DM182R50KT
	220	22×25	0.15	0.90	ELX2NM221O25KT
	270	22×30	0.15	1.05	ELX2NM271O30KT
	330	22×35	0.15	1.19	ELX2NM331O35KT
	330	25×25	0.15	1.16	ELX2NM331P25KT
	390	22×40	0.15	1.33	ELX2NM391O40KT
	390	25×30	0.15	1.29	ELX2NM391P30KT
	470	22×45	0.15	1.49	ELX2NM471O45KT
	470	25×35	0.15	1.48	ELX2NM471P35KT
	470	30×25	0.15	1.45	ELX2NM471Q25KT
	560	22×50	0.15	1.63	ELX2NM561O50KT
220	560	25×40	0.15	1.71	ELX2NM561P40KT
	560	30×30	0.15	1.62	ELX2NM561Q30KT
	680	25×45	0.15	1.87	ELX2NM681P45KT
	680	30×35	0.15	1.86	ELX2NM681Q35KT
	820	25×50	0.15	2.10	ELX2NM821P50KT
	820	30×40	0.15	2.12	ELX2NM821Q40KT
	820	35×30	0.15	2.08	ELX2NM821R30KT
	1000	30×50	0.15	2.48	ELX2NM102Q50KT
	1000	35×40	0.15	2.46	ELX2NM102R40KT
	1200	35×45	0.15	2.78	ELX2NM122R45KT
	1500	35×50	0.15	3.00	ELX2NM152R50KT
	180	22×25	0.15	0.82	ELX2EM181O25KT
	220	22×30	0.15	0.95	ELX2EM221O30KT
	270	22×35	0.15	1.08	ELX2EM271O35KT
	270	25×25	0.15	1.05	ELX2EM271P25KT
	330	22×40	0.15	1.22	ELX2EM331O40KT
	330	25×30	0.15	1.19	ELX2EM331P30KT
	390	22×45	0.15	1.36	ELX2EM391O45KT
	390	25×35	0.15	1.35	ELX2EM391P35KT
	390	30×25	0.15	1.32	ELX2EM391Q25KT
250	470	22×50	0.15	1.49	ELX2EM471O50KT
	470	25×40	0.15	1.52	ELX2EM471P40KT
	470	30×30	0.15	1.49	ELX2EM471Q30KT
	560	25×45	0.15	1.70	ELX2EM561P45KT
	560	30×35	0.15	1.69	ELX2EM561Q35KT
	680	25×50	0.15	1.91	ELX2EM681P50KT
	680	30×40	0.15	1.93	ELX2EM681Q40KT
	680	35×30	0.15	1.90	ELX2EM681R30KT
	820	30×45	0.15	2.19	ELX2EM821Q45KT
	820	35×35	0.15	2.13	ELX2EM821R35KT
	1000	35×40	0.15	2.46	ELX2EM102R40KT
	1200	35×50	0.15	2.86	ELX2EM122R50KT
	100	22×25	0.15	0.67	ELX2FM101O25KT
	120	22×30	0.15	0.77	ELX2FM121O30KT
	150	22×30	0.15	0.86	ELX2FM151O30KT
	150	25×25	0.15	0.85	ELX2FM151P25KT

