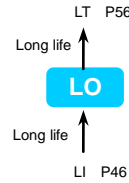


# LO SERIES



- Long life version of LOseries
- Endurance with ripple current: 10000 hours at 85°C.
- Rated voltage range: 160V-550V
- Ideal for switching power and inverter smoothing capacitors



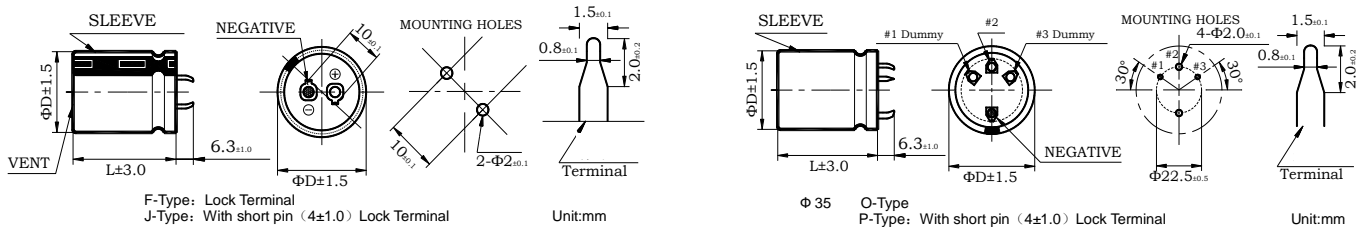
## ◆ SPECIFICATIONS

Items	Characteristics															
Operating Temperature Range	-25~+85°C															
Rated Working Voltage Range	160~550V															
Capacitance tolerance	±20% (20°C, 120Hz)															
Dissipation Factor (MAX) 20°C, 120Hz	<table border="1"> <tr> <td>U<sub>R</sub>(V)</td> <td>160</td> <td>200</td> <td>250</td> <td>400</td> <td>450</td> <td>500~550</td> </tr> <tr> <td>tanδ</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.18</td> <td>0.20</td> <td>0.20</td> </tr> </table>	U <sub>R</sub> (V)	160	200	250	400	450	500~550	tanδ	0.15	0.15	0.15	0.18	0.20	0.20	
	U <sub>R</sub> (V)	160	200	250	400	450	500~550									
tanδ	0.15	0.15	0.15	0.18	0.20	0.20										
Impedance Ratio (MAX) 120Hz	<table border="1"> <tr> <td>U<sub>R</sub>(V)</td> <td>160~200</td> <td>250</td> <td>400</td> <td>450~550</td> </tr> <tr> <td>Z<sub>-25°C</sub>/Z<sub>+20°C</sub></td> <td>3</td> <td>4</td> <td>7</td> <td>8</td> </tr> <tr> <td>Z<sub>-40°C</sub>/Z<sub>+20°C</sub></td> <td>15</td> <td>15</td> <td></td> <td></td> </tr> </table>	U <sub>R</sub> (V)	160~200	250	400	450~550	Z <sub>-25°C</sub> /Z <sub>+20°C</sub>	3	4	7	8	Z <sub>-40°C</sub> /Z <sub>+20°C</sub>	15	15		
	U <sub>R</sub> (V)	160~200	250	400	450~550											
	Z <sub>-25°C</sub> /Z <sub>+20°C</sub>	3	4	7	8											
Z <sub>-40°C</sub> /Z <sub>+20°C</sub>	15	15														
Leakage Current (MAX)	I=0.01C <sub>R</sub> U <sub>R</sub> or 1.5mA whichever is minimum. (at 20°C, After 5 minutes application of rated voltage) I=Leakage Current(μA)      U <sub>R</sub> =Rated Voltage(V)      C <sub>R</sub> =Rated Capacitance(μF)															

