

E51 (DC) / E51 (AC) Series

(Cylindrical Metallized Polypropylene Film Capacitors)

Features

- High voltage range and low inductance capacitors.
- E51 series are made in dry technology.
- Capacitors both for AC/DC application are available.

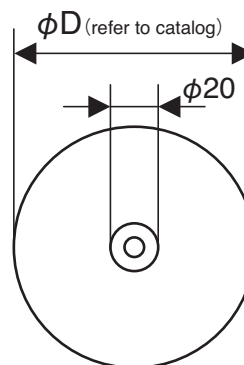
Specifications

E51 (DC) Series (for DC)

Item	Specification
Category temperature range	-25 ~ +70°C (Includes self temperature rise)
Storage temperature	-40 ~ +85°C
Rated voltage (UN)	1,300 ~ 50,000Vdc
Terminal (torque)	M8 × 12 (7Nm)
Standards	IEC 61071 : 2007
Dielectric	Polypropylene
Dielectric dissipation factor (tan δ ₀)	2 × 10 ⁻⁴
Capacitance tolerance	±10% (optional ±5%)
Safety devices	-
Impregnant	Solid resin based on vegetable oil, Non PCB
Material of case	Plastic (UL94V-0)
Environmental regulations	Comply with RoHS

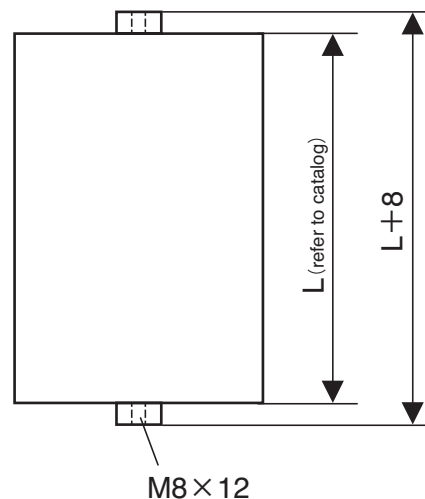
E51 (AC) Series (for AC)

Item	Specification
Category temperature range	-25 ~ +70°C (Includes self temperature rise)
Storage temperature	-40 ~ +85°C
Rated voltage (UN)	2,700 ~ 20,000Vac (4,400 ~ 50,000Vdc)
Terminal (torque)	M8 × 12 (7Nm)
Standards	IEC 61071 : 2007
Dielectric	Polypropylene
Dielectric dissipation factor (tan δ ₀)	2 × 10 ⁻⁴
Capacitance tolerance	±10% (optional ±5%)
Safety devices	-
Impregnant	Solid resin based on vegetable oil, Non PCB
Material of case	Plastic (UL94V-0)
Environmental regulations	Comply with RoHS



Dimensions

Item	Specification
Terminal code	R2
Can material	Plastic (UL94V-0)
Terminal	Axial thread M8×12
	Torque : 7Nm
	I _{max} (terminal) : 100A
Degree of protection	IP00
Humidity class	F
Clearance in air	L + D - 20mm
Creepage distance	L + D - 20mm



Numbering system: e.g. E51, 1,300VDC, 700 μF, φ 140×175Lmm, R2 terminal

E51 . S 18 - 704 R2 0 / H

- Auxiliary symbol
- Terminal symbol
- Capacitance
- Case length
- Case diameter symbol
- Series name

POWER ELECTRONICS USE PLASTIC FILM CAPACITORS

Standard Value and Case Size (E51Series(DC))

