

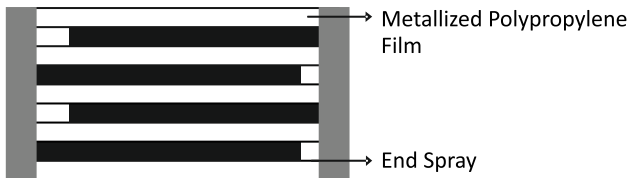
## DCL- 41



### Highlights

- High RMS current
- Low ESR
- Life Expectancy 100,000 Hours
- Fully encapsulated dry construction
- Flame retardant UL94 - V0, ROHS compliant
- Reference Standard: IEC 61071 and IEC 60068

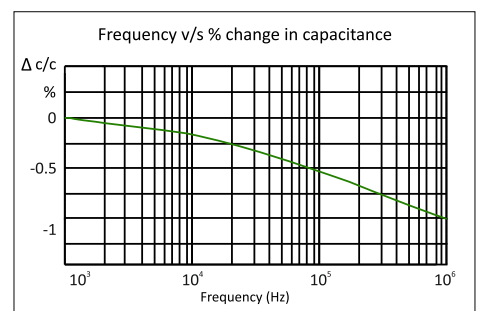
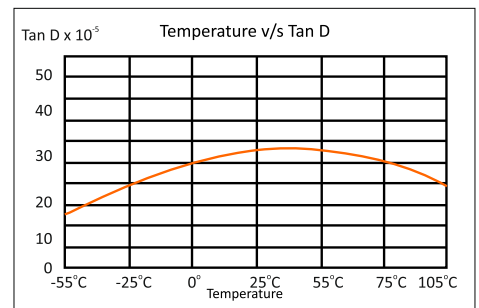
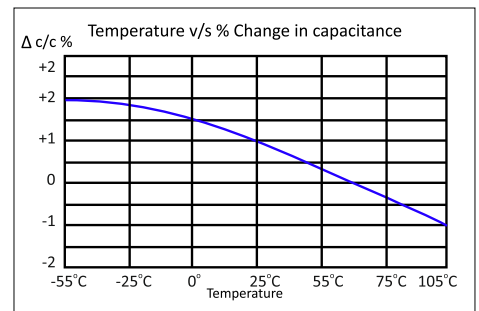
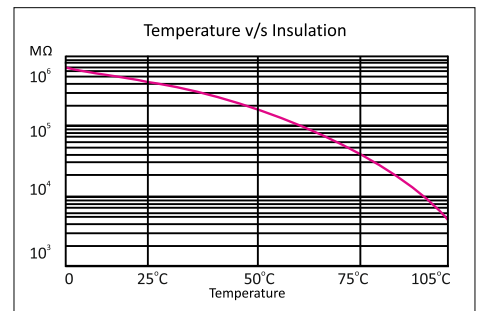
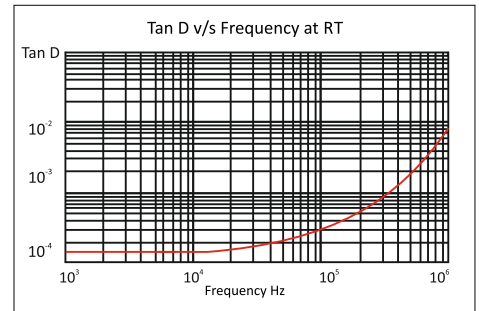
### Construction



### Applications

DC Link and DC Filter applications in Power converters for

- Uninterruptible power supplies
- Wind power inverters
- Solar power inverters
- Traction and industrial drives.
- Impulse discharge capacitors for magnetising and welding.



## DCL- 41

### Technical Specifications

#### Physical Characteristics


▪ Dielectric material	Polypropylene film
▪ Electrode material	Metallised polypropylene film
▪ Winding construction	Polypropylene film, metallised polypropylene film
▪ Enclosure	Aluminum can with preformed UL 94-V0 plastic top with thermosetting resin-fill
▪ Terminals	Nickel plated brass

#### Electrical Characteristics

▪ Capacitance range	50 $\mu$ F to 2350 $\mu$ F
▪ Rated Voltage	700vdc to 2400vdc
▪ Capacitance Tolerance	$\pm 10\%, \pm 5\%$
▪ Dissipation factor ( Tan d)	0.0002
▪ Insulation Resistance $M\Omega \times \mu$ F	5,000S @ 25°C (S = $M\Omega \times \mu$ F)
▪ Dielectric strength between terminals ( $U_{T-T}$ )	1.5 x rated voltage for 60 secs
▪ Test Voltage Terminal to case ( $U_{T-c}$ )	Upto 4800 Vac 50 Hz
▪ Operating Temperature ( $\Theta$ min to $\Theta$ max )	-40°C to +85°C
▪ Maximum Hotspot Temperature	$\emptyset$ 85 = +85°C $\emptyset$ 100, = +80°C $\emptyset$ 116, = +80°C

