ES Series

Feature

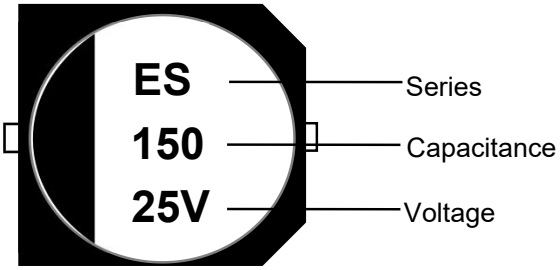
- AEC-Q200 qualified
- Guaranteed duration: 2000 hours at 105°C
- SMT process
- Low impedance, high specific capacitance
- RoHS compliant

Items	Characteristics							
Temperature Range	-55℃ ~ +105℃							
Rated Voltage Range	6.3V ~ 50V							
Capacitance Range	10 ~ 2200 μF							
Capacitance Tolerance	±20%（20℃，120Hz）							
Leakage Current	I≤0.01CV or 3μA, Take the larger of the two values (after applying the rated working voltage for 2 minutes) CR: nominal capacitance (μ F) UR: rated voltage (V)							
Dissipation Factor（tg δ）（20℃, 120Hz）	U_R(V)	6.3	10	16	25	35	50	
	tg δ	0.26	0.19	0.16	0.14	0.12	0.10	
Endurance	Under the condition of 105°C, after being subjected to the rated operating voltage for 2000 hours and subsequently returned to 20°C, the capacitors shall meet the following requirements.							
	Capacitance Change	within ±30% of the initial value						
	Dissipation Factor	≤300% of initial rated value						
	Leakage Current	≤ initial ralted value						
High Temperature Storage	After being stored for 1000 hours without voltage application in a 105℃ environment and then recovered to 20℃, the capacitor shall meet the above endurance requirements.							
Low Temperature	U_R(V)	6.3	10	16	25	35	50	
	Z(-25℃)/Z(20℃)	4	3	2	2	2	2	
	Z(-55℃)/Z(20℃)	8	5	4	3	3	3	
Resistance to soldering heat	The capacitor shall be maintained on a hot plate at 250°C for 30 seconds. After removal and recovery at room temperature, it shall meet the requirements listed on the right.				Capacitance Change		within ±10% of the initial value	
					Dissipation Factor（tg δ）		≤ initial ralted value	
					Leakage Current		≤ initial ralted value	

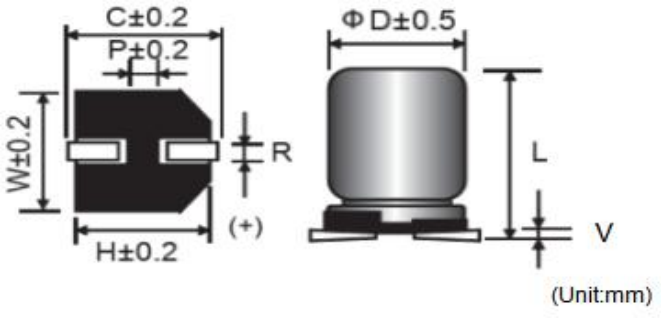
Coefficient of Frequency for Rated Ripple Current

Frequency (Hz)（Hz）	120≦ F <1K	1K≦ F <10K	10K≦ F <100K	100K≦ F
≦470	0.35	0.70	0.90	1.00
>470	0.40	0.85	0.92	1.00

Mark



Appearance & Dimension



Dimension	ΦD	L	W	H	C	R	P	Vmax
4x6	4	6.0±0.3	4.3	4.3	5.1	0.5~0.8	1.0	0.3
5x6	5	6.0±0.3	5.3	5.3	5.9	0.5~0.8	1.4	0.3
6.3x6	6.3	6.0±0.3	6.6	6.6	7.2	0.5~0.8	2.1	0.3
6.3x7.7	6.3	7.7±0.3	6.6	6.6	7.2	0.5~0.8	2.1	0.3
8x10	8	10.0±0.5	8.3	8.3	9.0	0.7~1.1	3.2	0.3
10x10	10	10.0±0.5	10.3	10.3	11.0	0.7~1.3	4.5	0.3

ES Characteristics Table

Rated Voltage (V.DC)	Capacitance (±20%) (μF)	Dimension (mm)		Electrical Characteristics			Minimum Packaging Quantity (PCS)
		ΦD	L	Rated Ripple Current (100KHz/105℃) (mA r.m.s)	tan δ (120Hz/20℃)	Impedance (100KHz) (20℃) (Ω)	
6.3	100	4	6	160	0.26	0.95	2000
	220	5	6	240	0.26	0.40	1000
	330	6.3	6	300	0.26	0.30	1000
	470	6.3	7.7	600	0.26	0.20	1000
	680	6.3	7.7	600	0.26	0.20	1000
	1500	8	10	850	0.26	0.09	500
	2200	10	10	1190	0.26	0.08	500
10	68	4	6	160	0.19	0.95	2000
	150	5	6	240	0.19	0.40	1000
	220	6.3	6	300	0.19	0.30	1000
	330	6.3	7.7	600	0.19	0.20	1000
	470	6.3	7.7	600	0.19	0.20	1000
	1000	8	10	850	0.19	0.09	500
	1500	10	10	1190	0.19	0.08	500
16	47	4	6	160	0.16	0.95	2000
	68	5	6	240	0.16	0.40	1000
	100	5	6	240	0.16	0.40	1000
	150	6.3	6	300	0.16	0.30	1000
	220	6.3	6	300	0.16	0.30	1000
	330	6.3	7.7	600	0.16	0.20	1000
	680	8	10	850	0.16	0.09	500
	1000	10	10	1190	0.16	0.07	500
25	22	4	6	160	0.14	0.95	2000
	33	4	6	160	0.14	0.95	2000
	47	5	6	240	0.14	0.40	1000
	68	5	6	240	0.14	0.40	1000
	100	6.3	6	300	0.14	0.30	1000
	150	6.3	7.7	600	0.14	0.20	1000
	220	6.3	7.7	600	0.14	0.20	1000
	470	8	10	850	0.14	0.09	500
	820	10	10	1190	0.14	0.08	500
35	22	4	6	160	0.12	0.95	2000
	33	5	6	240	0.12	0.40	1000
	47	5	6	240	0.12	0.40	1000
	68	6.3	6	300	0.12	0.30	1000
	100	6.3	6	300	0.12	0.30	1000
	150	6.3	7.7	600	0.12	0.20	1000
	330	8	10	850	0.12	0.09	500
	560	10	10	1190	0.12	0.08	500
50	10	4	6	85	0.10	2.50	2000
	10	5	6	165	0.10	0.90	1000
	22	5	6	165	0.10	0.90	1000
	47	6.3	6	195	0.10	0.70	1000
	100	6.3	7.7	350	0.10	0.40	1000
	220	8	10	670	0.10	0.18	500
	330	10	10	900	0.10	0.12	500