

CDL series

- Low impedance, 105°C 5000 hours
- Applicable to SMT process
- AEC-Q200 Compliant
- RoHS Compliant



SPECIFICATIONS

Items	Characteristics									
Capacitance Tolerance	±20% (120Hz, 20°C)									
Operating Temperature Range	-55°C ~ +105°C									
Rated Voltage Range	6.3 ~ 100VDC									
Capacitance Range	22 ~ 1500µF									
Leakage Current	I ≤ 0.01CV or 3(µA), which is greater. (After 2 minutes application of DC rated voltage at 20°C)									
Dissipation Factor (tan δ)	Measurement Frequency: 120Hz. Temperature: 20°C									
	Rated Voltage(V)	6.3	10	16	25	35	50	63	80	100
	tanδ (Max)	0.30	0.26	0.22	0.16	0.14	0.14	0.08	0.08	0.07
Low Temperature Stability	Measurement Frequency: 120Hz									
	Rated Voltage(V)	6.3	10	16	25	35	50	63	80	100
	Z(-25°C) / Z(20°C)	4	3	2	2	2	2	2	2	2
	Z(-55°C) / Z(20°C)	8	5	4	3	3	3	3	3	3
Impedance Ratio(Max)	5000 hours with application of rated voltage at 105°C									
	Capacitance Change	within ±30% of Initial Value								
	tan δ	300% or less of Initial Specified Value								
	Leakage Current	Initial Specified Value or less								
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours 105°C without voltage applied. Before the measurement, the capacitance shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4.									
	Capacitance Change	Within ±30% of Initial Value								
	tan δ	300% or less of Initial Specified Value								
	Leakage Current	Initial Specified Value or less								
Resistance to Soldering Heat	The capacitors shall be kept on the hott plate maintained at 250°C for 30 seconds.					Capacitance Change	Within ± 10% of Initial Value			
	After removing from the hot plate and restored at room temperature, they meet the characteristics requirements listed at right.					tan δ	Initial Specified Value			
						Leakage Current	Initial Specified Value or less			
Standards	JIS C 5101-4-1 (IEC 60384)									

Frequency Coefficient of Permissible Ripple Current

Frequency (Hz)	120 ≤ F < 1K	1K ≤ F < 10K	10K ≤ F < 100K	100K ≤ F
≤ 33	0.35	0.70	0.90	1.00
33 ~ 150	0.40	0.85	0.92	1.00
> 150	0.60	0.85	0.95	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, The rms ripple current has to be reduced.

DIMENSIONS(mm)

■ Chip Type

Fig.1 $\Phi D=8\sim 10\text{mm}$

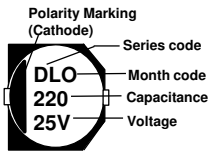
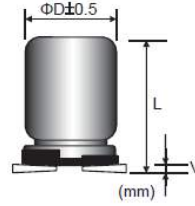
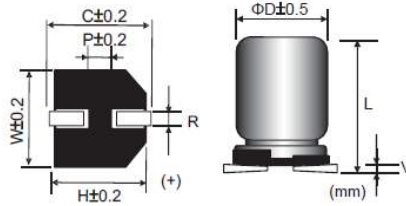
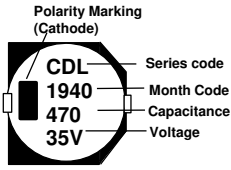
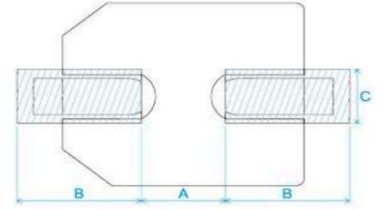


Fig.2 $\Phi D \geq 12.5\text{mm}$



■ Land / Pad pattern



Size	ΦD	L	W	H	C	R	P	Vmax
8*10	8.0	10±0.5	8.3	8.3	9.0	0.7~1.1	3.2	0.3
10*10	10.0	10±0.5	10.3	10.3	11.0	0.7~1.3	4.5	0.3
12.5*13.5	12.5	13.5±0.5	13.0	13.0	13.7	1.1~1.4	4.5	0.4
16*16.5	16.0	16.5±0.5	17.0	17.0	18.0	1.4~1.8	6.4	0.4

DxL	A	B	C
$\Phi 4$	1	2.6	1.6
$\Phi 5$	1.4	3	1.6
$\Phi 6.3$	1.9	3.5	1.6
$\Phi 8$	3	3.5	2.5
$\Phi 10$	4	4	2.5
$\Phi 12.5$	4.3	5.8	2.5
$\Phi 16$	6.6	6.5	5
$\Phi 18$	6.6	7.7	5
$\Phi 8(G)$	2.5	4.5	4.7
$\Phi 10(G)$	3.8	4.8	4.7
$\Phi 12.5(G)$	3.8	6.1	6.9
$\Phi 16(G)$	5	8	9.5
$\Phi 18(G)$	5	8.6	9.5

"(G)" "Anti-vibration Structure"

Electric Characteristics

Su'scon P/N	Cap. (μF)	Cap. Tol. (%)	Rate Volt. (V-DC)	Surge Volt. (V-DC)	Oper. Temp. ($^{\circ}\text{C}$)	Nominal Case Size D*L(mm)	Leakage Current Max (μA)	D.F. MAX (%)	R.C 100KHz (mA rms)	IMP 100KHz at 25 $^{\circ}\text{C}$ (Ω)Max	Load Life (hours)
CDL025M221F10PE50V00A	220	±20	25	28.8	105	8*10	55	16	450	0.170	5000
CDL035M221F10PE50V00A	220	±20	35	40.3	105	8*10	77	14	600	0.160	5000
CDL035M471XDBPE50V00A	470	±20	35	40.3	105	12.5*13.5	164	14	1100	0.060	5000

REMARKS:

1. Dissipation Factor Test: at 20 $^{\circ}\text{C}$, 120 Hz
2. Capacitance Test: at 20 $^{\circ}\text{C}$, 120 Hz
3. Ripple Current Test: at 105 $^{\circ}\text{C}$, 100K Hz
4. Leakage Current: Initial specified value or less
5. When have characteristic requested: Load life & shelf life test and etc., judgment standard reference to our catalogue.
6. Remarks: Su'scon Part Number with suffix code "A" is specially offered for automotive project, which meets AEC-Q200 standard.

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CDL-REV.1