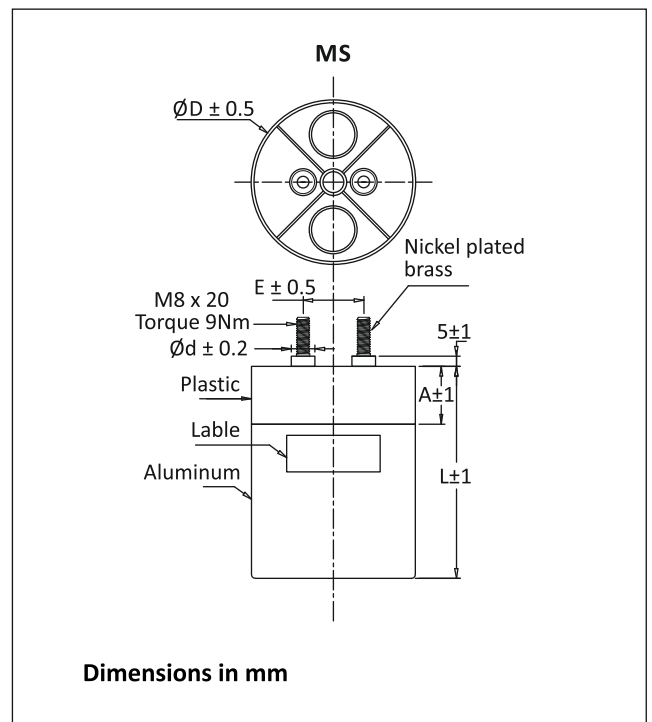
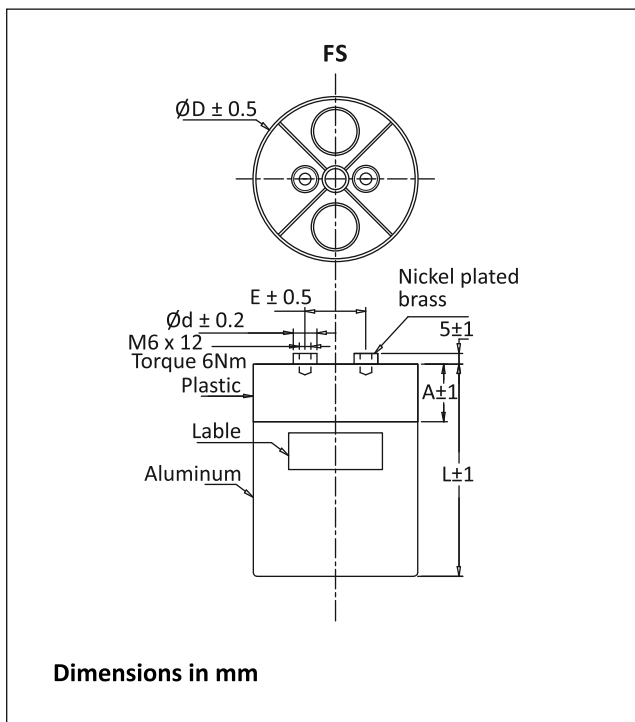
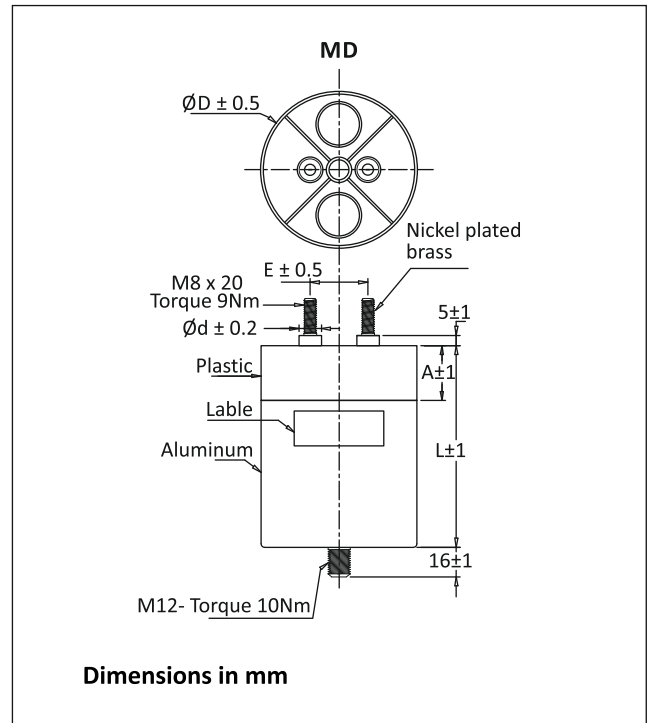
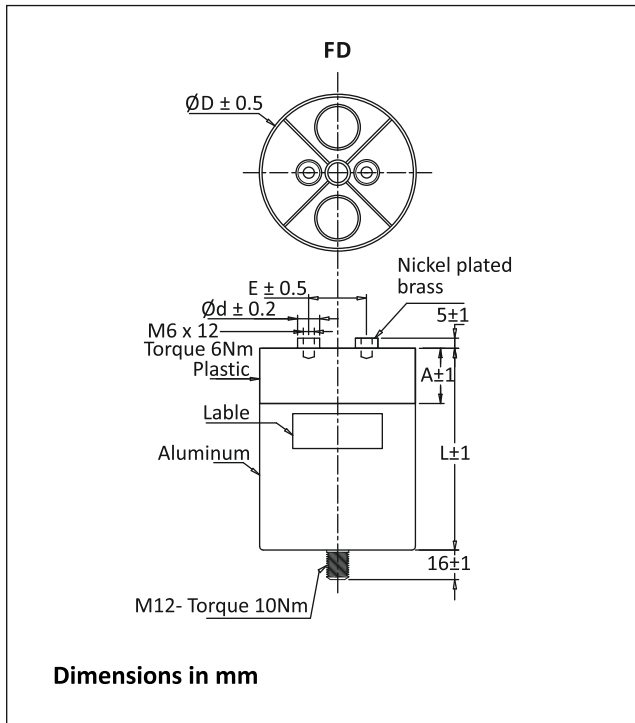
### Marking on Capacitors

Each capacitor will have the following information printed on it, sequentially:

- The Company's symbol  followed by the words ALCON
- The capacitor grade viz DCL-41
- The capacitance value MFD
- The rated voltage VDC
- Capacity tolerance and manufacturing code
- Part number on non-standard capacitors

## DCL- 41

### Capacitor Drawing and Terminal Styles



$\varnothing D$	$\varnothing d$	E	A
85	12	32	30
100	14	50	30
116	14	50	45

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### Standard Capacitor Values

