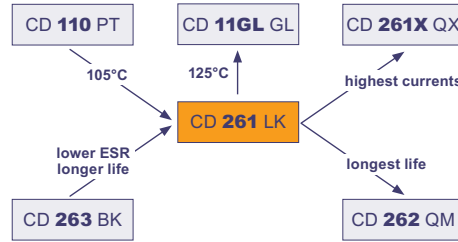


10 000 - 12 000h at 105°C

- High Reliability at High Voltage
- Power Supplies
- Electronic Lighting Ballast
- General Industry



Item	Characteristics														
Operating Temperature Range (°C)	-25 ~ +105														
Voltage Range (V)	160 ~ 450														
Capacitance Range (µF)	6,8 ~ 220														
Capacitance Tolerance (20°C, 120Hz)	± 20%														
Leakage Current (µA)	After 1 minute at 20°C application of rated voltage, leakage current is not more than 0,04CV + 100. C: Nominal Capacitance (µF) V: Rated Voltage (V)														
Dissipation Factor (20°C, 120Hz)	<table border="1"> <tr> <th>Rated Voltage (V)</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> <tr> <td>Tan δ (max)</td> <td colspan="3">0,15</td> <td colspan="3">0,20</td> </tr> </table>	Rated Voltage (V)	160	200	250	350	400	450	Tan δ (max)	0,15			0,20		
	Rated Voltage (V)	160	200	250	350	400	450								
Tan δ (max)	0,15			0,20											
Stability at Low Temperature (Impedance Ratio at 120Hz)	<table border="1"> <tr> <th>Rated Voltage (V)</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> <tr> <td>Z_{-25°C} / Z_{+20°C}</td> <td colspan="2">3</td> <td colspan="2">4</td> <td colspan="2">6</td> </tr> </table>	Rated Voltage (V)	160	200	250	350	400	450	Z _{-25°C} / Z _{+20°C}	3		4		6	
	Rated Voltage (V)	160	200	250	350	400	450								
Z _{-25°C} / Z _{+20°C}	3		4		6										

Radial

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	$\emptyset \leq 10$: 10 000h $\emptyset \geq 12$: 12 000h	>100 000h	$\emptyset \leq 10$: 8 000h $\emptyset \geq 12$: 10 000h	$\emptyset \leq 10$: 6 000h $\emptyset \geq 12$: 8 000h	1000h
Leakage Current	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value
Capacity Change	Within ± 50% of initial value		Within ± 30% of initial value	Within ± 20% of initial value	Within ± 20% of initial value
Dissipation Factor	Not more than 500% of specified value		Not more than 300% of specified value	Not more than 200% of specified value	Not more than 200% of specified value
Condition:					
Applied Voltage	U_R	U_R	U_R	U_R	$U_R = 0$
Applied Current	I_R	$1,4 \times I_R$	I_R	$I_R = 0$	$I_R = 0$
Applied Temperature	105°C	60°C	105°C	105°C	105°C
Failure Rate Level	≤ 1% Failure Rate		guaranteed		After test: U_R to be applied for 30min >24h before measurement

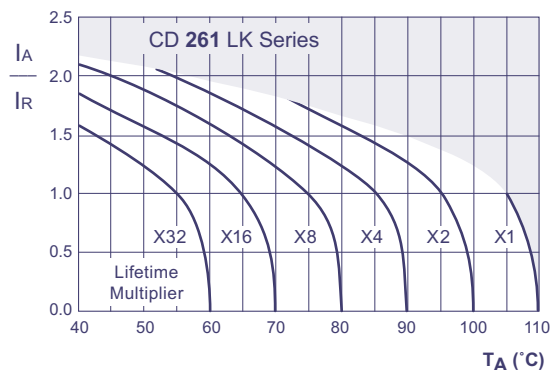
Multiplier for Ripple Current

Frequency Coefficient

Frequency	50Hz	120Hz	1kHz	10kHz	100kHz
Coefficient	0,30	0,50	0,80	0,90	1,00

Multiplier for Lifetime

Lifetime Diagram



I_a = actual ripple current at 100kHz, I_r = rated ripple current at 100kHz, 105°C
Multiplier of Useful Life as a function of ambient temperature and ripple current load