	Useful Life		Load Life	Endurance Test	Shelf Life
Life Time	11000h	>200000h	10000h	10000h	1000h
Leakage Current	≤ Specified value		≤ Specified value	≤ Specified value	≤ Specified value
tanδ Change	≤ 300% of specified value		≤ 200% of specified value	≤ 200% of specified value	≤ 200% of specified value
Capacitance Change	Within ± 30% of initial value		Within ± 20% of initial value	Within ± 20% of initial value	Within ± 20% of initial value
Condition Applied Voltage Applied Ripple Current Applied Temperature Failure Rate Level	U <sub>R</sub> I <sub>R</sub> 85°C ≤ 1% Failure rate	U <sub>R</sub> 1.2 × I <sub>R</sub> 40°C ≤ 1% Failure rate	U <sub>R</sub> I <sub>R</sub> 85°C 0%	U <sub>R</sub> I <sub>R</sub> =0 85°C 0%	U <sub>R</sub> =0 I <sub>R</sub> =0 85°C 0% Back up to 20 °C and placed more than 24 hours. U <sub>R</sub> to be applied for 60 min before measurement.

## ◆ Dimensions

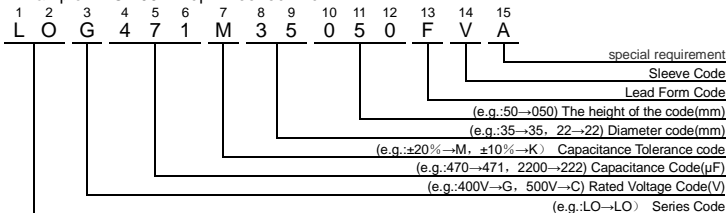
### ● Terminal Code



● Please ask for advice for other sizes.

## ◆ PART NUMBER SYSTEM

● Example LO 400V470μF Φ35×50 ±20%



## ◆ Rated Ripple Current Multiplies

### ● Frequency coefficient

Rated voltage (v)	Frequency (Hz)				
	50 (60)	100 (120)	300	1k	≥10k
160~550WV	0.80	1.00	1.16	1.30	1.41