U <sub>R</sub> =700vdc , U <sub>s</sub> =1050V , U <sub>R</sub> =200V , U <sub>T-T</sub> =1050Vdc , U <sub>T-C</sub> =2200Vac for 2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>s</sub>	L <sub>s</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
360	85	105	S1	32	1.6	5.6	40	2.80	8.4	40	0.65	SD003600700AR0S1____K01
450	85	125	S2	32	2.0	4.8	40	3.50	10.5	40	0.75	SD004500700AR0S2____K01
495	85	140	S3	32	2.1	4.5	40	3.90	11.6	40	0.71	SD004950700AR0S3____K01
520	100	105	X1	50	2.0	4.7	40	4.00	12.1	40	0.84	SD005200700AR0X1____K01
540	85	150	S4	32	1.0	4.1	60	4.20	12.6	40	0.90	SD005400700AR0S4____K01
630	85	160	S5	32	1.1	3.8	60	4.90	14.7	40	0.96	SD006300700AR0S5____K01
675	100	125	X2	50	2.4	3.9	40	5.30	15.8	40	1.00	SD006750700AR0X2____K01
675	116	105	R1	50	1.0	4.2	60	5.30	15.8	40	1.10	SD006750700AR0R1____K01
790	100	140	X3	50	1.2	3.5	60	6.10	18.4	40	1.20	SD007900700AR0X3____K01
855	100	150	X4	50	1.2	3.4	60	6.70	20.0	40	1.30	SD008550700AR0X4____K01
900	116	125	R2	50	1.2	3.5	60	7.00	21.0	40	1.40	SD009000700AR0R2____K01
900	85	225	S7	32	1.5	2.7	60	3.50	10.5	60	1.10	SD009000700AR0S7____K01
990	85	255	S8	32	1.0	2.4	80	3.50	10.5	60	1.20	SD009900700AR0S8____K01
1035	100	185	X6	50	1.6	2.5	60	4.10	12.3	40	1.40	SD010350700AR0X6____K01
1080	116	140	R3	50	1.3	3.2	60	8.40	25.2	40	1.64	SD010800700AR0R3____K01
1080	85	275	S9	32	1.9	2.2	60	4.20	12.6	70	1.50	SD010800700AR0S9____K01
1170	116	150	R4	50	1.0	3.1	70	9.10	27.3	50	1.60	SD011700700AR0R4____K01
1260	85	295	S10	32	1.9	1.9	60	4.90	14.7	70	1.90	SD012600700ARS10____K01
1260	116	185	R6	50	1.0	2.4	80	4.90	14.7	60	2.10	SD012600700AR0R6____K01
1350	100	225	X7	50	1.9	2.2	60	5.50	16.5	70	2.20	SD013500700AR0X7____K01
1575	100	255	X8	50	1.1	2.2	80	6.00	18.0	70	2.50	SD015750700AR0X8____K01
1700	100	275	X9	50	1.2	1.9	80	6.50	19.5	70	2.80	SD017000700AR0X9____K01
1800	116	225	R7	50	1.0	1.8	90	7.00	21.0	60	2.60	SD018000700AR0R7____K01
2150	116	255	R8	50	1.0	1.5	100	8.50	25.5	60	2.80	SD021500700AR0R8____K01
2350	116	275	R9	50	1.2	1.3	100	9.00	27.0	70	3.10	SD023500700AR0R9____K01

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### Standard Capacitor Values

U <sub>N</sub> =900vdc , U <sub>S</sub> =1350V , U <sub>R</sub> =200V , U <sub>T-T</sub> =1350Vdc , U <sub>T-C</sub> =2500Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>s</sub>	L <sub>s</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
300	85	105	S1	32	1.7	5.6	40	2.81	8.4	40	0.65	SD003000900AR0S1____K01
360	85	125	S2	32	2.0	4.8	40	3.40	10.0	40	0.75	SD003600900AR0S2____K01
430	100	105	X1	50	2.0	4.7	40	4.04	12.0	40	0.84	SD004300900AR0X1____K01
430	85	140	S3	32	2.1	4.5	40	4.08	12.0	40	0.71	SD004300900AR0S3____K01
475	85	150	S4	32	1.0	4.1	60	4.46	13.0	40	0.90	SD004750900AR0S4____K01
495	85	160	S5	32	1.1	3.8	60	4.68	14.0	60	0.96	SD004950900AR0S5____K01
540	100	125	X2	50	1.9	3.9	40	5.10	15.0	40	1.00	SD005400900AR0X2____K01
540	116	105	R1	50	1.0	4.2	60	5.10	15.0	40	1.10	SD005400900AR0R1____K01
630	100	140	X3	50	1.2	3.5	60	5.95	18.0	50	1.20	SD006300900AR0X3____K01
700	100	150	X4	50	1.2	3.4	60	6.59	20.0	50	1.30	SD007000900AR0X4____K01
720	116	125	R2	50	1.3	3.3	60	6.80	20.0	40	1.40	SD007200900AR0R2____K01
720	85	225	S7	32	1.5	2.7	60	3.40	10.0	60	1.10	SD007200900AR0S7____K01
855	85	255	S8	32	1.0	2.4	80	4.04	12.0	60	1.20	SD008550900AR0S8____K01
855	100	185	X6	50	1.7	2.5	60	4.04	12.0	50	1.40	SD008550900AR0X6____K01
855	116	140	R3	50	1.3	3.2	60	8.08	24.0	40	1.65	SD008550900AR0R3____K01
920	85	275	S9	32	1.9	2.2	60	4.34	13.0	70	1.50	SD009200900AR0S9____K01
945	116	150	R4	50	1.3	3.1	60	8.93	27.0	50	1.60	SD009450900AR0R4____K01
990	85	295	S10	32	2.2	1.9	60	4.68	14.0	70	1.90	SD009900900ARS10____K01
1080	100	225	X7	50	1.1	2.2	80	5.10	15.0	60	2.20	SD010800900AR0X7____K01
1080	116	185	R6	50	1.7	2.4	60	5.10	15.0	60	2.10	SD010800900AR0R6____K01
1260	100	255	X8	50	1.2	2.0	80	5.95	18.0	60	2.50	SD012600900AR0X8____K01
1395	100	255	X8	50	1.2	2.0	80	6.59	20.0	60	2.70	SD013950900AR0X8____K01
1395	100	275	X9	50	1.2	1.9	80	6.59	20.0	60	2.80	SD013950900AR0X9____K01
1440	116	225	R7	50	1.2	2.0	80	6.80	20.0	60	2.60	SD014400900AR0R7____K01
1700	116	255	R8	50	1.0	1.5	100	8.08	24.0	70	2.80	SD017000900AR0R8____K01
1850	116	275	R9	50	1.2	1.3	100	8.71	26.0	70	3.10	SD018500900AR0R9____K01

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### Standard Capacitor Values

