

FEATURES

1. Low impedance for high frequency.
2. Radio type for switching power supply and anti-solvent.

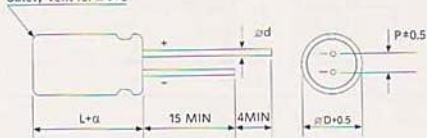
SPECIFICATIONS

Item	Performance Characteristics							
Operating Temperature Range	-55 to +105°C	-25 to +105°C						
Rated Working Voltage Range	6.3 to 100V	160 to 450V						
Nominal Capacitance Range	0.47~15000(μF)							
Capacitance Tolerance	±20%(120Hz,+20°C)(M)							
Leakage Current	1±0.03CV or 4(μA) after 1 minutes whichever is greater measured with rated working voltage at +20°C	CV≤1000:1=0.1CV+40(μA) max CV>1000:1=0.04CV+100(μA) max after 1 minutes application of rated working voltage at +20°C						
Dissipation Factor tan δ (120Hz+20°C)	Working voltage (V)	6.3 10 16 25 35 50 63 100						
	Tan δ (max.)	0.22 0.19 0.16 0.14 0.12 0.10 0.08 0.08						
	Working voltage (V)	160 200 250 350 400 450						
	Tan δ (max.)	0.20 0.20 0.20 0.20 0.25 0.25						
Low Temperature Characteristics	Impedance ratio max.at 120Hz							
	Working voltage (V)	6.3 10 16 25 35 50 63 100						
	Z-55°C/Z+20°C	4 4 3 3 3 2 2 2						
	Working voltage (V)	160 200 250 350 400 450						
Z-25°C/Z+20°C	4 4 6 8 10 15							
High Temperature Loading	Test conditions							
	Duration : 2000 hours Ambient temperature : +105°C Applied voltage : Rated DC working voltage							
Shelf Life	Post test requirements at +20°C							
	Leakage current : ≤ Initial specified value Capacitance change : ≤±20% of initial measured value tan δ : ≤150% of initial specified value							
Others	JIS C-5141 JIS C-5102							

CASE SIZE TABLE

Unit: mm

Safety vent for $\varnothing \geq 8$



D _{±0.5}	5	6.3	8	10	13	16	18
p	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d _{±0.5}	0.5		0.6		0.8		

α MAX	(L<20) 1.5
	(L≥20) 2.0

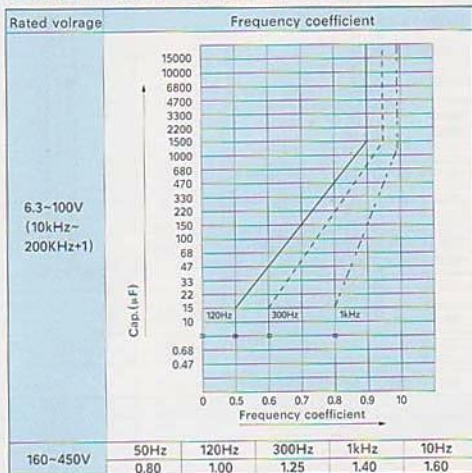
高频率低ESR品 Low Impedance and Low ESR

DIMENSIONS

Voltage (Code)		160V (2C)		200V (2D)		250V (2E)		315V (2F)		350V (2V)		400V (2G)		450V (2W)	
Cop (μF)	Code	8 × 12	19	8 × 12	19	8 × 12	19	8 × 12	19	10 × 12.5	21	10 × 12.5	17	10 × 16	17
1	105	8 × 12	19	8 × 12	19	8 × 12	19	8 × 12	19	10 × 12.5	21	10 × 12.5	17	10 × 16	17
2.2	225	8 × 12	30	8 × 12	30	10 × 12.5	32	10 × 12.5	32	10 × 16	34	10 × 16	28	10 × 20	28
3.3	335	10 × 12.5	50	10 × 12.5	50	10 × 16	52	10 × 16	52	10 × 20	54	10 × 20	47	13 × 20	48
4.7	475	10 × 12.5	57	10 × 16	57	10 × 16	60	10 × 20	65	13 × 20	65	13 × 20	55	13 × 25	55
10	106	10 × 16	90	10 × 20	90	13 × 20	98	13 × 20	98	13 × 25	100	13 × 25	85	16 × 20	90
22	226	13 × 20	140	13 × 25	140	16 × 25	150	16 × 25	150	16 × 25	150	16 × 30	130	16 × 35	135
33	336	13 × 25	175	16 × 25	175	16 × 30	180	16 × 30	185	16 × 35	190	18 × 35	170	18 × 40	170
47	476	16 × 25	220	16 × 25	220	16 × 30	225	18 × 35	235	18 × 40	240				
100	107	16 × 35	330	18 × 40	330	18 × 40	345								

