

**WK series**

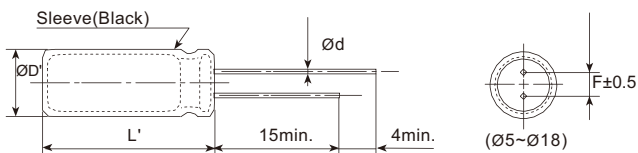
- Standard series for general purpose
- Endurance : 2,000 hours at 85 °C
- **RoHS Compliant**



**SPECIFICATIONS**

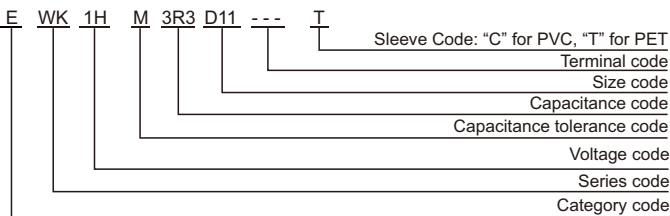
Items	Characteristics														
Category Temperature Range	-40~+85°C(6.3 to 100 V <sub>dc</sub> )							-25~+85°C(160 to 450 V <sub>dc</sub> )							
Rated Working Voltage Range	6.3~450 V <sub>dc</sub>														
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)														
Leakage Current	6.3~100 V <sub>dc</sub> I≤0.01CV or 3μA, whichever is greater.			160~450 V <sub>dc</sub> I≤0.03CV+10μA				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 <sub>dc</sub> )	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
	Dissipation Factor (max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.20	0.20	0.24	0.24	0.24
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 <sub>dc</sub> )	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
	Z(-25°C)/Z(+20°C)	5	4	3	2			3			6				
	Z(-40°C)/Z(+20°C)	12	10	8	5	4	3			-					
(at 120Hz)															
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 85°C.														
	Capacitance Change	≤±20% of the initial value													
	Dissipation Factor	≤200% of 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	≤±20% of the initial value													
	Dissipation Factor	≤200% of the initial specified value													
Leakage Current ≤200% of the initial specified value															

**DIMENSIONS[mm]**



øD	5	6.3	8	10	12.5	16	18
ød	0.5	0.5	0.5	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
øD'	øD+0.5max.						
L'	L+2max.						

**PART NUMBERING SYSTEM**



**RATED RIPPLE CURRENT MULTIPLIERS**

Frequency correction factor for ripple current

Freq.(Hz)	50	120	300	1k	10k	100k
Cap.<10	0.65	1.00	1.35	1.75	2.30	2.50
10≤Cap.<100	0.75	1.00	1.25	1.50	1.75	1.80
100≤Cap.≤1000	0.80	1.00	1.15	1.30	1.40	1.50
Cap.>1000	0.85	1.00	1.03	1.05	1.08	1.08