U <sub>N</sub> =1000vdc ,U <sub>s</sub> =1500V , U <sub>R</sub> =200V , U <sub>T-T</sub> =1500Vdc , U <sub>T-C</sub> =2700Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>s</sub>	L <sub>s</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
225	85	105	S1	32	1.7	5.6	40	2.50	7.5	40	0.65	SD002251000AR0S1____K01
300	85	125	S2	32	2.0	4.8	40	3.30	9.9	40	0.75	SD003001000AR0S2____K01
335	100	105	X1	50	2.0	4.7	40	3.75	11.0	40	0.84	SD003351000AR0X1____K01
350	85	140	S3	32	2.1	4.5	40	3.90	12.0	40	0.71	SD003501000AR0S3____K01
375	85	150	S4	32	1.0	4.1	60	4.20	13.0	40	0.90	SD003751000AR0S4____K01
400	85	160	S5	32	1.1	3.8	60	4.50	14.0	60	0.96	SD004001000AR0S5____K01
425	100	125	X2	50	2.4	3.9	40	4.75	14.0	40	1.00	SD004251000AR0X2____K01
450	116	105	R1	50	1.0	4.2	60	5.00	15.0	40	1.10	SD004501000AR0R1____K01
500	100	140	X3	50	1.2	3.5	60	5.60	17.0	50	1.20	SD005001000AR0X3____K01
560	100	150	X4	50	1.2	3.4	60	6.25	19.0	50	1.30	SD005601000AR0X4____K01
585	116	125	R2	50	1.2	3.5	60	6.50	20.0	40	1.40	SD005851000AR0R2____K01
595	85	225	S7	32	1.5	2.7	60	3.30	9.90	60	1.10	SD005951000AR0S7____K01
675	85	255	S8	32	1.0	2.4	80	3.75	11.0	60	1.20	SD006751000AR0S8____K01
675	100	185	X6	50	1.7	2.5	60	3.75	11.0	50	1.40	SD006751000AR0X6____K01
700	116	140	R3	50	1.3	3.2	60	7.80	23.0	40	1.65	SD007001000AR0R3____K01
735	85	275	S9	32	1.9	2.2	60	4.10	12.0	70	1.50	SD007351000AR0S9____K01
765	116	150	R4	50	1.3	3.1	60	8.50	26.0	50	1.60	SD007651000AR0R4____K01
800	85	295	S10	32	2.2	1.9	60	4.50	14.0	70	1.90	SD008001000AR0S10____K01
855	100	225	X7	50	1.1	2.2	80	4.75	14.0	60	2.20	SD008551000AR0X7____K01
900	116	185	R6	50	1.7	2.4	60	5.00	15.0	60	2.10	SD009001000AR0R6____K01
1000	100	255	X8	50	1.2	2.0	80	5.60	17.0	60	2.50	SD010001000AR0X8____K01
1125	100	275	X9	50	1.0	1.9	90	6.25	19.0	60	2.80	SD011251000AR0X9____K01
1170	116	225	R7	50	1.2	2.0	80	6.50	20.0	60	2.60	SD011701000AR0R7____K01
1350	116	255	R8	50	1.0	1.5	100	7.50	23.0	70	2.80	SD013501000AR0R8____K01
1485	116	275	R9	50	1.2	1.3	100	8.25	25.0	70	3.10	SD014851000AR0R9____K01

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### Standard Capacitor Values

U <sub>N</sub> =1100vdc , U <sub>S</sub> =1650V , U <sub>R</sub> =200V , U <sub>T-T</sub> =1650Vdc , U <sub>T-C</sub> =2810Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>S</sub>	L <sub>S</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
190	85	105	S1	32	1.7	5.6	40	2.31	6.9	40	0.65	SD001901100AR0S1____K01
235	85	125	S2	32	2.0	4.8	40	2.86	8.6	40	0.75	SD002351100AR0S2____K01
280	100	105	X1	50	2.0	4.7	40	3.41	10.0	40	0.84	SD002801100AR0X1____K01
295	85	140	S3	32	2.1	4.5	40	3.58	11.0	40	0.71	SD002951100AR0S3____K01
315	85	150	S4	32	1.0	4.1	60	3.85	12.0	40	0.90	SD003151100AR0S4____K01
350	85	160	S5	32	1.1	3.8	60	4.13	12.0	60	0.96	SD003501100AR0S5____K01
350	100	125	X2	50	2.4	3.9	40	4.40	13.0	40	1.00	SD003501100AR0X2____K01
380	116	105	R1	50	1.0	4.2	60	4.62	14.0	40	1.10	SD003801100AR0R1____K01
385	85	185	S6	32	1.3	3.3	60	2.34	7.0	60	1.20	SD003851100AR0S6____K01
420	100	140	X3	50	1.2	3.5	60	5.06	15.0	40	1.30	SD004201100AR0X3____K01
460	100	150	X4	50	1.2	3.4	60	5.61	17.0	40	1.40	SD004601100AR0X4____K01
470	116	125	R2	50	1.2	3.5	60	5.72	17.0	40	1.10	SD004701100AR0R2____K01
560	100	185	X6	50	1.7	2.5	60	3.41	10.0	60	1.20	SD005601100AR0X6____K01
585	116	140	R3	50	1.3	3.2	60	7.15	21.0	60	1.40	SD005851100AR0R3____K01
595	85	225	S7	32	1.7	2.4	60	3.63	11.0	60	1.65	SD005951100AR0S7____K01
630	116	150	R4	50	1.3	3.1	60	7.70	23.0	40	1.50	SD006301100AR0R4____K01
630	85	275	S9	32	1.1	2.2	80	3.85	12.0	70	1.60	SD006301100AR0S9____K01
675	85	295	S10	50	1.2	1.9	80	4.13	12.0	70	1.80	SD006751100ARS10____K01
720	100	225	X7	50	1.1	2.2	80	4.40	13.0	60	2.20	SD007201100AR0X7____K01
765	116	185	R6	50	1.7	2.4	60	4.68	14.0	60	2.10	SD007651100AR0R6____K01
825	100	255	X8	50	1.2	2.0	80	5.06	15.0	70	2.50	SD008251100AR0X8____K01
920	100	275	X9	50	1.2	1.9	80	5.61	17.0	70	2.80	SD009201100AR0X9____K01
950	116	225	R7	32	1.2	2.0	80	5.72	17.0	70	2.60	SD009501100AR0R7____K01
1170	116	255	R8	50	1.0	1.5	100	7.15	21.0	70	2.80	SD011701100AR0R8____K01
1260	116	275	R9	50	1.2	1.3	100	7.70	23.0	70	3.10	SD012601100AR0R9____K01

