

FEATURES

- Load life of 5,000 hours application of ripple current at +105°C.
- High reliability products.



SPECIFICATIONS

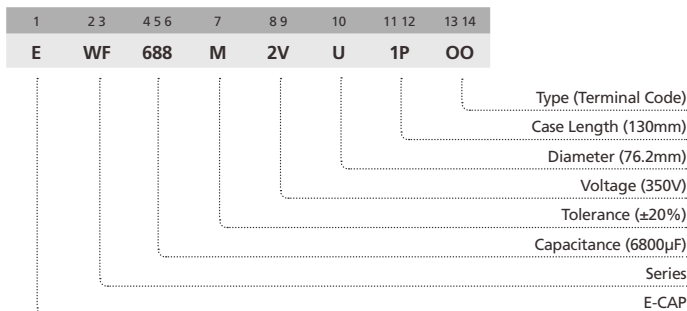
Item	Performance Characteristics	
Operating Temperature Range	-40 to +105°C	-25 to +105°C
Rated Working Voltage Range	10 to 100V	160 to 500V
Nominal Capacitance Range	330 to 390000µF	
Capacitance Tolerance	±20% at 120Hz, +20°C	
Leakage Current	I ≤ 0.02CV (µA) or 5 (mA) whichever is smaller measured after 5 minutes application of rated working voltage at +20°C	
tan δ (120Hz, +20°C)	The values shown in the STANDARD RATINGS tables	
Low Temperature Characteristics	Impedance ratio max. at 120Hz	
	Working Voltage (V)	10~100 160~500
	Z-25°C / Z+20°C	- 8
	Z-40°C / Z+20°C	15 -
High Temperature Loading	Test time : 5,000 hours	Post test requirements at +20°C
	Test temperature : +105°C	Leakage current : ≤ Initial specified value
	Test conditions : Rated DC working voltage with rated ripple current	Cap. change : within ±20% of the initial measured value
		tan δ : ≤ 200% of the initial specified value
Shelf Life	At +105°C no voltage applied after 1,000 hours and then being stabilized at +20°C the capacitors shall meet the following limits	
	Leakage current : ≤ Initial specified value	
	Cap. change : within ±20% of the initial measured value	
	tan δ : ≤ 200% of the initial specified value	
Industrial Standard	JIS C - 5101-4 (IEC 60384-4)	

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Coefficient	Freq. (Hz)					
Rated Voltage	50	120	300	1k	10k~	
<160V	0.80	1.00	1.08	1.15	1.15	
≥160V	0.80	1.00	1.08	1.15	1.20	

PART NUMBER SYSTEM (EXAMPLE : 350V 6800µF)



STANDARD RATINGS

Voltage (Code)		10V (1A)			16V (1C)			25V (1E)		
SV		13			20			32		
Cap. (µF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
12000	129							35 x 80	0.35	3.3
15000	159				35 x 50	0.45	2.9	35 x 80	0.35	3.7
18000	189				35 x 80	0.45	3.5	35 x 80	0.35	4.0
22000	229				35 x 80	0.45	3.9	35 x 80	0.35	4.5
27000	279	35 x 80	0.45	4.3	35 x 80	0.45	4.3	35 x 100	0.40	5.0
33000	339	35 x 80	0.45	4.7	35 x 100	0.50	4.8	35 x 120	0.40	5.9
39000	399	35 x 80	0.45	5.3	35 x 100	0.50	5.3	51 x 80	0.40	6.5
47000	479	35 x 100	0.45	6.1	35 x 120	0.50	6.2	51 x 100	0.40	7.9
56000	569	35 x 100	0.50	6.2	51 x 80	0.60	6.3	51 x 120	0.40	8.8
68000	689	35 x 120	0.60	6.8	51 x 100	0.60	7.6	51 x 120	0.50	9.1
82000	829	51 x 80	0.60	7.8	51 x 120	0.70	8.3	63.5 x 100	0.50	10.6
100000	10T	51 x 100	0.70	8.5	51 x 120	0.70	9.2	63.5 x 120	0.60	11.4
120000	12T	51 x 100	0.70	9.5	63.5 x 100	0.80	9.9	76 x 100	0.60	12.8
150000	15T	63.5 x 100	0.80	11.0	76 x 100	0.80	12.3	76 x 120	0.75	13.7
180000	18T	63.5 x 100	0.80	12.1	76 x 120	0.80	14.5	76 x 140	0.76	16.1
220000	22T	76 x 100	1.00	13.2	76 x 140	1.00	15.2	90 x 140	1.00	16.6
270000	27T	76 x 120	1.20	14.4	90 x 140	1.20	16.8			
330000	33T	76 x 140	1.20	17.0						
390000	39T	90 x 140	1.40	18.6						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