**WK series**

■ STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Size ΦD×L(mm)	Rated ripple current (mA <sub>RMS</sub> /85°C, 120Hz)	Part Number
6.3	33	5×11	65	EWK0JM330D11---T
	47	5×11	80	EWK0JM470D11---T
	100	5×11	135	EWK0JM101D11---T
	220	5×12	220	EWK0JM221D12---T
	330	6.3×11	280	EWK0JM331E11---T
	470	6.3×12	360	EWK0JM471E12---T
	1000	8×12	590	EWK0JM102F12---T
	2200	10×20	1000	EWK0JM222G20---T
	3300	10×25	1200	EWK0JM332G25---T
	4700	12.5×20	1550	EWK0JM472W20---T
	6800	12.5×25	1920	EWK0JM682W25---T
	10000	16×25	2370	EWK0JM103L25---T
15000	16×35	2880	EWK0JM153L35---T	
22000	18×40	3350	EWK0JM223M40---T	
10	22	5×11	60	EWK1AM220D11---T
	33	5×11	75	EWK1AM330D11---T
	47	5×11	95	EWK1AM470D11---T
	100	5×11	140	EWK1AM101D11---T
	220	5×12	240	EWK1AM221D12---T
	330	6.3×11	310	EWK1AM331E11---T
	470	6.3×12	400	EWK1AM471E12---T
	1000	10×13	660	EWK1AM102G13---T
	2200	10×20	1090	EWK1AM222G20---T
	3300	12.5×20	1450	EWK1AM332W20---T
	4700	12.5×25	1800	EWK1AM472W25---T
	6800	16×25	2250	EWK1AM682L25---T
10000	16×35	2710	EWK1AM103L35---T	
15000	18×35	3120	EWK1AM153M35---T	
16	10	5×11	50	EWK1CM100D11---T
	22	5×11	65	EWK1CM220D11---T
	33	5×11	80	EWK1CM330D11---T
	47	5×11	115	EWK1CM470D11---T
	100	5×11	175	EWK1CM101D11---T
	220	6.3×11	280	EWK1CM221E11---T
	330	8×11	380	EWK1CM331F11---T
	470	8×11	460	EWK1CM471F11---T
	1000	10×16	800	EWK1CM102G16---T
	2200	12.5×20	1320	EWK1CM222W20---T
	3300	12.5×25	1670	EWK1CM332W25---T
	4700	16×25	2120	EWK1CM472L25---T
6800	16×30	2550	EWK1CM682L30---T	
25	10	5×11	45	EWK1EM100D11---T
	22	5×11	70	EWK1EM220D11---T
	33	5×11	98	EWK1EM330D11---T
	47	5×11	120	EWK1EM470D11---T
	100	6.3×11	190	EWK1EM101E11---T
	220	8×11	330	EWK1EM221F11---T
	330	8×12	440	EWK1EM331F12---T
	470	10×13	550	EWK1EM471G13---T
	1000	10×20	970	EWK1EM102G20---T
	2200	12.5×25	1570	EWK1EM222W25---T
	3300	16×25	2000	EWK1EM332L25---T
	4700	16×30	2450	EWK1EM472L30---T
35	10	5×11	55	EWK1VM100D11---T
	22	5×11	90	EWK1VM220D11---T
	33	5×11	110	EWK1VM330D11---T
	47	5×11	135	EWK1VM470D11---T
	100	6.3×11	215	EWK1VM101E11---T
	220	8×12	385	EWK1VM221F12---T
	330	10×13	500	EWK1VM331G13---T
	470	10×16	680	EWK1VM471G16---T
	1000	12.5×20	1180	EWK1VM102W20---T