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### Standard Capacitor Values

U <sub>N</sub> =1300vdc ,U <sub>S</sub> =1950V , U <sub>R</sub> =200V , U <sub>T-T</sub> =1950Vdc , U <sub>T-C</sub> =3125Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>S</sub>	L <sub>S</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
160	85	105	S1	32	1.7	5.6	40	2.28	6.8	40	0.65	SD001601300AR0S1____K01
200	85	125	S2	32	2.0	4.8	40	2.86	8.6	40	0.75	SD002001300AR0S2____K01
235	100	105	X1	50	2.0	4.7	40	3.38	10.0	40	0.84	SD002351300AR0X1____K01
250	85	140	S3	32	2.1	4.5	40	3.58	11.0	40	0.71	SD002501300AR0S3____K01
270	85	150	S4	32	1.0	4.1	60	3.90	12.0	40	0.90	SD002701300AR0S4____K01
300	85	160	S5	32	1.1	3.8	60	4.23	13.0	60	0.96	SD003001300AR0S5____K01
300	100	125	X2	50	2.4	3.9	40	4.36	13.0	40	1.00	SD003001300AR0X2____K01
315	116	105	R1	50	1.0	4.2	60	4.55	14.0	40	1.10	SD003151300AR0R1____K01
325	85	185	S6	32	1.3	3.3	60	2.34	7.0	60	0.90	SD003251300AR0S6____K01
350	100	140	X3	50	1.2	3.5	60	5.07	15.0	40	1.20	SD003501300AR0X3____K01
380	100	150	X4	50	1.2	3.4	60	5.53	17.0	40	1.30	SD003801300AR0X4____K01
395	116	125	R2	50	1.2	3.5	60	5.72	17.0	40	1.40	SD003951300AR0R2____K01
395	85	225	S7	32	1.5	2.7	60	2.86	8.6	60	1.10	SD003951300AR0S7____K01
470	100	185	X6	50	1.7	2.5	60	3.38	10.0	60	1.40	SD004701300AR0X6____K01
470	116	140	R3	32	1.3	3.2	60	6.83	20.0	60	1.65	SD004701300AR0R3____K01
495	116	150	R4	50	1.3	3.1	60	7.15	21.0	40	1.60	SD004951300AR0R4____K01
495	85	255	S8	32	1.0	2.4	80	3.58	11.0	70	1.20	SD004951300AR0S8____K01
540	85	275	S9	50	1.1	2.1	80	3.90	12.0	50	1.50	SD005401300AR0S9____K01
585	85	295	S10	32	1.2	1.9	80	4.23	13.0	70	1.90	SD005851300ARS10____K01
600	100	225	X7	50	1.9	2.2	60	4.36	13.0	60	2.20	SD006001300AR0X7____K01
615	116	185	R6	50	1.0	2.4	80	4.45	13.0	60	2.10	SD006151300AR0R6____K01
700	100	255	X8	50	1.2	2.0	80	5.07	15.0	70	2.50	SD007001300AR0X8____K01
765	100	275	X9	50	1.0	1.9	90	5.53	17.0	70	2.80	SD007651300AR0X9____K01
785	116	225	R7	50	1.2	2.0	80	5.69	17.0	60	2.60	SD007851300AR0R7____K01
945	116	255	R8	50	1.0	1.5	100	6.83	20.0	70	2.80	SD009451300AR0R8____K01
1000	116	275	R9	50	1.2	1.3	100	7.15	21.0	70	3.10	SD010001300AR0R9____K01



## DCL- 41

### Standard Capacitor Values

U <sub>N</sub> =1500vdc ,U <sub>s</sub> =2250V , U <sub>R</sub> =200V , U <sub>T-T</sub> =2250Vdc , U <sub>T-C</sub> =3500Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>s</sub>	L <sub>s</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
85	85	105	S1	32	1.5	5.6	40	1.43	4.3	40	0.65	SD000851500AR0S1____K01
120	85	125	S2	32	2.0	4.8	40	1.95	5.9	40	0.75	SD001201500AR0S2____K01
125	85	140	S3	32	2.1	4.5	40	2.10	6.3	40	0.71	SD001251500AR0S3____K01
130	100	105	X1	50	2.0	4.7	40	2.18	6.5	40	0.84	SD001301500AR0X1____K01
150	85	150	S4	32	1.0	4.1	60	2.40	7.2	40	0.90	SD001501500AR0S4____K01
160	85	160	S5	32	1.1	3.8	60	2.63	7.9	60	0.96	SD001601500AR0S5____K01
170	100	125	X2	50	2.4	3.9	40	2.85	8.6	40	1.00	SD001701500AR0X2____K01
170	116	105	R1	50	1.0	4.2	60	2.85	8.6	40	1.10	SD001701500AR0R1____K01
200	100	140	X3	50	1.2	3.5	60	3.30	9.9	40	1.20	SD002001500AR0X3____K01
220	100	150	X4	50	1.2	3.4	60	3.60	11.0	40	1.30	SD002201500AR0X4____K01
240	116	125	R2	50	1.2	3.5	60	3.90	12.0	40	1.40	SD002401500AR0R2____K01
250	85	225	S7	32	1.5	2.7	60	2.06	6.2	60	1.10	SD002501500AR0S7____K01
250	85	255	S8	32	1.3	3.1	60	2.10	6.3	60	1.53	SD002501500AR0S8____K01
260	100	185	X6	50	1.7	2.5	60	2.18	6.5	60	1.40	SD002601500AR0X6____K01
285	116	150	R4	50	1.3	3.1	60	4.73	14.0	40	1.60	SD002851500AR0R4____K01
290	85	275	S9	32	1.9	2.2	60	2.40	7.2	70	1.50	SD002901500AR0S9____K01
315	85	295	S10	32	1.2	1.9	80	2.63	7.9	70	1.90	SD003151500ARS10____K01
350	100	225	X7	50	1.9	2.2	60	2.85	8.6	70	2.20	SD003501500AR0X7____K01
360	116	185	R6	50	1.0	2.4	80	3.00	9.0	60	2.10	SD003601500AR0R6____K01
400	100	255	X8	50	1.2	2.0	80	3.30	9.9	70	2.50	SD004001500AR0X8____K01
430	100	275	X9	50	1.2	1.9	80	3.60	11.0	70	2.80	SD004301500AR0X9____K01
560	116	255	R8	50	1.0	1.5	100	4.69	14.0	70	2.80	SD005601500AR0R8____K01
630	116	275	R9	50	1.2	1.3	100	5.25	16.0	70	3.10	SD006301500AR0R9____K01