∅D × L (mm)

FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT



STANDARD RATINGS

Voltage (Code)		6.3V(0)				
Cop (μF)	Code	Item	Case size ∅DxL (mm)	Impedance (ΩMAX.) Allowable ripple (mA rms)		
				20°C/100KHz	105°C/10kHz ~200kHz	105°C/100Hz
100	107	5 × 11	1.40	150	99	
120	127	5 × 11	1.10	175	115	
150	157	6.3 × 11	0.78	225	155	
180	187	6.3 × 11	0.60	250	175	
220	227	6.3 × 11	0.48	285	205	
270	277	8 × 12	0.39	370	275	
330	337	8 × 12	0.32	405	310	
390	397	8 × 12	0.27	445	345	
470	477	8 × 15	0.22	550	435	
560	567	8 × 15	0.19	595	480	
680	687	8 × 20	0.16	730	605	
820	827	8 × 20	0.13	795	670	
1000	1008	10 × 20	0.12	950	820	
1200	128	10 × 20	0.10	1020	895	
1500	158	10 × 25	0.048	1220	1090	
1800	188	10 × 31.5	0.078	1370	1230	
2200	228	10 × 31.5	0.066	1470	1320	
2700	278	13 × 25	0.051	1590	1430	
3300	338	13 × 25	0.045	1710	1530	
3900	398	13 × 31.5	0.037	1810	1710	
4700	478	13 × 35.5	0.034	2100	1890	
5600	568	13 × 40	0.031	2270	2040	
6800	688	16 × 30	0.029	2370	2130	
8200	828	16 × 30	0.027	2550	2290	
10000	109	16 × 40	0.025	2750	2470	
12000	129	18 × 35	0.023	2820	2530	
15000	159	18 × 40	0.022	2960	2660	

STANDARD RATINGS

Voltage (Code)		10V(1V)				
Cop (μF)	Code	Item	Case size ∅DxL (mm)	Impedance (ΩMAX.) Allowable ripple (mA rms)		
				20°C/100KHz	105°C/10kHz ~200kHz	105°C/100Hz
686	686	5 × 11	1.30	155	97	
826	826	5 × 11	1.10	175	110	
107	107	6.3 × 11	0.84	210	135	
127	127	6.3 × 11	0.72	235	160	
157	157	6.3 × 11	0.55	265	185	
187	187	6.3 × 11	0.46	290	205	
227	227	8 × 12	0.38	370	270	
277	277	8 × 12	0.31	405	300	
337	337	8 × 12	0.26	460	350	
397	397	8 × 15	0.22	550	430	
477	477	8 × 15	0.19	595	475	
567	567	8 × 20	0.16	730	590	
687	687	8 × 20	0.13	795	660	
827	827	10 × 20	0.11	985	835	
108	108	10 × 20	0.096	1060	915	
128	128	10 × 25	0.078	1280	1120	
158	158	10 × 31.5	0.072	1440	1290	
188	188	13 × 20	0.057	1470	1320	
228	228	13 × 25	0.045	1710	1530	
278	278	13 × 31.5	0.036	1940	1740	
338	338	13 × 35.5	0.032	2180	1860	
398	398	13 × 40	0.030	2360	2120	
478	478	16 × 30	0.028	2420	2170	
568	568	16 × 35	0.026	2610	2340	
688	688	16 × 40	0.024	2680	2410	
828	828	18 × 35	0.023	2820	2530	
109	109	18 × 40	0.021	3040	2730	