Rated DC Voltage $U_N(DC)$ [Vdc]	Rated Capacitance C_N [μ F]	Case size		Rated ripple voltage U_r [V]	Surge voltage U_s [V]	Series resistance (reference) R_s [m Ω]	R_{th} [K/W]	Max current I_{max} [Arms]	Max peak current \hat{I} [kA]	Max surge current I_s [kA]	ESL [nH]	Weight [kg]	MOQ [pcs]	Part number
		ϕD [mm]	L [mm]											
Rated DC voltage $U_N(DC)$: 1,300 ~ 2,700Vdc														
1,300	700	140	175	300	1,950	0.39	3	80	9.3	28.0	30	2.8	30	E51.S18-704R20/H
2,300	80	64	355	400	4,100	1.3	3.6	50	4.0	13.0	80	1.2	70	E51.L35-803R20/H
2,300	170	90	355	400	4,100	0.6	2.4	90	6.0	17.0	100	2.4	30	E51.P35-174R20/H
2,500	25	90	130	800	3,750	0.96	6.4	70	3.1	9.3	30	0.9	250	E51.P13-253R20/H
2,500	50	90	170	800	3,750	1.3	4.9	70	3.1	9.3	50	1.1	100	E51.P17-503R20/H
2,700	40	140	125	500	4,050	0.85	2.55	40	5.0	15.0	20	2.0	52	E51.S12-403R20/H
Rated DC voltage $U_N(DC)$: 3,000 ~ 3,600Vdc														
3,000	18	90	150	600	4,500	0.62	5.5	65	2.8	8.4	50	1.1	240	E51.P15-183R20/H
3,000	80	90	255	700	4,500	1.9	3.2	60	3.2	9.6	60	1.7	45	E51.P25-803R20/H
3,000	350	140	355	600	4,500	1.5	1.5	75	8.4	25.2	100	5.7	22	E51.S35-354R20/H
3,000	400	140	460	600	4,500	0.85	1.2	100	15.4	46.2	120	7.4	16	E51.S46-404R20/H
3,100	86	90	355	500	5,600	1.5	2.4	65	4.5	13	100	2.4	30	E51.P35-863R20/H
3,200	15	64	200	700	4,800	2.3	5.8	35	1.0	3.0	50	0.7	140	E51.L20-153R20/H
3,200	33	90	200	700	4,800	0.7	4.1	70	2.5	7.5	50	1.3	65	E51.P20-333R20/H
3,500	500	140	710	600	5,250	1.2	0.75	100	13.9	41.7	200	11.5	12	E51.S71-504R20/H
3,600	80	116	245	600	5,400	0.71	2.6	90	6.0	18.0	40	2.1	30	E51.R24-803R20/H
3,600	220	140	300	800	5,400	0.6	1.1	40	4.4	13.2	40	5.0	12	E51.S30-224R20/H
Rated DC voltage $U_N(DC)$: 4,000 ~ 5,600Vdc														
4,000	8	116	170	2,850	6,000	1.40	3.8	25	2.1	6.3	100	1.9	36	E51.R17-802R20/H
4,000	16	140	170	2,850	6,000	1.10	3.1	30	3.8	11.4	100	2.7	24	E51.S17-163R20/H
4,000	215	140	565	800	6,000	0.70	0.95	100	11.9	35.7	60	9.0	16	E51.S56-224R20/H
4,200	8	64	138	800	6,300	4.30	8.3	15	0.69	2.07	60	0.5	300	E51.L14-802R20/H
4,200	45	90	355	800	6,300	1.60	2.4	50	4.2	12.6	80	2.4	35	E51.P35-453R20/H
4,400	8	64	180	950	6,600	4.20	6.5	20	0.85	2.55	60	0.6	170	E51.L18-802R20/H
4,400	8	90	130	950	6,600	1.40	6.4	20	1.7	5.1	50	0.9	260	E51.P13-802R20/H
4,500	300	140	710	850	6,750	1.10	0.75	100	16.5	49.5	200	11.5	12	E51.S71-304R20/H
4,700	187.5	140	430	1,000	7,050	3.20	0.7	50	4.25	12.75	40	7.0	10	E51.S43-194R20/H
5,000	4.55	64	150	1,000	7,500	6.50	7.8	15	0.47	1.41	60	0.5	280	E51.L15-462R20/H
5,600	1	64	120	1,100	8,400	4.60	9.7	20	0.70	2.2	20	1.0	320	E51.L12-102R20/H
Rated DC voltage $U_N(DC)$: 6,000 ~ 9,300Vdc														
6,000	30	116	200	700	9,000	2.3	3.2	30	2.10	6.3	80	2.2	33	E51.R20-303R20/H
6,200	6.8	64	255	1,200	9,300	10	4.6	20	0.60	2.0	50	0.9	100	E51.L25-682R20/H
6,200	15	90	255	1,200	9,300	4.6	3.2	35	1.50	4.5	50	1.7	45	E51.P25-153R20/H