## DCL- 41

### Standard Capacitor Values

U <sub>N</sub> =1800vdc ,U <sub>S</sub> =2700V , U <sub>R</sub> =200V , U <sub>T-T</sub> =2700Vdc , U <sub>T-C</sub> =3900Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>S</sub>	L <sub>S</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
70	85	105	S1	32	1.7	5.6	40	1.35	4.1	40	0.65	SD000701800AR0S1____K01
90	85	125	S2	32	2.0	4.8	40	1.80	5.4	40	0.75	SD000901800AR0S2____K01
100	85	140	S3	32	2.1	4.5	40	2.07	6.2	40	0.71	SD001001800AR0S3____K01
100	100	105	X1	50	2.0	4.7	40	2.07	6.2	40	0.84	SD001001800AR0X1____K01
110	85	150	S4	32	1.0	4.1	60	2.16	6.5	40	0.90	SD001101800AR0S4____K01
130	85	160	S5	32	1.1	3.8	60	2.52	7.6	60	0.96	SD001301800AR0S5____K01
135	100	125	X2	50	2.4	3.9	40	2.70	8.1	40	1.00	SD001351800AR0X2____K01
135	116	105	R1	50	1.0	4.2	60	2.70	8.1	40	1.10	SD001351800AR0R1____K01
160	100	140	X3	50	1.2	3.5	60	3.15	9.5	40	1.20	SD001601800AR0X3____K01
170	100	150	X4	50	1.2	3.4	60	3.42	10.0	40	1.30	SD001701800AR0X4____K01
180	116	125	R2	50	1.2	3.5	60	3.60	11.0	40	1.40	SD001801800AR0R2____K01
200	85	225	S7	32	1.5	2.7	60	4.05	12.0	60	1.10	SD002001800AR0S7____K01
210	85	255	S8	32	1.0	2.4	80	4.14	12.0	60	1.20	SD002101800AR0S8____K01
210	100	185	X6	50	1.7	2.5	60	4.14	12.0	60	1.40	SD002101800AR0X6____K01
220	116	140	R3	50	1.3	3.2	60	4.32	13.0	40	1.64	SD002201800AR0R3____K01
225	85	275	S9	32	1.9	2.2	60	4.50	14.0	70	1.50	SD002251800AR0S9____K01
250	116	150	R4	50	1.3	3.1	60	4.95	15.0	50	1.60	SD002501800AR0R4____K01
270	85	295	S10	32	2.2	1.9	60	2.70	8.1	70	1.90	SD002701800AR0S10____K01
270	100	225	X7	50	1.1	2.2	80	2.70	8.1	60	2.20	SD002701800AR0X7____K01
270	116	185	R6	50	0.6	2.4	100	2.70	8.1	60	2.10	SD002701800AR0R6____K01
315	100	255	X8	50	0.8	2.0	100	3.15	9.5	70	2.50	SD003151800AR0X8____K01
350	100	275	X9	50	0.8	1.9	100	3.42	10.0	70	2.80	SD003501800AR0X9____K01
360	116	255	R8	50	1.0	1.5	100	3.60	11.0	70	2.80	SD003601800AR0R8____K01
430	116	275	R9	50	1.2	1.3	100	4.28	13.0	70	3.10	SD004301800AR0R9____K01

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### Standard Capacitor Values

U <sub>N</sub> =2000vdc ,U <sub>S</sub> =3000V , U <sub>R</sub> =200V , U <sub>T-T</sub> =3000Vdc , U <sub>T-C</sub> =4210Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>S</sub>	L <sub>S</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
60	85	105	S1	32	1.5	5.6	40	1.30	3.9	40	0.65	SD000602000AR0S1____K01
70	85	125	S2	32	2.0	4.8	40	1.60	4.8	40	0.75	SD000702000AR0S2____K01
80	85	140	S3	32	2.1	4.5	40	1.80	5.4	40	0.71	SD000802000AR0S3____K01
85	100	105	X1	50	2.0	4.7	40	1.90	5.7	40	0.84	SD000852000AR0X1____K01
90	85	150	S4	32	1.0	4.1	60	2.00	6.0	40	0.90	SD000902000AR0S4____K01
100	85	160	S5	32	1.1	3.8	60	2.20	6.6	60	0.96	SD001002000AR0S5____K01
110	100	125	X2	50	2.4	3.9	40	2.40	7.2	40	1.00	SD001102000AR0X2____K01
115	116	105	R1	50	1.0	4.2	60	2.50	7.5	40	1.10	SD001152000AR0R1____K01
120	85	185	S6	50	1.3	3.3	60	1.30	3.9	60	0.90	SD001202000AR0S6____K01
125	100	140	X3	50	1.2	3.5	60	2.80	8.4	40	1.20	SD001252000AR0X3____K01
135	116	125	R2	32	1.2	3.5	60	3.00	9.0	40	1.40	SD001352000AR0R2____K01
140	100	150	X4	50	1.2	3.4	60	3.10	9.3	60	1.30	SD001402000AR0X4____K01
150	85	225	S7	32	1.5	2.7	60	3.20	9.6	60	1.10	SD001502000AR0S7____K01
155	116	140	R3	32	1.3	3.2	60	3.50	11.0	40	1.65	SD001552000AR0R3____K01
170	100	185	X6	50	1.7	2.5	60	1.90	5.7	60	1.40	SD001702000AR0X6____K01
180	85	275	S9	32	1.9	2.2	60	2.00	6.0	40	1.50	SD001802000AR0S9____K01
180	116	150	R4	50	1.3	3.1	60	4.00	12.0	60	1.60	SD001802000AR0R4____K01
200	85	295	S10	32	2.2	1.9	60	2.25	6.8	70	1.90	SD002002000AR0S10____K01
215	100	225	X7	50	1.1	2.2	80	2.40	7.2	70	2.20	SD002152000AR0X7____K01
225	116	185	R6	50	1.0	2.4	80	2.50	7.5	60	2.10	SD002252000AR0R6____K01
250	100	255	X8	50	1.2	2.0	80	2.80	8.4	70	2.50	SD002502000AR0X8____K01
270	116	225	R7	50	1.2	2.0	80	3.00	9.0	70	2.60	SD002702000AR0R7____K01
280	100	275	X9	50	1.2	1.9	80	3.10	9.3	70	2.80	SD002802000AR0X9____K01
315	116	255	R8	50	1.0	1.5	100	3.50	11.0	70	2.80	SD003152000AR0R8____K01
360	116	275	R9	50	1.2	1.3	100	4.00	12.0	70	3.10	SD003602000AR0R9____K01