Ratings for CD 261 LK Series

U _{R,DC} (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 100Hz	Typ ESR 20°C, 100Hz	Max Ripple Current 105°C, 100kHz	Size Ø D x L	
(V)	(µF)	(Ω)	(Ω)	(mA _{rms})	(mm)	
160 (200) 2C	10	23,9	8,0	250	10 x 16	
	22	10,9	3,6	500	10 x 20	
	33	7,2	2,5	500	10 x 20	
	47	5,1	1,7	660	12,5 x 20	
	68		3,5	1,2	760	12,5 x 25
			3,5	1,2	760	16 x 20
	100		2,4	0,80	1 120	16 x 25
			2,4	0,80	1 120	18 x 20
	150		1,6	0,50	1 360	16 x 31,5
			1,6	0,50	1 360	18 x 25
	220		1,1	0,35	1 400	16 x 31,5
			1,1	0,35	1 400	18 x 25
200 (250) 2D	10	23,9	8,0	250	10 x 16	
	22	10,9	3,6	500	10 x 20	
	33	7,2	2,4	600	12,5 x 20	
	47	5,1	1,7	660	12,5 x 20	
	68		3,5	1,2	760	12,5 x 25
			3,5	1,2	760	16 x 20
	100		2,4	0,80	1 120	16 x 25
			2,4	0,80	1 120	18 x 20
	150		1,6	0,50	1 360	16 x 31,5
			1,6	0,50	1 360	18 x 25
	220	1,1	0,35	1 700	18 x 31,5	
	250 (300) 2E	10	23,9	8,0	280	10 x 20
22		10,9	3,5	600	12,5 x 20	
33		7,2	2,5	600	12,5 x 20	
47			5,1	1,7	720	12,5 x 25
			5,1	1,7	720	16 x 20
68			3,5	1,2	920	16 x 25
			3,5	1,2	920	18 x 20
100			2,4	0,80	1 200	16 x 31,5
			2,4	0,80	1 200	18 x 25
150	1,6	0,50	1 500	18 x 31,5		
350 (400) 2V	6,8	46,8	16,0	220	10 x 16	
	10	31,8	11,0	280	10 x 20	
	22	14,5	5,0	350	12,5 x 20	
	33	9,7	3,5	500	16 x 20	
	47		6,8	2,3	660	16 x 25
			6,8	2,3	660	18 x 20
	68		4,7	1,6	850	16 x 31,5
			4,7	1,6	850	18 x 25

U _{R,DC} (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 100Hz	Typ ESR 20°C, 100Hz	Max Ripple Current 105°C, 100kHz	Size Ø D x L	
(V)	(µF)	(Ω)	(Ω)	(mA _{rms})	(mm)	
400 (450) 2G	6,8	46,8	16,0	220	10 x 16	
	10	31,8	11,0	280	10 x 20	
	22		14,5	5,0	430	12,5 x 25
			14,5	5,0	430	16 x 20
	33		9,7	3,5	640	16 x 25
			9,7	3,5	640	18 x 20
	47		6,8	2,3	840	16 x 31,5
			6,8	2,3	840	18 x 25
	68	4,7	1,6	1 000	18 x 31,5	
	450 (500) 2W	6,8	46,9	16,0	150	10 x 20
10		31,8	11,0	320	12,5 x 20	
22			14,5	5,0	560	16 x 25
			14,5	5,0	560	18 x 20
33			9,7	3,5	700	16 x 31,5
			9,7	3,5	700	18 x 25
47		6,8	2,3	880	18 x 31,5	
68		4,7	1,6	1 130	18 x 35,5	

Radial

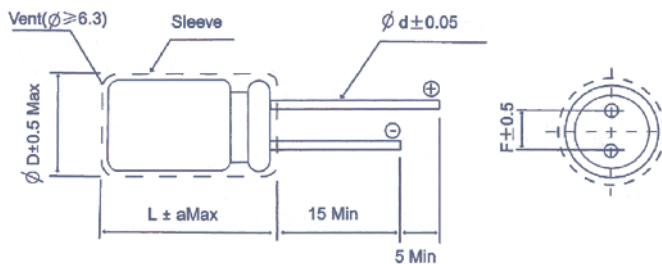
Customer specific products and adaptations on request.