### ● Temperature coefficient

Rated voltage (v)	Temperature (°C)			
	+40	+55	+70	+85
160~550WV	1.7	1.5	1.3	1.0

# LO SERIES

◆ Standard Ratings

WV <sub>DC</sub> (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20℃ 120Hz	Ripple Current 85℃ 120Hz (Arms)	Catalog Part Number
160 (200)	330	22×25	0.15	1.50	LON331M22025□VA
	390	25×25	0.15	1.60	LON391M25025□VA
	470	22×35	0.15	1.80	LON471M22035□VA
	560	22×40	0.15	2.10	LON561M22040□VA
	560	25×30	0.15	2.20	LON561M25030□VA
	560	30×25	0.15	2.20	LON561M30025□VA
	680	22×40	0.15	2.60	LON681M22040□VA
	680	25×35	0.15	2.60	LON681M25035□VA
	820	22×50	0.15	2.80	LON821M22050□VA
	820	25×40	0.15	2.80	LON821M25040□VA
	820	30×30	0.15	2.90	LON821M30030□VA
	820	35×25	0.15	2.90	LON821M35025□VA
	1000	25×45	0.15	3.30	LON102M25045□VA
	1000	30×35	0.15	3.30	LON102M30035□VA
	1000	35×30	0.15	3.40	LON102M35030□VA
	1200	25×50	0.15	3.70	LON122M25050□VA
	1200	30×40	0.15	3.70	LON122M30040□VA
	1200	35×35	0.15	3.80	LON122M35035□VA
	1500	30×45	0.15	4.30	LON152M30045□VA
	1500	35×40	0.15	4.40	LON152M35040□VA
1800	35×45	0.15	4.81	LON182M35045□VA	
2200	35×50	0.15	5.33	LON222M35050□VA	
2700	35×80	0.15	5.70	LON272M35080□VA	
3300	40×80	0.15	6.80	LON332M40080□VA	
3900	35×80	0.15	7.20	LON392M35080□VA	
4700	40×80	0.15	7.90	LON472M40080□VA	
5600	40×90	0.15	7.50	LON562M40090□VA	
200 (250)	220	22×25	0.15	1.20	LOL221M22025□VA
	330	22×30	0.15	1.55	LOL331M22030□VA
	330	25×25	0.15	1.60	LOL331M25025□VA
	390	22×35	0.15	1.80	LOL391M22035□VA
	390	25×30	0.15	1.80	LOL391M25030□VA
	470	22×40	0.15	2.00	LOL471M22040□VA
	470	30×25	0.15	2.10	LOL471M30025□VA
	560	22×45	0.15	2.20	LOL561M22045□VA
	560	25×35	0.15	2.20	LOL561M25035□VA
	560	30×30	0.15	2.30	LOL561M30030□VA
	560	35×25	0.15	2.30	LOL561M35025□VA
	680	25×40	0.15	2.60	LOL681M25040□VA
	680	30×30	0.15	2.50	LOL681M30030□VA
	820	25×50	0.15	2.70	LOL821M25050□VA
	820	30×40	0.15	2.70	LOL821M30040□VA
	820	35×35	0.15	2.80	LOL821M35035□VA
	1000	30×40	0.15	3.60	LOL102M30040□VA
	1000	35×35	0.15	3.55	LOL102M35035□VA
	1200	30×50	0.15	3.80	LOL122M30050□VA
	1200	35×40	0.15	3.70	LOL122M35040□VA
1500	35×50	0.15	4.25	LOL152M35050□VA	
1800	35×60	0.15	4.60	LOL182M35060□VA	
2200	35×60	0.15	5.00	LOL222M35060□VA	
2700	35×70	0.15	5.90	LOL272M35070□VA	
3300	40×60	0.15	6.60	LOL332M40060□VA	
3900	40×80	0.15	7.10	LOL392M40080□VA	
4700	40×90	0.15	7.50	LOL472M40090□VA	
250 (300)	150	22×25	0.15	0.92	LOJ151M22025□VA
	180	22×30	0.15	1.00	LOJ181M22030□VA
	180	25×25	0.15	1.00	LOJ181M25025□VA
	220	22×35	0.15	1.25	LOJ221M22035□VA
	220	25×30	0.15	1.25	LOJ221M25030□VA