6,300	20	90	355	1,200	9,450	6.8	2.4	25	1.80	8.0	100	2.4	30	E51.P35-203R20/H
6,300	51.25	140	355	1,200	9,450	2.7	1.5	40	4.30	20.0	80	5.7	22	E51.S35-513R20/H
8,000	5	90	220	1,400	12,000	1.7	3.76	50	1.80	5.0	80	1.5	65	E51.P22-502R20/H
8,000	10	90	320	1,400	12,000	2.3	2.59	50	1.90	6.0	100	2.2	40	E51.P32-103R20/H
8,000	40	140	355	1,400	12,000	3.5	1.5	40	2.70	8.1	100	5.7	22	E51.S35-403R20/H
8,500	0.22	64	165	1,400	12,750	6.9	7.1	20	0.90	2.9	50	0.6	210	E51.L16-221R20/H
8,500	0.5	64	165	3,950	12,750	3.9	7.1	20	0.54	1.62	60	0.6	210	E51.L16-501R20/H
8,500	1	90	165	1,400	12,750	2.5	5	25	1.70	5.1	50	1.1	265	E51.P16-102R20/H
9,300	9	90	355	1,500	13,950	8	2.3	20	1.00	4.0	100	2.4	30	E51.P35-902R20/H
9,300	25	140	355	1,500	13,950	2.7	1.5	40	4.00	11.0	100	5.7	20	E51.S35-253R20/H
Rated DC voltage $U_N(DC)$: 10,000 ~ 50,000Vdc														
10,000	0.25	64	165	2,000	15,000	15.2	7.1	10	1.1	3.3	80	0.6	210	E51.L16-251R20/H
10,000	4	116	320	2,000	15,000	3.5	2	50	1.5	4.5	60	3.5	24	E51.R32-402R20/H
10,000	4.5	140	480	3,000	15,000	1.8	1.1	50	8.8	26.4	100	8.0	16	E51.S48-452R20/H
10,000	10	90	355	2,500	15,000	7	2.3	25	1.3	3.9	100	2.4	30	E51.P35-103R20/H
12,000	24	140	565	2,100	18,000	4.2	0.95	25	4.2	12.6	60	9.0	16	E51.S56-243R20/H
12,500	0.22	64	200	2,100	18,750	14	5.8	20	0.5	1.4	80	0.7	150	E51.L20-221R20/H
12,500	0.25	64	200	2,100	18,750	14	5.8	20	0.5	1.5	80	0.7	150	E51.L20-251R20/H
12,500	1	116	200	2,100	18,750	3.6	3.2	35	2	6	80	2.2	33	E51.R20-102R20/H
13,000	0.25	64	285	3,000	19,500	17.7	4.1	10	0.6	1.7	100	1.0	110	E51.L28-251R20/H
14,000	5	116	355	2,400	21,000	3.6	1.8	30	2.5	7.5	100	4.0	24	E51.R35-502R20/H
14,000	10	140	355	2,400	21,000	2.4	1.5	40	4.3	12.9	120	5.7	12	E51.S35-103R20/H
15,000	1	64	285	3,600	22,500	15.1	4.1	15	0.49	1.47	100	1.0	100	E51.L28-102R20/H
15,000	2	90	285	3,600	22,500	7.2	2.9	20	1.1	3.3	200	1.9	40	E51.P28-202R20/H
15,000	10	140	385	3,600	22,500	2.7	1.4	40	3.8	11.4	120	6.2	14	E51.S38-103R20/H
15,000	15	140	460	3,600	22,500	2.8	1.2	40	4.6	13.8	120	7.4	16	E51.S46-153R20/H
15,000	20	140	565	3,600	22,500	3.7	0.94	40	3.8	11.4	120	9.1	16	E51.S56-203R20/H
20,000	1.25	90	355	4,000	30,000	11.7	2.3	20	0.9	2.7	100	2.4	35	E51.P35-132R20/H
20,000	1.5	90	355	4,000	30,000	10.4	2.3	34	1.8	5.4	100	2.4	30	E51.P35-152R20/H
25,000	10	140	710	4,600	37,500	3.9	0.75	35	4.3	12.9	200	11.5	12	E51.S71-103R20/H
30,000	1	90	435	4,800	45,000	11	1.9	20	1	3	80	2.9	24	E51.P44-102R20/H
30,000	5	140	710	4,800	45,000	7	0.75	35	2.8	8.4	200	11.5	12	E51.S71-502R20/H
35,000	0.2	90	435	5,600	52,500	13.4	1.9	20	1	3	80	2.9	30	E51.P44-201R20/H
35,000	5	140	785	4,800	52,500	5.5	0.7	25	3.2	9.6	200	12.7	8	E51.S78-502R20/H
40,000	2.2	140	630	8,700	60,000	5.3	0.84	35	2.8	8.4	180	10.2	16	E51.S63-222R20/H
50,000	0.5	140	710	10,000	60,000	5.8	0.75	35	2.9	8.7	200	11.5	12	E51.S71-501R20/H