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### Standard Capacitor Values

U <sub>N</sub> =2200vdc ,U <sub>S</sub> =3300V , U <sub>R</sub> =200V , U <sub>T-T</sub> =3300Vdc , U <sub>T-C</sub> =4530Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>S</sub>	L <sub>S</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
45	85	105	S1	32	1.7	5.6	40	1.10	3.3	40	0.65	SD000452200AR0S1____K01
60	85	125	S2	32	2.0	4.8	40	1.43	4.3	40	0.75	SD000602200AR0S2____K01
65	85	140	S3	32	2.1	4.5	40	1.65	5.0	40	0.71	SD000652200AR0S3____K01
65	100	105	X1	50	2.0	4.7	40	1.65	5.0	40	0.84	SD000652200AR0X1____K01
75	85	150	S4	32	1.0	4.1	60	1.87	5.6	40	0.90	SD000752200AR0S4____K01
85	85	160	S5	32	1.1	3.8	60	2.09	6.3	60	0.96	SD000852200AR0S5____K01
90	85	185	S6	50	2.8	3.3	40	2.20	6.6	40	0.90	SD000902200AR0S6____K01
90	116	105	R1	50	1.0	4.2	60	2.20	6.6	40	1.10	SD000902200AR0R1____K01
90	100	125	X2	50	1.1	3.9	60	2.20	6.6	40	1.00	SD000902200AR0X2____K01
105	100	140	X3	50	1.2	3.5	60	2.53	7.6	40	1.20	SD001052200AR0X3____K01
110	100	150	X4	50	1.2	3.4	60	2.75	8.3	40	1.30	SD001102200AR0X4____K01
115	85	225	S7	32	1.5	2.7	60	1.43	4.3	60	1.10	SD001152200AR0S7____K01
115	116	125	R2	50	1.2	3.5	60	2.86	8.6	40	1.40	SD001152200AR0R2____K01
135	85	255	S8	32	1.7	2.4	60	1.65	5.0	60	1.20	SD001352200AR0S8____K01
135	100	185	X6	50	1.7	2.5	60	1.65	5.0	60	1.40	SD001352200AR0X6____K01
135	116	140	R3	50	1.3	3.2	60	3.30	9.9	40	1.65	SD001352200AR0R3____K01
145	85	275	S9	32	1.1	2.2	80	1.76	5.3	70	1.50	SD001452200AR0S9____K01
150	116	150	R4	50	1.3	3.1	60	3.74	11.0	50	1.60	SD001502200AR0R4____K01
170	85	295	S10	32	1.2	1.9	80	2.09	6.3	70	1.90	SD001702200AR0S10____K01
180	100	225	X7	50	1.1	2.2	80	2.20	6.6	60	2.20	SD001802200AR0X7____K01
180	116	185	R6	50	1.0	2.4	80	2.20	6.6	60	2.10	SD001802200AR0R6____K01
205	100	255	X8	50	1.2	2.0	80	2.53	7.6	70	2.50	SD002052200AR0X8____K01
225	100	275	X9	50	1.2	1.9	80	2.75	8.3	70	2.80	SD002252200AR0X9____K01
235	116	225	R7	50	1.2	2.0	80	2.86	8.6	60	2.60	SD002352200AR0R7____K01
270	116	255	R8	50	1.0	1.5	100	3.30	9.9	70	2.80	SD002702200AR0R8____K01
280	116	275	R9	50	1.2	1.3	100	3.52	11.0	70	3.10	SD002802200AR0R9____K01

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### Standard Capacitor Values