Voltage (Code)		35V (1V)			50V (1H)			63V (1J)		
SV		44			63			79		
Cap. (µF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
2700	278							35 x 50	0.19	1.9
3300	338							35 x 50	0.15	2.1
3900	398				35 x 50	0.20	2.0	35 x 80	0.20	2.7
4700	478				35 x 50	0.25	2.2	35 x 80	0.20	2.9
5600	568				35 x 80	0.25	2.8	35 x 80	0.20	3.2
6800	688				35 x 80	0.25	3.0	35 x 80	0.20	3.5
8200	828	35 x 80	0.30	3.0	35 x 80	0.25	3.3	35 x 100	0.25	4.2
10000	109	35 x 80	0.30	3.3	35 x 80	0.25	3.7	35 x 120	0.25	4.3
12000	129	35 x 80	0.30	3.6	35 x 100	0.25	4.4	51 x 80	0.25	4.8
15000	159	35 x 80	0.30	4.1	35 x 120	0.30	4.7	51 x 100	0.25	5.9
18000	189	35 x 100	0.30	4.8	51 x 80	0.35	4.8	51 x 120	0.30	6.3
22000	229	35 x 120	0.35	5.2	51 x 100	0.35	5.9	51 x 120	0.30	6.7
27000	279	51 x 80	0.40	5.9	51 x 120	0.35	7.0	63.5 x 120	0.30	8.8
33000	339	51 x 100	0.40	6.6	63.5 x 100	0.40	7.6	76 x 120	0.35	10.0
39000	399	51 x 120	0.40	7.8	63.5 x 120	0.40	8.9	76 x 140	0.35	12.5
47000	479	51 x 120	0.45	8.0	63.5 x 120	0.40	9.8	90 x 140	0.40	13.8
56000	569	63.5 x 100	0.45	9.2	76 x 120	0.40	11.9			
68000	689	63.5 x 120	0.45	11.0	76 x 140	0.45	13.1			
82000	829	76 x 120	0.50	12.7	90 x 140	0.50	14.8			
100000	10T	76 x 140	0.60	13.5						
120000	12T	90 x 140	0.60	16.1						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

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STANDARD RATINGS

Voltage (Code)		80V (1K)			100V (2A)			160V (2C)		
SV		100			125			200		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
680	687							35 x 50	0.15	1.1
820	827							35 x 80	0.15	1.2
1000	108							35 x 80	0.15	1.3
1200	128				35 x 50	0.15	1.4	35 x 80	0.15	1.5
1500	158				35 x 80	0.15	1.6	35 x 80	0.15	1.7
1800	188				35 x 80	0.15	1.8	35 x 100	0.15	2.0
2200	228	35 x 50	0.15	1.9	35 x 80	0.15	2.0	35 x 120	0.15	2.3
2700	278	35 x 80	0.15	2.2	35 x 80	0.15	2.4	35 x 120	0.15	2.7
3300	338	35 x 80	0.15	2.5	35 x 100	0.15	2.8	51 x 100	0.15	3.3
3900	398	35 x 80	0.15	2.9	35 x 120	0.15	3.1	51 x 120	0.15	3.8
4700	478	35 x 100	0.15	3.1	51 x 80	0.15	3.6	51 x 120	0.15	4.2
5600	568	35 x 100	0.15	3.6	51 x 100	0.15	4.3	51 x 120	0.15	4.7
6800	688	35 x 120	0.20	4.1	51 x 120	0.15	5.0	63.5 x 120	0.15	5.7
8200	828	51 x 80	0.20	4.8	51 x 120	0.15	5.5	76 x 100	0.20	6.4
10000	109	51 x 100	0.20	5.6	63.5 x 100	0.15	6.4	76 x 120	0.20	6.6
12000	129	51 x 100	0.20	6.1	63.5 x 120	0.20	6.6	76 x 140	0.20	7.8
15000	159	51 x 120	0.20	7.4	76 x 100	0.20	7.5	90 x 140	0.20	9.5
18000	189	63.5 x 120	0.25	8.0	76 x 120	0.25	8.0			
22000	229	76 x 100	0.25	9.1	76 x 140	0.25	9.4			
27000	279	76 x 120	0.30	9.7	90 x 140	0.30	10.4			
33000	339	76 x 140	0.30	11.5						
39000	399	90 x 140	0.30	12.5						