LX series

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
315	180	22×35	0.15	0.96	ELX2FM181O35KT
	180	25×30	0.15	0.96	ELX2FM181P30KT
	220	22×40	0.15	1.09	ELX2FM221O40KT
	220	25×30	0.15	1.06	ELX2FM221P30KT
	220	30×25	0.15	1.08	ELX2FM221Q25KT
	270	22×45	0.15	1.24	ELX2FM271O45KT
	270	25×35	0.15	1.23	ELX2FM271P35KT
	270	30×30	0.15	1.23	ELX2FM271Q30KT
	330	25×40	0.15	1.40	ELX2FM331P40KT
	330	30×35	0.15	1.42	ELX2FM331Q35KT
	330	35×30	0.15	1.45	ELS2VM391P40KT
	390	25×50	0.15	1.59	ELX2FM391P50KT
	390	30×35	0.15	1.54	ELX2FM391Q35KT
	390	35×30	0.15	1.57	ELX2FM391R30KT
	470	30×45	0.15	1.81	ELX2FM471Q45KT
	470	35×35	0.15	1.77	ELX2FM471R35KT
	560	30×50	0.15	2.03	ELX2FM561Q50KT
	560	35×40	0.15	2.02	ELX2FM561R40KT
	680	35×45	0.15	2.29	ELX2FM681R45KT
	820	35×50	0.15	2.59	ELX2FM821R50KT
350	100	22×25	0.15	0.67	ELX2VM101O25KT
	120	22×30	0.15	0.77	ELX2VM121O30KT
	120	25×25	0.15	0.76	ELX2VM121P25KT
	150	22×35	0.15	0.88	ELX2VM151O35KT
	150	25×30	0.15	0.88	ELX2VM151P30KT
	180	22×40	0.15	0.99	ELX2VM181O40KT
	180	25×30	0.15	0.96	ELX2VM181P30KT
	180	30×25	0.15	0.98	ELX2VM181Q25KT
	220	22×45	0.15	1.12	ELX2VM221O45KT
	220	25×35	0.15	1.11	ELX2VM221P35KT
	220	30×30	0.15	1.11	ELX2VM221Q30KT
	270	25×40	0.15	1.26	ELX2VM271P40KT
	270	30×35	0.15	1.28	ELX2VM271Q35KT
	330	25×45	0.15	1.40	ELX2VM331P45KT
	330	30×35	0.15	1.42	ELX2VM331Q35KT
	330	35×30	0.15	1.45	ELX2VM331R30KT
	390	30×40	0.15	1.60	ELX2VM391Q40KT
	390	35×35	0.15	1.61	ELX2VM391R35KT
	470	30×50	0.15	1.86	ELX2VM471Q50KT
	470	35×40	0.15	1.85	ELX2VM471R40KT
400	560	35×40	0.15	2.02	ELX2VM561R40KT
	680	35×50	0.15	2.36	ELX2VM681R50KT
	820	35×55	0.15	2.60	ELX2VM821R55KT
	68	22×25	0.15	0.55	ELX2GM680O25KT
	82	22×30	0.15	0.63	ELX2GM820O30KT
	100	22×30	0.15	0.70	ELX2GM101O30KT
	100	25×25	0.15	0.70	ELX2GM101P25KT
	120	22×35	0.15	0.79	ELX2GM121O35KT
	120	25×30	0.15	0.79	ELX2GM121P30KT
	150	22×40	0.15	0.90	ELX2GM151O40KT
	150	25×30	0.15	0.88	ELX2GM151P30KT
	150	30×25	0.15	0.90	ELX2GM151Q25KT
	180	22×45	0.15	0.99	ELX2GM181O45KT
	180	25×35	0.15	1.01	ELX2GM181P35KT
	180	30×30	0.15	1.01	ELX2GM181Q30KT
	220	25×40	0.15	1.14	ELX2GM221P40KT
	220	30×35	0.15	1.16	ELX2GM221Q35KT

WV (V _{dc})	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (Arms/105°C, 120Hz)	Part Number
400	270	25×50	0.15	1.32	ELX2GM271P50KT
	270	30×40	0.15	1.33	ELX2GM271Q40KT
	270	35×30	0.15	1.31	ELX2GM271R30KT
	330	25×45	0.15	1.35	ELX2GM331P45KT
	330	30×45	0.15	1.52	ELX2GM331Q45KT
	330	35×35	0.15	1.48	ELX2GM331R35KT
	390	30×50	0.15	1.69	ELX2GM391Q50KT
	390	35×40	0.15	1.68	ELX2GM391R40KT
	470	35×45	0.15	1.91	ELX2GM471R45KT
560	35×50	0.15	2.14	ELX2GM561R50KT	
420	56	22×25	0.20	0.50	ELX2TM560O25KT
	68	22×30	0.20	0.58	ELX2TM680O30KT
	82	22×30	0.20	0.63	ELX2TM820O30KT
	82	25×25	0.20	0.63	ELX2TM820P25KT
	100	22×35	0.20	0.72	ELX2TM101O35KT
	100	25×30	0.20	0.72	ELX2TM101P30KT
	120	22×40	0.20	0.81	ELX2TM121O40KT
	120	25×30	0.20	0.79	ELX2TM121P30KT
	120	30×25	0.20	0.80	ELX2TM121Q25KT
	150	22×45	0.20	0.92	ELX2TM151O45KT
	150	25×35	0.20	0.92	ELX2TM151P35KT
	150	30×30	0.20	0.92	ELX2TM151Q30KT
	180	25×40	0.20	1.03	ELX2TM181P40KT
	180	30×35	0.20	1.05	ELX2TM181Q35KT
	220	25×50	0.20	1.19	ELX2TM221P50KT
	220	30×35	0.20	1.16	ELX2TM221Q35KT
	220	35×30	0.20	1.18	ELX2TM221R30KT
	270	30×45	0.20	1.38	ELX2TM271Q45KT
	270	35×35	0.20	1.34	ELX2TM271R35KT
	330	30×50	0.20	1.56	ELX2TM331Q50KT
330	35×40	0.20	1.55	ELX2TM331R40KT	
390	35×45	0.20	1.74	ELX2TM391R45KT	
470	35×50	0.20	1.96	ELX2TM471R50KT	
450	47	22×25	0.20	0.46	ELX2WM470O25KT
	56	22×30	0.20	0.52	ELX2WM560O30KT
	68	22×30	0.20	0.58	ELX2WM680O30KT
	68	25×25	0.20	0.58	ELX2WM680P25KT
	82	22×35	0.20	0.65	ELX2WM820O35KT
	82	25×30	0.20	0.65	ELX2WM820P30KT
	100	22×40	0.20	0.74	ELX2WM101O40KT
	100	25×30	0.20	0.72	ELX2WM101P30KT
	100	30×25	0.20	0.73	ELX2WM101Q25KT
	120	22×45	0.20	0.83	ELX2WM121O45KT
	120	25×35	0.20	0.82	ELX2WM121P35KT
	120	30×30	0.20	0.82	ELX2WM121Q30KT
	150	25×40	0.20	0.94	ELX2WM151P40KT
	150	30×35	0.20	0.96	ELX2WM151Q35KT
	180	25×45	0.20	1.06	ELX2WM181P45KT
	180	30×35	0.20	1.05	ELX2WM181Q35KT
	180	35×30	0.20	1.07	ELX2WM181R30KT
	220	30×40	0.20	1.20	ELX2WM221Q40KT
	220	35×35	0.20	1.21	ELX2WM221R35KT
	270	30×50	0.20	1.41	ELX2WM271Q50KT
270	35×40	0.20	1.40	ELX2WM271R40KT	
330	35×45	0.20	1.60	ELX2WM331R45KT	
390	35×50	0.20	1.79	ELX2WM391R50KT	