DIMENSIONS

Voltage (Code)		18V(1C)				
COP (#F)	Item Code	Case size DxD (mm)	Impedance (QMAX)			Allowable ripple (mA rms)
			20°C/100KHz	105°C/10KHz -200KHz	105°C/100Hz	
47	476	5 × 11	1.30	155	92	
56	566	5 × 11	1.10	175	105	
68	686	6.3 × 11	0.78	220	135	
82	826	6.3 × 11	0.66	240	155	
100	107	6.3 × 11	0.55	265	175	
120	127	6.3 × 11	0.45	290	195	
150	157	8 × 12	0.37	375	260	
180	187	8 × 12	0.31	405	285	
220	227	8 × 12	0.26	460	335	
270	277	8 × 15	0.22	550	410	
330	337	8 × 15	0.18	595	455	
390	397	8 × 20	0.16	730	570	
470	477	8 × 20	0.14	770	615	
560	567	10 × 20	0.12	950	770	
680	687	10 × 20	0.10	1020	845	
820	827	10 × 25	0.084	1220	1030	
1000	108	10 × 31.5	0.072	1410	1210	
1200	128	13 × 20	0.060	1430	1250	
1500	158	13 × 25	0.048	1660	1490	
1800	188	13 × 31.5	0.039	1880	1690	
2200	228	13 × 31.5	0.034	2010	1800	
2700	278	13 × 35.5	0.031	2220	1990	
3300	338	13 × 40	0.028	2410	2160	
3900	398	16 × 30	0.027	2470	2220	
4700	478	16 × 35	0.025	2680	2410	
5600	568	16 × 40	0.024	2820	2530	
6800	688	18 × 35	0.022	2900	2610	
8200	828	18 × 40	0.021	3040	2730	

DIMENSIONS

Voltage (Code)		25V(1E)				
COP (#F)	Item Code	Case size DxD (mm)	Impedance (QMAX)			Allowable ripple (mA rms)
			20°C/100KHz	105°C/10KHz -200KHz	105°C/100Hz	
33	338	5 × 11	1.30	155	88	
39	398	5 × 11	1.10	175	100	
47	476	6.3 × 11	0.84	210	125	
56	566	6.3 × 11	0.72	235	140	
68	686	6.3 × 11	0.57	260	160	
82	826	6.3 × 11	0.47	285	180	
100	107	8 × 12	0.39	330	245	
120	127	8 × 12	0.32	405	275	
150	157	8 × 12	0.26	460	320	
180	187	8 × 15	0.22	550	390	
220	227	8 × 15	0.18	625	455	
270	277	8 × 20	0.15	750	560	
330	337	8 × 20	0.13	795	610	
390	397	10 × 20	0.11	985	770	
470	477	10 × 20	0.10	1020	810	
560	567	10 × 25	0.084	1220	990	
680	687	10 × 31.5	0.072	1420	1180	
820	827	13 × 20	0.059	1430	1210	
1000	108	13 × 25	0.048	1660	1430	
1200	128	13 × 25	0.043	1760	1550	
1500	158	13 × 31.5	0.035	1980	1780	
1800	188	13 × 35.5	0.032	2180	1960	
2200	228	13 × 40	0.029	2360	2120	
2700	278	16 × 30	0.027	2470	2220	
3300	338	16 × 35	0.025	2680	2410	
3900	398	16 × 40	0.023	2820	2530	
4700	478	18 × 40	0.022	2960	2660	