WV (V <sub>dc</sub> )	Cap (μF)	Size ΦD×L(mm)	Rated ripple current (mA <sub>RMS</sub> /85°C, 120Hz)	Part Number
35	2200	16×25	1810	EWK1VM222L25---T
	3300	16×35	2300	EWK1VM332L35---T
	4700	18×35	2750	EWK1VM472M35---T
50	0.1	5×11	1.3	EWK1HMR10D11---T
	0.22	5×11	2.9	EWK1HMR22D11---T
	0.33	5×11	4.3	EWK1HMR33D11---T
	0.47	5×11	7	EWK1HMR47D11---T
	1	5×11	17	EWK1HM010D11---T
	2.2	5×11	28	EWK1HM2R2D11---T
	3.3	5×11	35	EWK1HM3R3D11---T
	4.7	5×11	41	EWK1HM4R7D11---T
	10	5×11	60	EWK1HM100D11---T
	22	5×11	95	EWK1HM220D11---T
	33	6.3×11	130	EWK1HM330E11---T
	47	6.3×11	160	EWK1HM470E11---T
	100	8×11	270	EWK1HM101F11---T
	220	10×16	435	EWK1HM221G16---T
	330	10×20	590	EWK1HM331G20---T
	470	10×20	760	EWK1HM471G20---T
	1000	12.5×25	1350	EWK1HM102W25---T
	2200	16×35	2110	EWK1HM222L35---T
3300	18×35	2550	EWK1HM332M35---T	
63	4.7	5×11	45	EWK1JM4R7D11---T
	10	5×11	70	EWK1JM100D11---T
	22	6.3×11	110	EWK1JM220E11---T
	33	6.3×11	140	EWK1JM330E11---T
	47	6.3×12	190	EWK1JM470E12---T
	100	10×13	300	EWK1JM101G13---T
	220	10×16	490	EWK1JM221G16---T
	330	10×20	710	EWK1JM331G20---T
	470	12.5×20	900	EWK1JM471W20---T
	1000	16×25	1350	EWK1JM102L25---T
	2200	18×35	2330	EWK1JM222M35---T
	100	0.1	5×11	2.1
0.22		5×11	4.7	EWK1KMR22D11---T
0.33		5×11	7	EWK1KMR33D11---T
0.47		5×11	10	EWK1KMR47D11---T
1		5×11	21	EWK1KM010D11---T
2.2		5×11	35	EWK1KM2R2D11---T
3.3		5×11	45	EWK1KM3R3D11---T
4.7		5×11	50	EWK1KM4R7D11---T
10		6.3×11	75	EWK1KM100E11---T
22		8×11	135	EWK1KM220F11---T
33		8×12	185	EWK1KM330F12---T
47		10×13	235	EWK1KM470G13---T
100		10×20	380	EWK1KM101G20---T
220		12.5×25	630	EWK1KM221W25---T
330		12.5×30	760	EWK1KM331W30---T
470		16×30	1000	EWK1KM471L30---T
1000		18×40	1350	EWK1KM102M40---T
160		0.47	6.3×11	10
	1	6.3×11	15	EWK2CM010E11---T
	2.2	6.3×11	30	EWK2CM2R2E11---T
	3.3	6.3×11	40	EWK2CM3R3E11---T
	4.7	6.3×11	48	EWK2CM4R7E11---T
	10	8×12	80	EWK2CM100F12---T
	10	10×12	94	EWK2CM100G12---T
	22	10×12	130	EWK2CM220G12---T
	22	10×16	150	EWK2CM220G16---T
	22	10×20	170	EWK2CM220G20---T
	33	10×16	180	EWK2CM330G16---T
	33	10×20	210	EWK2CM330G20---T
47	10×20	240	EWK2CM470G20---T	