NK series

STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Size ΦD×L(mm)	tanδ	ESR typ. 120Hz 20°C mΩ	ESR max. 120Hz 20°C mΩ	Rated ripple current (Arms/105°C,120Hz)	Part Number
350	1000	51.6×80	0.20	88	140	5.3	ENK2VM102S80*00C
	1500	51.6×80	0.20	65	99	7.9	ENK2VM152S80*00C
	2200	51.6×105	0.20	40	68	10.2	ENK2VM222SA5*00C
	3300	64.3×115	0.20	26	45	14.5	ENK2VM332TB5*00C
	3900	64.3×130	0.20	23	41	16.4	ENK2VM392TD0*00C
	4700	64.3×155	0.20	20	36	19.2	ENK2VM472TF5*00C
	5600	76.9×143	0.20	18	29	21.9	ENK2VM562UE3*00C
	6800	76.9×168	0.20	15	25	26.3	ENK2VM682UG8*00C
	8200	76.9×196	0.20	13	23	30.2	ENK2VM822UJ6*00C
	10000	76.9×220	0.20	11	18	33.7	ENK2VM103UM0*00C
	12000	100×196	0.20	10	14	38.0	ENK2VM123AJ6*00C
	15000	100×250	0.20	8	12	47.9	ENK2VM153VP0*00C
400	1000	51.6×80	0.20	90	141	5.2	ENK2GM102S80*00C
	1500	51.6×96	0.20	61	92	7.1	ENK2GM152S96*00C
	2200	64.3×105	0.20	45	61	10.4	ENK2GM222TA5*00C
	3300	64.3×130	0.20	29	42	15.2	ENK2GM332TD0*00C
	3900	76.9×130	0.20	25	35	18.0	ENK2GM392UD0*00C
	4700	76.9×143	0.20	20	29	20.6	ENK2GM472UE3*00C
	5600	76.9×168	0.20	19	26	23.9	ENK2GM562UG8*00C
	6800	76.9×196	0.20	16	21	27.5	ENK2GM682UJ6*00C
	8200	91×196	0.20	13	19	30.8	ENK2GM822VJ6*00C
	10000	100×196	0.20	11	17	34.9	ENK2GM103AJ6*00C
	12000	100×220	0.20	7	11	40.0	ENK2GM123AM0*00C
450	1000	51.6×105	0.20	87	138	5.3	ENK2WM102SA5*00C
	1500	51.6×115	0.20	60	92	7.1	ENK2WM152SB5*00C
	2200	64.3×115	0.20	41	62	11.9	ENK2WM222TB5*00C
	3300	76.9×130	0.20	25	39	16.7	ENK2WM332UD0*00C
	3900	76.9×143	0.20	23	34	18.9	ENK2WM392UE3*00C
	4700	76.9×168	0.20	20	29	21.9	ENK2WM472UG8*00C
	5600	76.9×196	0.20	17	26	24.4	ENK2WM562UJ6*00C
	6800	76.9×220	0.20	13	20	28.0	ENK2WM682UM0*00C
	8200	91×196	0.20	10	15	32.3	ENK2WM822VJ6*00C
	10000	100×220	0.20	8	13	36.9	ENK2WM103AM0*00C

Specifications subject to change without notice.