DIMENSIONS

Voltage (Code)		35V(1V)				
COP (#F)	Item Code	Case size DxD (mm)	Impedance (QMAX)			Allowable ripple (mA rms)
			20°C/100KHz	105°C/10KHz -200KHz	105°C/100Hz	
22	226	5 × 11	1.30	160	85	
27	276	5 × 11	1.10	180	99	
33	336	6.3 × 11	0.78	225	125	
39	396	6.3 × 11	0.66	245	140	
47	476	6.3 × 11	0.54	270	160	
56	566	6.3 × 11	0.45	295	180	
68	686	8 × 12	0.37	370	230	
82	826	8 × 12	0.31	415	265	
100	107	8 × 12	0.26	460	305	
120	127	8 × 15	0.22	550	370	
150	157	8 × 15	0.18	595	415	
180	187	8 × 20	0.16	730	520	
220	227	8 × 20	0.13	795	580	
270	277	10 × 20	0.11	985	735	
330	337	10 × 20	0.096	1060	810	
390	397	10 × 25	0.084	1220	955	
470	477	10 × 31.5	0.072	1420	1130	
560	567	13 × 20	0.059	1430	1160	
680	687	13 × 25	0.048	1660	1370	
820	827	13 × 25	0.042	1760	1490	
1000	108	13 × 31.5	0.035	1980	1710	
1200	128	13 × 35.5	0.031	2180	1920	
1500	158	13 × 40	0.029	2360	2120	
1800	188	16 × 30	0.027	2470	2220	
2200	228	16 × 35	0.024	2680	2410	
2700	278	16 × 40	0.022	2900	2610	
3300	338	18 × 40	0.021	3040	2730	

DIMENSIONS

Voltage (Code)		50V(1H)				
COP (#F)	Item Code	Case size DxD (mm)	Impedance (QMAX)			Allowable ripple (mA rms)
			20°C/100KHz	105°C/10KHz -200KHz	105°C/100Hz	
0.47	474	5 × 11	31.0	22	11	
0.68	684	5 × 11	21.0	28	14	
1	105	5 × 11	14.0	36	18	
1.5	155	5 × 11	9.80	45	22	
2.2	225	5 × 11	6.50	54	27	
3.3	335	5 × 11	4.60	66	33	
4.7	475	5 × 11	3.10	81	40	
6.8	685	5 × 11	2.50	91	45	
10	106	5 × 11	2.00	115	57	
12	126	5 × 11	1.70	125	62	
15	156	5 × 11	1.30	145	72	
18	186	5 × 11	1.10	155	79	
22	226	6.3 × 11	0.91	195	100	
27	276	6.3 × 11	0.74	215	115	
33	336	6.3 × 11	0.60	240	135	
39	396	6.3 × 11	0.50	260	150	
47	476	8 × 12	0.42	330	195	
56	566	8 × 12	0.35	360	220	
68	686	8 × 12	0.28	410	255	
82	826	8 × 15	0.22	500	320	
100	107	8 × 20	0.18	620	410	
120	127	8 × 20	0.16	670	455	
150	157	10 × 20	0.13	820	570	
180	187	10 × 20	0.11	890	635	
220	227	10 × 25	0.098	1040	760	
270	277	10 × 31.5	0.085	1200	900	
330	337	10 × 31.5	0.072	1300	995	
390	397	13 × 25	0.053	1440	1120	
470	477	13 × 25	0.048	1500	1190	
560	567	13 × 31.5	0.040	1680	1360	
680	687	13 × 35.5	0.036	1850	1530	
820	827	13 × 40	0.033	2010	1700	
1000	108	16 × 30	0.030	2120	1830	
1200	128	16 × 35	0.028	2260	1990	
1500	158	16 × 40	0.026	2410	2170	
1800	188	18 × 35	0.025	2460	2210	
2200	228	18 × 40	0.024	2560	2300	