U <sub>N</sub> =2400vdc ,U <sub>S</sub> =3600V , U <sub>R</sub> =200V , U <sub>T-T</sub> =3600Vdc , U <sub>T-C</sub> =4840Vac/2 s												
C <sub>N</sub>	Can size mm		Case Code	Pitch	** Typical ESR @ 1 KHz	R <sub>TH</sub>	I <sub>MAX</sub>	I <sub>p</sub>	I <sub>S</sub>	L <sub>S</sub>	Weight	Ordering code*
(μF)	D	L		E mm	mΩ	(°C/W)	(A)	(kA)	(kA)	(nH)	(Kg)	
45	85	105	S1	32	1.7	5.6	40	1.20	3.6	40	0.65	SD000452400AR0S1____K01
55	85	125	S2	32	2.0	4.8	40	1.44	4.3	40	0.75	SD000552400AR0S2____K01
60	100	105	X1	50	2.0	4.7	40	1.56	4.7	40	0.84	SD000602400AR0X1____K01
65	85	140	S3	32	2.1	4.5	40	1.68	5.0	40	0.71	SD000652400AR0S3____K01
70	85	150	S4	32	1.0	4.1	60	1.80	5.4	40	0.90	SD000702400AR0S4____K01
75	85	160	S5	32	1.1	3.8	60	1.92	5.8	60	0.96	SD000752400AR0S5____K01
75	100	125	X2	50	2.4	3.9	40	2.04	6.1	40	1.00	SD000752400AR0X2____K01
80	116	105	R1	50	1.0	4.2	60	2.16	6.5	40	1.10	SD000802400AR0R1____K01
90	100	140	X3	50	1.2	3.5	60	2.40	7.2	40	1.20	SD000902400AR0X3____K01
95	100	150	X4	50	1.2	3.4	60	2.52	7.6	40	1.30	SD000952400AR0X4____K01
100	116	125	R2	50	1.2	3.5	60	2.64	7.9	40	1.40	SD001002400AR0R2____K01
100	85	185	S6	32	1.3	3.3	60	1.32	4.0	60	0.90	SD001002400AR0S6____K01
110	85	225	S7	32	1.5	2.7	60	1.44	4.3	60	1.10	SD001102400AR0S7____K01
120	85	255	S8	32	1.7	2.4	60	1.56	4.7	60	1.20	SD001202400AR0S8____K01
120	100	185	X6	50	1.7	2.5	60	1.56	4.7	60	1.40	SD001202400AR0X6____K01
125	116	140	R3	50	1.3	3.2	60	3.36	10.0	40	1.65	SD001252400AR0R3____K01
125	85	275	S9	32	1.1	2.2	80	1.68	5.0	70	1.50	SD001252400AR0S9____K01
135	116	150	R4	50	1.3	3.1	60	3.60	11.0	50	1.60	SD001352400AR0R4____K01
145	85	295	S10	32	1.2	1.9	80	1.92	5.8	70	1.90	SD001452400AR0S10____K01
155	100	225	X7	50	1.1	2.2	80	2.04	6.1	60	2.20	SD001552400AR0X7____K01
155	116	185	R6	50	1.0	2.4	80	2.04	6.1	60	2.10	SD001552400AR0R6____K01
180	100	255	X8	50	1.2	2.0	80	2.40	7.2	70	2.50	SD001802400AR0X8____K01
190	100	275	X9	50	1.2	1.9	80	2.52	7.6	70	2.80	SD001902400AR0X9____K01
200	116	225	R7	50	0.9	2.0	90	2.64	7.9	60	2.60	SD002002400AR0R7____K01
235	116	255	R8	50	1.0	1.5	100	3.12	9.4	70	2.80	SD002352400AR0R8____K01
250	116	275	R9	50	1.2	1.3	100	3.36	10.0	70	3.10	SD002502400AR0R9____K01

\*\*MAX. ESR = 2x typical ESR

## DCL- 41

### Definitions of parameters

**Rated d.c. voltage :**  $U_N$

Maximum operating peak voltage of either polarity but of a non-reversing type waveform, for which the capacitor has been designed, for continuous operation

**Ripple voltage :**  $U_R$

Peak-to-peak alternating component of the unidirectional voltage

**Non-recurrent surge voltage :**  $U_s$

Peak voltage induced by a switching or any other disturbance of the system which is allowed for a limited number of times and for durations shorter than the basic period

**Insulation voltage :**  $U_i$

r.m.s. value of the sine wave voltage designed for the insulation between terminals of capacitors to case or earth

**Maximum peak current :**  $I_p$

Maximum repetitive peak current that can occur during continuous operation

**Maximum current :**  $I_{max}$

Maximum r.m.s. current for continuous operation

**Maximum surge current :**  $I_s$

Peak non-repetitive current induced by switching or any other disturbance of the system which is allowed for a limited number of times, for durations shorter than the basic period

**Highest operating temperature :**  $\Theta_{max}$

Temperature of the hottest point on the case of the capacitor when in thermal equilibrium

**Lowest operating temperature :**  $\Theta_{min}$

Lowest temperature of the dielectric at which the capacitor may be energized

**Container temperature rise :**  $\Delta\Theta_{case}$

Difference between the temperature of the hottest point of the container and the temperature of the cooling air

**Cooling-air temperature :**  $\Theta_{amb}$

Temperature of the cooling air measured at the hottest position of the capacitor, under steady state conditions, midway between two units

**NOTE :** if only one unit is involved, it is the temperature measured at a point approximately 0.1 m away from the capacitor container and at two-thirds of the heights from its base.

**Maximum operating temperature :**  $\Theta_{max}$

Highest temperature of the case at which the capacitor may be operated

### Steady-state conditions

Thermal equilibrium attained by the capacitor at constant output and at constant cooling-air temperature

**Tangent of the loss angle of a capacitor :**  $\tan \delta$

Ratio between the equivalent series resistance and the capacitive reactance of a capacitor at a specified sinusoidal alternating voltage, frequency and temperature

$$\tan \delta = R_{esr} \omega C = \tan \delta_d + R_s \omega C$$

$\tan \delta_d =$  dielectric loss factor (0.0002)

**Equivalent series resistance of a capacitor :** ESR

Effective resistance which if connected in series with an ideal capacitor of capacitance value equal to that of the capacitor in question, would have a power loss equal to active power dissipated in that capacitor under specified operating conditions

**Maximum power loss :**  $P_{max}$

Maximum power loss at which the capacitor may be operated at the maximum case temperature.

## DCL- 41

### Life Expectancy

The Life expectancy of DCL-41 metallised polypropylene film capacitor is very closely linked with the operating temperature and operating voltage of the capacitor.

The life expectancy is related to the capacitors rated voltage and the maximum hotspot temperature (85 °C).

The simultaneous operating of capacitor at highest permissible voltage and operating temperature should be avoided.

Please note there are no frequency or ripple current multiplying factors in case of metallised film DC link capacitors as compared to Aluminum electrolytic capacitors.

The life expectancy can be calculated from the formula and the look up graph given below:

### Life Expectancy

Steps to calculate Hotspot Temperature

1. locate the capacitor and the ESR from the Electrical specifications (Data sheet).
2. Heat dissipation =  $(I_{rms}^2 \times ESR)$ .
3. Get the value for  $R_{th}$  (°C/watt).....Data sheet.
4. Calculate internal temperature rise =  $(I_{rms}^2 \times ESR) \times R_{th}$  (°C/watt).
5. Hotspot temperature of capacitor =  $T_{Ambient} + (I_{rms}^2 \times ESR) \times R_{th}$  (°C/watt).

Look at the graph below to get the expected life. Ensure do not exceed the voltage and current specification.