Order Code **SMD, Radial, Snap-In**

EC	R	1C	PT	101	M	FF	25	0611	JExxxx
Technology	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code (in μF)	Capacitance Tolerance	Lead Form	Terminal/Pitch Size	Size $\varnothing D \times L$	for Specials only
EC = Electrolytic Capacitor	SMD = V	2,5V = 0E	CD 110 = PT	0,47 = R47	$\pm 20\%$ = M	SMD:		4x7 = 0407	
	Radial = R	4V = 0G	CD 11GL = GL	1,0 = 010	$\pm 10\%$ = K	Taped = FF	Terminal = T2	5x11,5 = 0511	
PC = Polymer Capacitor	Snap-In = S	6,3V = 0J	CD 261 = LK	2,2 = 2R2	+20 / -0% = R	Radial:		6,3x11,5 = 0611	
		10V = 1A	CD 261X = QX	10 = 100	+20 / -10% = V	Taped = FF	2,0mm = 20	35x80 = 3580	
		16V = 1C	CD 262 = QM	100 = 101	+30 / -10% = Q	Long Lead = LL	2,5mm = 25	45x100 = 45100	
		20V = 1D	CD 263 = BK	1000 = 102	+50 / -10% = T	Cut 5,0mm = CB	3,5mm = 35		
		25V = 1E	CD 269 = PH	10000 = 103		Cut 4,5mm = CC	5,0mm = 50		
		35V = 1V	CD 269L = HL			Cut 4,0mm = CD	7,5mm = 75		
		40V = 1G	CD 281 = LL			Cut 3,5mm = CE	10,0mm = 10		
		50V = 1H	CD 281L = LH			Cut 3,0mm = CF	12,5mm = 12		
		63V = 1J	CD 287 = GC			on request: alternative lead forms (Keyed Polarity, axial, 90° - angle, others)			
		80V = 1K	CD 28L = QL			Snap-In:			
		100V = 2A	CD 293 = BZ			4,0mm Pin Length = T4	2 Pin = P2		
		160V = 2C	CD 294 = BW			6,3mm Pin Length = T6	3 Pin = P3		
		180V = 2K	CD 295 = BC			Soldering Pin = S4	4 Pin = P4		
		200V = 2D	CD 296 = KC				5 Pin = P5		
		250V = 2E	CD 297 = BB			preferred			
		315V = 2F	CD 299 = PG						
		350V = 2V	CD 29D = HR						
		385V = 2J	CD 29H = QH						
		400V = 2G	CD 29L = QL						
		415V = 2P	HVC = VC						
		420V = 2X	HVM = VM						
		450V = 2W	HCP/HCN = CP/CN						
		500V = 2H	HPN = PN						
		550V = 2Y	HPE/HEN = PE/EN						

Technical Specification **Radial Type**

Dimensions for loose, long-lead type (bulk)
Order Code: LL



L	L ≤ 7					L ≥ 11										
$\varnothing D$	3	4	5	6,3	8	5	6,3	8	10	12,5	16	18	20	22	25	
F	1	1,5	2,0	2,5	3,5	2,0	2,5	3,5	5,0	7,5	10,0	12,5				
$\varnothing d$	0,4	0,45		0,5		0,6		0,8		1,0						
a_{Max}	1,0					2,0										

in mm

Dimensions for loose, short cut leads (bulk)
Order Code: CC (CB, CD, CE, CF)

Straight Lead						Bended Lead	
Code	CB	CC	CD	CE	CF		
I	5,0 ± 0,5	4,5 ± 0,5	4,0 ± 0,5	3,5 ± 0,5	3,0 ± 0,5		

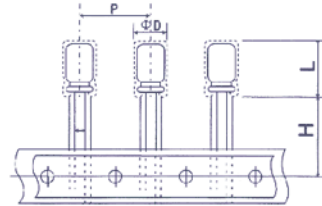
in mm

Dimensions for Ammopack taping

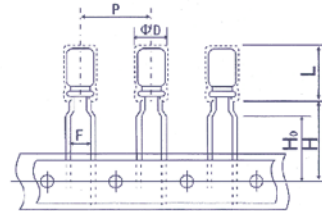
Order Code: FF (FD)

Code	Case Range		Dimensions				Form
	Ø D	L (max)	H ± 0,75	Ho ± 0,5	F ± 0,5	P ± 0,1	
FF	4 ~ 5	13	18,5	17	2,5	12,7	B
	6,3	13	18,5	-	2,5	12,7	A
	8	13	18,5	-	3,5	12,7	
	4 ~ 8	7	17,5	16	5,0	12,7	B
	5 ~ 6,3	13	18,5				
	8	22	20,0				A
	10	22	18,5	-	15,0		
12,5	27	18,5	-				
FD	12,5	27	18,5	-		25,4	C
FF	16 ~ 18	27	18,5	-	7,5	30,0	

Form A



Form B



Form C