STANDARD RATINGS

Voltage (Code)		6.3V (1)			
COP(μF)	Code	Item Code size DxL(mm)	Impedance (ΩMAX)		
			20°C/100kHz	105°C/100kHz~ 200kHz	105°C/120Hz
10	106	5 × 11	1.60	135	67
12	126	5 × 11	1.40	145	72
15	156	6.3 × 11	1.10	185	92
18	186	6.3 × 11	0.95	195	100
22	226	6.3 × 11	0.78	215	110
27	276	6.3 × 11	0.64	240	130
33	336	8 × 12	0.52	305	170
39	396	8 × 12	0.45	330	190
47	476	8 × 12	0.37	365	215
56	566	8 × 15	0.31	450	275
68	686	8 × 15	0.26	500	315
82	826	8 × 20	0.22	600	385
100	107	10 × 20	0.18	750	495
120	127	10 × 20	0.15	820	555
150	157	10 × 25	0.13	950	665
180	187	10 × 31.5	0.11	1110	790
220	227	13 × 20	0.094	1140	835
270	277	13 × 25	0.081	1340	1000
330	337	13 × 25	0.072	1420	1090
390	397	13 × 31.5	0.059	1620	1260
470	477	13 × 35.5	0.052	1780	1420
560	567	13 × 40	0.047	1950	1580
680	687	16 × 30	0.043	2050	1700
820	827	16 × 35	0.040	2220	1880
1000	108	16 × 40	0.037	2370	2050
1200	128	18 × 40	0.034	2510	2210

STANDARD RATINGS

Voltage (Code)		80V (1)			
COP(μF)	Code	Item Code size DxL(mm)	Impedance (ΩMAX)		
			20°C/100kHz	105°C/100kHz~ 200kHz	105°C/120Hz
4.7	475	5 × 11	4.20	53	26
6.8	685	5 × 11	2.60	68	34
10	106	6.3 × 11	1.70	87	43
12	126	6.3 × 11	1.40	96	48
15	156	6.3 × 11	1.20	104	52
18	186	6.3 × 11	1.00	114	58
22	226	8 × 12	0.77	135	71
27	276	8 × 12	0.63	149	80
33	336	8 × 12	0.53	234	132
39	396	8 × 15	0.46	272	156
47	476	8 × 15	0.39	295	175
56	566	8 × 20	0.34	347	208
68	686	10 × 20	0.28	426	264
82	826	10 × 20	0.25	447	284
100	107	10 × 25	0.21	526	347
120	127	10 × 31.5	0.18	606	406
150	157	10 × 31.5	0.15	663	459
180	187	13 × 25	0.13	734	520
220	227	13 × 31.5	0.12	816	595
270	277	13 × 31.5	0.10	894	667
330	337	13 × 35.5	0.088	1000	767
390	397	13 × 40	0.078	1060	822
470	477	16 × 30	0.069	1450	1150
560	567	16 × 35	0.062	1600	1300
680	687	16 × 40	0.055	1770	1470
820	827	18 × 35	0.049	1890	1590
1000	108	18 × 40	0.044	2080	1790

STANDARD RATINGS

Voltage (Code)		100V (1H)			
COP(μF)	Code	Item Code size DxL(mm)	Impedance (ΩMAX)		
			20°C/100kHz	105°C/100kHz~ 200kHz	105°C/120Hz
0.47	474	5 × 11	43.0	17	8
0.68	684	5 × 11	23.0	23	11
1	105	5 × 11	17.0	27	13
1.5	115	5 × 11	10.0	35	17
2.2	225	5 × 11	6.60	43	21
3.3	335	5 × 11	4.10	54	27
4.7	475	6.3 × 11	2.80	68	34
6.8	685	6.3 × 11	1.90	83	41
10	106	6.3 × 11	1.20	104	52
12	126	6.3 × 11	1.00	114	57
15	156	8 × 12	0.81	131	65
18	186	8 × 12	0.67	155	73
22	226	8 × 12	0.55	230	122
27	276	8 × 15	0.47	269	146
33	336	8 × 15	0.38	299	169
39	396	8 × 20	0.33	352	202
47	476	10 × 20	0.28	423	252
56	566	10 × 20	0.24	456	274
68	686	10 × 25	0.21	526	326
82	826	10 × 31.5	0.18	606	386
100	107	10 × 31.5	0.15	663	438
120	127	13 × 25	0.13	774	519
150	157	13 × 25	0.11	798	553
180	187	13 × 31.5	0.098	904	641
220	227	13 × 35.5	0.087	1000	730
270	277	13 × 40	0.072	1130	843
330	337	16 × 30	0.062	1520	1160
390	397	16 × 35	0.053	1730	1340
470	477	16 × 40	0.047	1920	1530
560	567	18 × 35	0.041	2070	1680
680	680	18 × 40	0.036	2300	1910