PLASTIC FILM CAPACITORS

POWER ELECTRONICS USE PLASTIC FILM CAPACITORS

Standard Value and Case Size (E51series (AC))

Rated AC Voltage $U_N(AC)$ [Vdc]	Rated Capacitance C_N [μF]	Case size		Rated ripple voltage U_r [V]	Surge voltage U_s [V]	Series resistance (reference) R_s [mΩ]	R_{th} [K/W]	Max current I_{max} [Arms]	Max peak current \hat{i} [kA]	Max surge current I_s [kA]	ESL [nH]	Weight [kg]	MOQ [pcs]	Part number
		ϕD [mm]	L [mm]											
Rated AC voltage $U_N(AC)$: 2,000 ~ 3,250Vac U_{rms} : 1,650 ~ 2,300V_{rms}														
2,350	1.5	64	150	1,650	6,750	5.4	7.8	20	0.7	2	20	0.5	260	E51.L15-152R20/H
2,350	3	64	250	1,650	3,525	3	4.7	15	1.1	3.3	60	1.0	220	E51.L25-302R20/H
2,550	1	64	120	1,800	4,800	1.8	9.7	40	2	5	40	0.4	300	E51.L12-102R21/H
2,700	4	116	110	1,910	6,600	0.62	5.8	90	2.2	7	15	1.5	72	E51.R11-402R20/H
2,900	3	116	110	2,050	7,500	0.74	5.8	80	2	6	15	1.2	78	E51.R11-302R20/H
3,000	0.47	64	100	2,100	6,450	3.2	11.6	15	1.1	3.3	60	0.3	450	E51.L10-471R20/H
3,000	5	116	260	2,200	7,000	3.8	2.5	10	2	6	80	2.9	27	E51.R26-502R20/H
3,250	0.75	64	165	2,300	4,875	4.9	7.1	20	0.9	2.8	100	0.6	230	E51.L16-751R20/H
3,200	0.5	64	130	2,260	10,920	5	9	25	0.62	1.86	60	0.4	260	E51.L13-501R20/H
Rated AC voltage $U_N(AC)$: 3,500Vac U_{rms} : 2,500V_{rms}														
3,500	0.22	64	120	2,500	9,000	4.8	9.7	20	0.7	2.1	60	0.4	400	E51.L12-221R20/H
3,500	0.25	64	120	2,500	9,000	5.4	9.7	15	0.8	2.4	60	0.4	370	E51.L12-251R20/H
3,500	0.33	64	120	2,500	9,000	3	9.7	20	1	2.9	60	0.4	300	E51.L12-331R20/H
3,500	0.5	64	120	2,500	9,000	5.6	9.7	20	1	3	60	0.4	290	E51.L12-501R20/H
3,200	0.68	64	120	2,250	9,000	4.6	9.7	20	1	2.9	60	0.4	340	E51.L12-681R20/H
3,500	0.75	90	100	2,500	9,000	1.6	8.3	40	1.8	5.4	60	0.6	150	E51.P10-751R20/H
3,500	1.25	90	130	2,500	9,000	2.2	6.4	45	1.4	4.2	60	0.9	110	E51.P13-132R20/H
3,500	1.5	90	130	2,500	9,000	2.1	6.4	45	1.5	4.4	60	0.9	110	E51.P13-152R20/H
2,450	2	90	140	1,700	9,000	2.8	5.9	45	1.5	4.4	60	1.0	100	E51.P14-202R20/H
Rated AC voltage $U_N(AC)$: 3,850 ~ 4,300Vac U_{rms} : 2,700 ~ 3,050V_{rms}														
3,850	2.5	90	285	2,700	5,775	4.1	2.9	25	2	6	100	1.9	45	E51.P28-252R20/H
4,200	1.1	90	150	3,000	6,300	2.7	5.5	20	1.6	4.8	50	1.0	80	E51.P15-112R20/H
4,300	0.5	64	165	3,050	6,450	5.3	7.1	15	0.8	2.3	100	0.6	200	E51.L16-501R21/H
4,300	0.8	64	200	3,050	6,450	7.5	5.8	15	0.9	2.7	100	0.7	260	E51.L20-801R20/H
Rated AC voltage $U_N(AC)$: 4,550Vac U_{rms} : 3,200V_{rms}														
4,550	0.22	64	130	3,200	10,920	8.9	9	15	0.34	1.02	60	0.5	400	E51.L13-221R20/H