WV <sub>DC</sub> (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20℃ 120Hz	Ripple Current 85℃ 120Hz (Arms)	Catalog Part Number
250 (300)	270	22×35	0.15	1.30	LOJ271M22035□VA
	270	25×30	0.15	1.30	LOJ271M25030□VA
	270	30×25	0.15	1.30	LOJ271M30025□VA
	330	22×40	0.15	1.64	LOJ331M22040□VA
	330	25×30	0.15	1.64	LOJ331M25030□VA
	330	30×25	0.15	1.64	LOJ331M30025□VA
	390	22×45	0.15	1.90	LOJ391M22045□VA
	390	25×35	0.15	1.90	LOJ391M25035□VA
	470	22×50	0.15	2.20	LOJ471M22050□VA
	470	25×45	0.15	2.20	LOJ471M25045□VA
	470	30×35	0.15	2.20	LOJ471M30035□VA
	470	35×25	0.15	2.20	LOJ471M35025□VA
	560	25×45	0.15	2.40	LOJ561M25045□VA
	560	30×35	0.15	2.40	LOJ561M30035□VA
	680	30×40	0.15	2.80	LOJ681M30040□VA
	680	35×30	0.15	2.80	LOJ681M35030□VA
	820	30×45	0.15	3.20	LOJ821M30045□VA
	820	35×35	0.15	3.20	LOJ821M35035□VA
	1000	35×40	0.15	3.70	LOJ102M35040□VA
	1200	35×45	0.15	4.10	LOJ122M35045□VA
1500	35×50	0.15	4.60	LOJ152M35050□VA	
1800	35×60	0.15	4.80	LOJ182M35060□VA	
2200	35×60	0.15	5.40	LOJ222M35060□VA	
2700	35×70	0.15	6.70	LOJ272M35070□VA	
3300	40×60	0.15	7.90	LOJ332M40060□VA	
3900	40×80	0.15	8.70	LOJ392M40080□VA	
4700	40×100	0.15	10.50	LOJ472M40100□VA	
400 (450)	68	22×25	0.18	0.62	LOG680M22025□VA
	100	22×30	0.18	0.81	LOG101M22030□VA
	100	25×25	0.18	0.83	LOG101M25025□VA
	120	22×35	0.18	0.93	LOG121M22035□VA
	150	22×40	0.18	1.20	LOG151M22040□VA
	150	25×30	0.18	1.20	LOG151M25030□VA
	150	30×25	0.18	1.20	LOG151M30025□VA
	180	22×45	0.18	1.30	LOG181M22045□VA
	180	25×35	0.18	1.30	LOG181M25035□VA
	180	30×30	0.18	1.30	LOG181M30030□VA
	180	35×25	0.18	1.30	LOG181M35025□VA
	220	22×50	0.18	1.50	LOG221M22050□VA
	220	25×40	0.18	1.50	LOG221M25040□VA
	220	30×35	0.18	1.50	LOG221M30035□VA
	270	25×45	0.18	1.70	LOG271M25045□VA
	270	30×40	0.18	1.70	LOG271M30040□VA
	270	35×30	0.18	1.70	LOG271M35030□VA
	330	30×45	0.18	2.10	LOG331M30045□VA
	330	35×35	0.18	2.10	LOG331M35035□VA
	390	30×50	0.18	2.30	LOG391M30050□VA
390	35×40	0.18	2.30	LOG391M35040□VA	
470	35×50	0.18	2.70	LOG471M35050□VA	
560	35×50	0.18	3.00	LOG561M35050□VA	
680	35×65	0.18	3.40	LOG681M35065□VA	
820	40×60	0.18	3.90	LOG821M40060□VA	
1000	40×70	0.18	4.70	LOG102M40070□VA	
1200	40×75	0.18	5.20	LOG122M40075□VA	
1500	35×50	0.18	6.60	LOG152M35050□VA	
1800	45×80	0.18	7.60	LOG182M45080□VA	
2200	50×90	0.18	8.70	LOG222M50090□VA	
2700	50×105	0.18	10.00	LOG272M50105□VA	
3300	50×110	0.18	11.20	LOG332M50110□VA	