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

Voltage (Code)		200V (2G)			250V (2W)			350V (2H)		
SV		250			300			400		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
330	337				35 x 50	0.15	0.7			
390	397				35 x 80	0.15	0.8			
470	477	35 x 50	0.15	0.9	35 x 80	0.15	0.9			
560	567	35 x 80	0.15	1.0	35 x 80	0.15	1.0			
680	687	35 x 80	0.15	1.1	35 x 100	0.15	1.2			
820	827	35 x 80	0.15	1.3	35 x 100	0.15	1.4	51 x 80	0.25	3.3
1000	108	35 x 80	0.15	1.5	35 x 120	0.15	1.6			
1200	128	35 x 100	0.15	1.7	51 x 80	0.15	1.8			
1500	158	35 x 120	0.15	1.9	51 x 90	0.15	2.1	51 x 90	0.25	5.2
1800	188	35 x 120	0.15	2.2	51 x 100	0.15	2.4			
2200	228	51 x 80	0.15	2.7	51 x 110	0.15	2.7	51 x 110	0.25	7.0
2700	278	51 x 100	0.15	3.2	63.5 x 90	0.15	3.2	51 x 130	0.25	8.4
								63.5 x 90	0.25	8.1
3300	338	51 x 120	0.15	3.5	63.5 x 120	0.15	4.0	51 x 150	0.25	9.9
3900	398	63.5 x 100	0.15	4.0	76 x 90	0.15	4.2	63.5 x 130	0.25	11.5
								76 x 90	0.25	10.8
4700	478	63.5 x 120	0.15	4.7	76 x 120	0.15	5.2			
5600	568	76 x 100	0.15	5.3	76 x 140	0.15	6.1	63.5 x 150	0.25	14.7
6800	688	76 x 120	0.15	6.3	76 x 140	0.15	6.7	76 x 140	0.25	17.4
8200	828	76 x 140	0.20	6.4				76 x 150	0.25	19.6
10000	109	90 x 140	0.20	7.7				76 x 190	0.25	23.0
15000	159							90 x 190	0.25	30.6
22000	229							90 x 260	0.25	42.7

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)

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STANDARD RATINGS

Voltage (Code)		400 (2G)			450V (2W)			500V (2H)		
SV		450			500			550		
Cap. (μF)	Code	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current	Case Size	tan δ	Ripple Current
470	477							51 x 80	0.25	2.4
560	567				51 x 80	0.25	2.6			
680	687	51 x 80	0.25	3.0						
820	827							51 x 90	0.25	3.6
1000	108				51 x 90	0.25	4.0	51 x 110	0.25	4.4
1200	128	51 x 90	0.25	4.7	51 x 110	0.25	4.8	51 x 130	0.25	5.2
1500	158							63.5 x 90	0.25	5.0
1800	188	51 x 110	0.25	6.3	51 x 130	0.25	6.4	51 x 150	0.25	6.3
					63.5 x 90	0.25	6.2	63.5 x 110	0.25	6.8
2200	228	51 x 130	0.25	7.5	51 x 150	0.25	7.6			
		63.5 x 90	0.25	7.3	63.5 x 110	0.25	7.5			
2700	278	51 x 150	0.25	8.9	63.5 x 130	0.25	8.9	63.5 x 150	0.25	9.6
		63.5 x 110	0.25	8.8	76 x 110	0.25	9.1	76 x 110	0.25	9.2
3300	338	63.5 x 130	0.25	10.5	63.5 x 150	0.25	10.6			
		76 x 90	0.25	9.9	76 x 110	0.25	10.6			
3900	398				76 x 130	0.25	11.9	76 x 150	0.25	12.7
								90 x 130	0.25	11.9
4700	478	63.5 x 150	0.25	13.4	76 x 140	0.25	13.6			
		76 x 130	0.25	13.9						
5600	568				76 x 150	0.25	13.8			
6800	688	76 x 150	0.25	17.9	76 x 190	0.25	17.3	90 x 190	0.25	18.8
		90 x 130	0.25	17.2	90 x 150	0.25	16.7			
8200	828	76 x 190	0.25	20.8						
		90 x 150	0.25	20.1						
10000	109				90 x 200	0.25	23.3	90 x 260	0.25	26.3
12000	129	90 x 190	0.25	27.4						
15000	159				90 x 250	0.25	31.7			

Maximum Allowable Ripple Current (Arms) at 105°C 120Hz
tan δ at 20°C 120Hz

Case Size ΦD x L (mm)