4,550	0.33	64	130	3,200	10,920	6.7	9	20	0.46	1.38	60	0.5	300	E51.L13-331R20/H
3,150	0.75	90	130	2,200	10,920	3	6.4	40	1	3	60	0.9	110	E51.P13-751R20/H
2,800	1.25	90	140	2,000	10,920	4.5	6.4	40	1.2	3.6	60	1.0	100	E51.P14-132R20/H
2,500	1	90	130	1,770	9,000	3.2	6.4	28	0.98	2.94	30	0.9	150	E51.P13-102R20/H
4,550	1.1	90	275	3,200	6,825	3.6	3	20	2.4	7.2	80	1.9	45	E51.P27-112R20/H
4,550	1.5	116	130	3,200	10,920	2	4.9	50	2.1	6.3	60	1.1	54	E51.R13-152R20/H
4,550	2	116	130	3,200	10,920	1.8	4.9	55	2.4	7.2	60	1.1	54	E51.R13-202R20/H
Rated AC voltage $U_N(AC)$: 4,700 ~ 5,850Vac U_{rms} : 3,300 ~ 4,150V_{rms}														
4,700	0.75	64	250	3,300	7,050	7.5	4.7	15	0.9	2.7	60	1.0	220	E51.L25-751R20/H
5,000	0.47	64	210	3,500	10,750	5.8	5.5	16	1	3	40	0.8	160	E51.L21-471R20/H
5,000	0.5	90	200	3,540	15,000	5.7	4.1	1	3	50	50	1.3	75	E51.P20-501R20/H
5,000	1	90	255	3,540	7,500	5.8	3.25	25	1.2	3.6	50	1.7	45	E51.P25-102R20/H
5,100	1.6	116	355	3,600	9,500	4	1.8	25	5	15	120	3.9	39	E51.R35-162R20/H
5,100	2.4	90	200	3,600	10,965	3	4.1	35	1.4	4.2	60	1.3	60	E51.P20-242R21/H
5,100	2.6	116	460	3,600	9,500	3.8	1.4	25	5	15	120	4.9	12	E51.R46-262R20/H
5,200	1.1	90	200	3,700	7,800	3.1	4.1	20	5.1	3.1	60	1.3	65	E51.P20-112R20/H
5,850	0.47	90	165	4,150	12,580	3.5	5	20	2.2	6.6	60	1.2	80	E51.P16-471R20/H
Rated AC voltage $U_N(AC)$: 6,000 ~ 9,620Vac U_{rms} : 4,600 ~ 6,800V_{rms}														
6,300	0.13	64	165	4,450	13,500	5.5	7.1	20	0.8	2.4	100	0.6	200	E51.L16-131R20/H
6,300	0.14	64	200	4,450	13,500	17.6	5.8	14	0.3	0.9	50	0.7	260	E51.L20-141R20/H
6,500	4	140	355	4,600	9,500	1.7	1.5	12	7	21	150	5.7	22	E51.S35-402R20/H
7,500	1.33	140	355	5,300	11,250	3.9	1.5	10	2.5	7.5	100	5.7	28	E51.S35-132R20/H
8,900	0.24	90	210	6,300	13,350	5	3.94	20	2	6	60	1.4	65	E51.P21-241R20/H
9,200	0.5	90	275	6,510	13,800	3.9	3	10	1.7	5.1	80	1.9	45	E51.P27-501R20/H
9,620	0.5	116	250	6,800	14,430	3	2.6	40	3.7	11.1	60	2.9	21	E51.R25-501R20/H
Rated AC voltage $U_N(AC)$: 10,000 ~ 35,000Vac U_{rms} : 7,100 ~ 25,000V_{rms}														
10,000	1	116	390	7,100	15,000	3.4	1.7	25	3.7	11.1	100	4.0	12	E51.R39-102R20/H
10,000	1.9	140	390	7,100	15,000	2.1	1.4	25	6.2	18.6	100	6.0	20	E51.S39-192R20/H
12,750	0.2	90	355	9,000	27,400	7	2.3	20	2.3	6.9	100	2.4	40	E51.P35-201R20/H
10,000	0.5	90	355	7,070	15,000	7.2	1.44	10	1	3	100	2.4	40	E51.P35-501R20/H
20,000	0.3	116	355	14,000	30,000	3.1	1.8	10	8	20	100	3.9	39	E51.R35-301R20/H
20,000	1	140	710	14,140	45,000	5.7	0.7	10	4.9	14.7	200	11.5	12	E51.S71-102R20/H
20,000	0.5	140	710	14,140	60,000	6.2	0.7	10	8.5	20	200	11.5	12	E51.S71-501R20/H

PLASTIC FILM CAPACITORS