\* □Enter the appropriate terminal code

# LO SERIES

◆ Standard Ratings

WV <sub>DC</sub> (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20℃120Hz	Ripple Current 85℃120Hz (Arms)	Catalog Part Number
450 (500)	47	22×25	0.20	0.52	LOE470M22025□VA
	68	22×30	0.20	0.66	LOE680M22030□VA
	68	25×25	0.20	0.66	LOE680M25025□VA
	100	22×35	0.20	0.90	LOE101M22035□VA
	100	25×30	0.20	0.90	LOE101M25030□VA
	100	30×25	0.20	0.90	LOE101M30025□VA
	120	22×40	0.20	1.10	LOE121M22040□VA
	120	25×35	0.20	1.10	LOE121M25035□VA
	150	22×50	0.20	1.30	LOE151M22050□VA
	150	25×40	0.20	1.30	LOE151M25040□VA
	150	30×30	0.20	1.30	LOE151M30030□VA
	180	25×45	0.20	1.40	LOE181M25045□VA
	180	30×35	0.20	1.40	LOE181M30035□VA
	180	35×25	0.20	1.40	LOE181M35025□VA
	220	25×50	0.20	1.60	LOE221M25050□VA
	220	30×40	0.20	1.60	LOE221M30040□VA
	220	35×30	0.20	1.60	LOE221M35030□VA
	270	30×45	0.20	1.90	LOE271M30045□VA
	270	35×35	0.20	1.90	LOE271M35035□VA
	330	35×40	0.20	2.20	LOE331M35040□VA
	390	35×45	0.20	2.40	LOE391M35045□VA
	470	35×50	0.20	2.80	LOE471M35050□VA
	560	35×60	0.20	3.20	LOE561M35060□VA
	680	35×70	0.20	3.80	LOE681M35070□VA
	820	35×80	0.20	4.40	LOE821M35080□VA
	1000	40×80	0.20	5.30	LOE102M40080□VA
	1200	40×90	0.20	6.10	LOE122M40090□VA
	1500	45×80	0.20	6.90	LOE152M45080□VA
1800	50×85	0.20	8.30	LOE182M50085□VA	
2200	45×100	0.20	9.40	LOE222M45100□VA	
2700	50×110	0.20	10.90	LOE272M50110□VA	
500 (550)	47	22×25	0.20	0.51	LOC470M22025□VA
	68	22×30	0.20	0.65	LOC680M22030□VA
	68	25×25	0.20	0.65	LOC680M25025□VA
	100	25×35	0.20	0.86	LOC101M25035□VA
	100	30×25	0.20	0.86	LOC101M30025□VA
	120	25×40	0.20	0.95	LOC121M25040□VA
	120	30×30	0.20	0.95	LOC121M30030□VA
	120	35×25	0.20	0.95	LOC121M35025□VA
	150	25×45	0.20	1.10	LOC151M25045□VA
	150	30×35	0.20	1.10	LOC151M30035□VA
	180	30×40	0.20	1.40	LOC181M30040□VA
	180	35×30	0.20	1.30	LOC181M35030□VA
	220	30×45	0.20	1.60	LOC221M30045□VA
	220	35×35	0.20	1.50	LOC221M35035□VA
	270	30×50	0.20	1.80	LOC271M30050□VA
	270	35×40	0.20	1.70	LOC271M35040□VA
	330	30×50	0.20	2.00	LOC331M30050□VA
	330	35×45	0.20	1.90	LOC331M35045□VA
	390	35×50	0.20	2.30	LOC391M35050□VA
	470	35×60	0.20	2.50	LOC471M35060□VA
560	35×65	0.20	2.70	LOC561M35065□VA	
560	40×60	0.20	2.90	LOC561M40060□VA	
680	35×80	0.20	3.50	LOC681M35080□VA	
680	40×70	0.20	3.50	LOC681M40070□VA	

WV <sub>DC</sub> (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20℃120Hz	Ripple Current 85℃120Hz (Arms)	Catalog Part Number
500 (550)	820	35×90	0.20	4.00	LOC821M35090□VA
	820	40×75	0.20	3.90	LOC821M40075□VA
	1000	40×90	0.20	4.70	LOC102M40090□VA
	1200	40×100	0.20	5.40	LOC122M40100□VA
	1500	50×90	0.20	6.50	LOC152M50090□VA
	1800	50×105	0.20	7.60	LOC182M50105□VA
	550 (600)	180	30×50	0.20	1.30
220		30×60	0.20	1.50	LOZ221M30060□VA
270		35×45	0.20	1.60	LOZ271M35045□VA
270		35×60	0.20	1.70	LOZ271M35060□VA
330		30×60	0.20	1.80	LOZ331M30060□VA
330		35×55	0.20	1.90	LOZ331M35055□VA
390		35×65	0.20	2.30	LOZ391M35065□VA
390		35×70	0.20	2.40	LOZ391M35070□VA
470		35×80	0.20	2.80	LOZ471M35080□VA
560		35×90	0.20	3.10	LOZ561M35090□VA
680		40×90	0.20	3.70	LOZ681M40090□VA
820		45×85	0.20	4.30	LOZ821M45085□VA
1000		45×100	0.20	5.10	LOZ102M45100□VA
1200	50×90	0.20	5.60	LOZ122M50090□VA	
1500	50×105	0.20	6.60	LOZ152M50105□VA	

\* □Enter the appropriate terminal code

\*Please ask for advice for other sizes.

\*Aluminum electrolytic capacitor will emit heat when ripple current is applied, the performance will deteriorate when temp. rises. the useful life will be half of original life when temp rises every 5°C. Please reduce the ripple current when using capacitor.