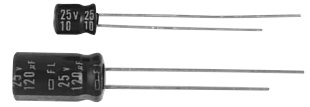


FL Series

- Long life and high reliability for $\phi 4 \times 5L$ to $\phi 8 \times 7L$ mm range
- Endurance with ripple current : 105°C 3000 hours
- Suitable for long life and high reliability required products
- Solvent-proof type (see PRECAUTIONS AND GUIDELINES)
- Pb-free design

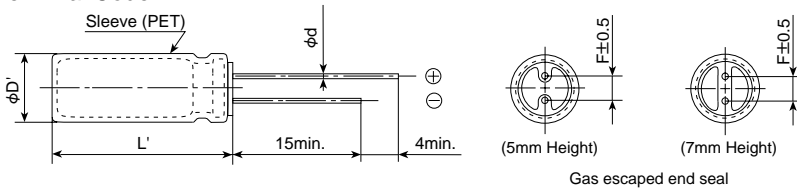


◆ SPECIFICATIONS

Items	Characteristics														
Category Temperature Range	-40 to +105°C														
Rated Voltage Range	6.3 to 50V _{dc}														
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)														
Leakage Current	I=0.03CV 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)	<table border="1"> <tr> <td>Rated voltage (V_{dc})</td> <td>6.3V</td> <td>10V</td> <td>16V</td> <td>25V</td> <td>35V</td> <td>50V</td> </tr> <tr> <td>tanδ (Max.)</td> <td>0.50</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.25</td> </tr> </table> (at 20°C, 120Hz)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	tanδ (Max.)	0.50	0.40	0.35	0.30	0.25	0.25
Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V									
tanδ (Max.)	0.50	0.40	0.35	0.30	0.25	0.25									
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 3000 hours at 105°C. <table border="1"> <tr> <td>Capacitance change</td> <td>≤±30% of the initial value</td> </tr> <tr> <td>D.F. (tanδ)</td> <td>≤300% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤The initial specified value</td> </tr> </table>	Capacitance change	≤±30% of the initial value	D.F. (tanδ)	≤300% of the initial specified value	Leakage current	≤The initial specified value								
Capacitance change	≤±30% of the initial value														
D.F. (tanδ)	≤300% 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 1000 hours at 105°C without voltage applied. <table border="1"> <tr> <td>Capacitance change</td> <td>≤±20% of the initial value</td> </tr> <tr> <td>D.F. (tanδ)</td> <td>≤200% of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤The initial specified value</td> </tr> </table>	Capacitance change	≤±20% of the initial value	D.F. (tanδ)	≤200% of the initial specified value	Leakage current	≤The initial specified value								
Capacitance change	≤±20% of the initial value														
D.F. (tanδ)	≤200% of the initial specified value														
Leakage current	≤The initial specified value														

◆ DIMENSIONS [mm]

- Terminal Code : E



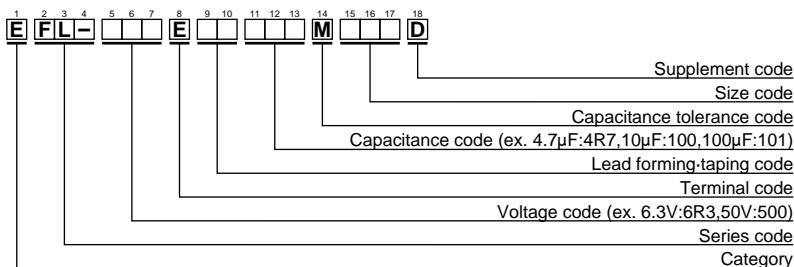
5mm Height

φD	4	5	6.3	8
φd	0.45	0.45	0.45	0.45
F	1.5	2.0	2.5	2.5
φD'	φD+0.5max.			
L'	L+1.0max.			

7mm Height

φD	4	5	6.3	8
φd	0.45	0.45	0.45	0.45
F	1.5	2.0	2.5	3.5
φD'	φD+0.5max.			
L'	L+1.0max.			