Radial Type

**WK series**

■ STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	Rated ripple current (mA <sub>RMS</sub> /85°C, 120Hz)	Part Number
160	47	12.5×20	280	EWK2CM470W20---T
	68	12.5×20	360	EWK2CM680W20---T
	100	12.5×25	470	EWK2CM101W25---T
	150	16×20	520	EWK2CM151L20---T
	180	16×25	600	EWK2CM181L25---T
	220	16×30	780	EWK2CM221L30---T
	270	18×30	860	EWK2CM271M30---T
	330	18×35	1000	EWK2CM331M35---T
	390	18×35	1020	EWK2CM391M35---T
	470	18×40	1220	EWK2CM471M40---T
200	0.47	6.3×11	10	EWK2DMR47E11---T
	1	6.3×11	15	EWK2DM010E11---T
	2.2	6.3×11	34	EWK2DM2R2E11---T
	3.3	6.3×11	45	EWK2DM3R3E11---T
	4.7	6.3×11	55	EWK2DM4R7E11---T
	4.7	8×12	60	EWK2DM4R7F12---T
	10	10×12	100	EWK2DM100G12---T
	22	10×20	170	EWK2DM220G20---T
	33	10×20	205	EWK2DM330G20---T
	47	12.5×20	270	EWK2DM470W20---T
	68	12.5×25	370	EWK2DM680W25---T
	100	16×25	475	EWK2DM101L25---T
	150	16×25	550	EWK2DM151L25---T
	180	18×25	620	EWK2DM181M25---T
	220	18×35	810	EWK2DM221M35---T
	270	18×35	870	EWK2DM271M35---T
330	18×35	1000	EWK2DM331M35---T	
330	18×40	1020	EWK2DM331M40---T	
250	0.47	6.3×11	10	EWK2EMR47E11---T
	1	6.3×11	16	EWK2EM010E11---T
	2.2	6.3×11	34	EWK2EM2R2E11---T
	3.3	6.3×11	42	EWK2EM3R3E11---T
	3.3	8×12	46	EWK2EM3R3F12---T
	4.7	6.3×11	50	EWK2EM4R7E11---T
	4.7	8×12	55	EWK2EM4R7F12---T
	10	10×12	100	EWK2EM100G12---T
	10	10×16	105	EWK2EM100G16---T
	22	10×20	170	EWK2EM220G20---T
	33	10×20	200	EWK2EM330G20---T
	33	12.5×20	230	EWK2EM330W20---T
	47	12.5×20	270	EWK2EM470W20---T
	47	12.5×25	295	EWK2EM470W25---T
	68	16×25	382	EWK2EM680L25---T
	100	16×25	450	EWK2EM101L25---T
	100	16×30	515	EWK2EM101L30---T
	120	16×30	530	EWK2EM121L30---T
150	16×30	570	EWK2EM151L30---T	
180	18×30	620	EWK2EM181M30---T	
350	0.47	6.3×11	15	EWK2VMR47E11---T
	1	6.3×11	22	EWK2VM010E11---T
	2.2	8×12	38	EWK2VM2R2F12---T
	3.3	8×12	46	EWK2VM3R3F12---T
	4.7	10×12	65	EWK2VM4R7G12---T
	10	10×12	90	EWK2VM100G12---T
	10	10×16	100	EWK2VM100G16---T
	10	10×20	120	EWK2VM100G20---T
	22	12.5×20	185	EWK2VM220W20---T
	33	16×25	275	EWK2VM330L25---T
	47	16×25	325	EWK2VM470L25---T
	68	16×25	405	EWK2VM680L25---T
100	18×30	530	EWK2VM101M30---T	
400	1	6.3×11	22	EWK2GM010E11---T
	2.2	8×12	38	EWK2GM2R2F12---T
	3.3	10×12	54	EWK2GM3R3G12---T
	4.7	10×12	60	EWK2GM4R7G12---T
	4.7	10×16	75	EWK2GM4R7G16---T

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	Rated ripple current (mA <sub>RMS</sub> /85°C, 120Hz)	Part Number
400	10	10×16	100	EWK2GM100G16---T
	10	10×20	120	EWK2GM100G20---T
	22	12.5×25	205	EWK2GM220W25---T
	33	16×25	275	EWK2GM330L25---T
	47	16×25	325	EWK2GM470L25---T
	47	16×30	350	EWK2GM470L30---T
	56	16×30	385	EWK2GM560L30---T
	68	18×25	420	EWK2GM680M25---T
	82	18×30	475	EWK2GM820M30---T
	100	18×35	545	EWK2GM101M35---T
450	1	8×12	16	EWK2WM010F12---T
	2.2	8×12	32	EWK2WM2R2F12---T
	2.2	10×12	35	EWK2WM2R2G12---T
	3.3	10×12	40	EWK2WM3R3G12---T
	3.3	10×16	44	EWK2WM3R3G16---T
	4.7	10×12	50	EWK2WM4R7G12---T
	4.7	10×16	58	EWK2WM4R7G16---T
	4.7	10×20	65	EWK2WM4R7G20---T
	10	10×20	80	EWK2WM100G20---T
	10	12.5×20	92	EWK2WM100W20---T
	22	12.5×25	150	EWK2WM220W25---T
	22	16×25	165	EWK2WM220L25---T
	33	16×30	215	EWK2WM330L30---T
	47	16×30	260	EWK2WM470L30---T
	47	16×35	280	EWK2WM470L35---T
	68	18×30	370	EWK2WM680M30---T
	82	18×35	390	EWK2WM820M35---T
	100	18×40	420	EWK2WM101M40---T

※ Specifications subject to change without notice.