◆ PART NUMBERING SYSTEM



Please refer to "A guide to global code (radial lead type)"

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/105°C,100kHz)	Part No.
6.3	33	4×5	0.50	5.4	37	EFL-6R3E□□330MD05D
	47	4×7	0.50	4.5	44	EFL-6R3E□□470MD07D
	56	5×5	0.50	3.1	57	EFL-6R3E□□560ME05D
	82	5×7	0.50	2.5	70	EFL-6R3E□□820ME07D
	100	6.3×5	0.50	1.7	82	EFL-6R3E□□101MF05D
	150	6.3×7	0.50	1.3	116	EFL-6R3E□□151MF07D
	220	8×5	0.50	1.5	110	EFL-6R3E□□221MH05D
270	8×7	0.50	0.90	162	EFL-6R3E□□271MH07D	
10	22	4×5	0.40	5.4	37	EFL-100E□□220MD05D
	33	4×7	0.40	4.5	44	EFL-100E□□330MD07D
	33	5×5	0.40	3.1	57	EFL-100E□□330ME05D
	47	5×7	0.40	2.5	70	EFL-100E□□470ME07D
	68	6.3×5	0.40	1.7	82	EFL-100E□□680MF05D
	100	6.3×7	0.40	1.3	116	EFL-100E□□101MF07D
	150	8×5	0.40	1.5	110	EFL-100E□□151MH05D
220	8×7	0.40	0.90	162	EFL-100E□□221MH07D	
16	15	4×5	0.35	5.4	37	EFL-160E□□150MD05D
	22	4×7	0.35	4.5	44	EFL-160E□□220MD07D
	22	5×5	0.35	3.1	57	EFL-160E□□220ME05D
	33	5×7	0.35	2.5	70	EFL-160E□□330ME07D
	47	6.3×5	0.35	1.7	82	EFL-160E□□470MF05D
	68	6.3×7	0.35	1.3	116	EFL-160E□□680MF07D
	100	8×5	0.35	1.5	110	EFL-160E□□101MH05D
150	8×7	0.35	0.90	162	EFL-160E□□151MH07D	
25	10	4×5	0.30	5.4	37	EFL-250E□□100MD05D
	15	4×7	0.30	4.5	44	EFL-250E□□150MD07D
	15	5×5	0.30	3.1	57	EFL-250E□□150ME05D
	22	5×7	0.30	2.5	70	EFL-250E□□220ME07D
	33	6.3×5	0.30	1.7	82	EFL-250E□□330MF05D
	56	6.3×7	0.30	1.3	116	EFL-250E□□560MF07D
	68	8×5	0.30	1.5	110	EFL-250E□□680MH05D
100	8×7	0.30	0.90	162	EFL-250E□□101MH07D	
35	4.7	4×5	0.25	5.4	37	EFL-350E□□4R7MD05D
	6.8	4×7	0.25	4.5	44	EFL-350E□□6R8MD07D
	10	5×5	0.25	3.1	57	EFL-350E□□100ME05D
	10	5×7	0.25	2.5	70	EFL-350E□□100ME07D
	22	6.3×5	0.25	1.7	82	EFL-350E□□220MF05D
	22	6.3×7	0.25	1.3	116	EFL-350E□□220MF07D
	33	8×5	0.25	1.5	110	EFL-350E□□330MH05D
47	8×7	0.25	0.90	162	EFL-350E□□470MH07D	
50	0.47	4×5	0.25	34	14	EFL-500E□□R47MD05D
	1	4×5	0.25	19	18	EFL-500E□□1R0MD05D
	2.2	4×5	0.25	14	22	EFL-500E□□2R2MD05D
	3.3	4×5	0.25	11	26	EFL-500E□□3R3MD05D
	4.7	4×7	0.25	9.0	30	EFL-500E□□4R7MD07D
	4.7	5×5	0.25	6.0	40	EFL-500E□□4R7ME05D
	6.8	5×7	0.25	4.8	50	EFL-500E□□6R8ME07D
	10	6.3×5	0.25	2.9	63	EFL-500E□□100MF05D
	15	6.3×7	0.25	2.2	90	EFL-500E□□150MF07D
	22	8×5	0.25	2.6	84	EFL-500E□□220MH05D
22	8×7	0.25	1.6	120	EFL-500E□□220MH07D	

□□ : Lead forming / Taping code

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF)	Frequency(Hz)			
	120	1k	10k	100k
to 3.3 (and 50WV (Small capacitance) items)	0.20	0.66	0.90	1.00
4.7 to 6.8	0.35	0.70	0.90	1.00
10 to 180	0.40	0.75	0.90	1.00
220 to 270	0.50	0.85	0.94	1.00