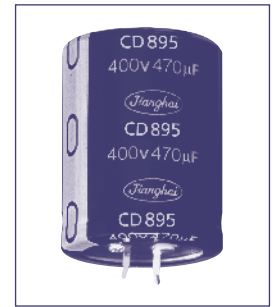
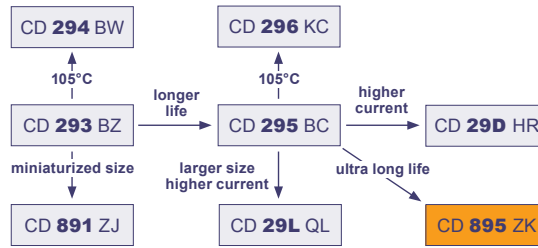


CD 895 ZK Series



14 000h at 85°C

· Ultra Long Life 85°C



Item	Characteristics	
Operating Temperature Range (°C)	-40 ~ +85	-25 ~ +85
Voltage Range (V)	16 ~ 100	160 ~ 500
Capacitance Range (µF)	39 ~ 47 000	
Capacitance Tolerance (20°C, 120Hz)	± 20%	
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0,01CV or 1,5mA, whichever is smaller C: Nominal Capacitance (µF) V: Rated Voltage (V)	
Dissipation Factor (20°C, 120Hz)	Rated Voltage (V)	16 25 35 50 63~100 160~400 450~500
	Tan δ (max)	0,50 0,40 0,35 0,30 0,20 0,15 0,20
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	16~100 160~200 250~500
	$Z_{-25°C} / Z_{+20°C}$	4
	$Z_{-40°C} / Z_{+20°C}$	15 -

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	14 000h	>150 000h	6 000h	9 000h	1 000h
Leakage Current	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value
Capacitance Change	Within ± 30% of initial value		Within ± 20% of initial value	Within ± 20% of initial value	Within ± 15% of initial value
Dissipation Factor	Not more than 300% of specified value		Not more than 200% of specified value	Not more than 130% of specified value	Not more than 150% of specified value
Condition:					
Applied Voltage	U_R	U_R	U_R	U_R	$U_R = 0$
Applied Current	I_R	$1,5 \times I_R$	I_R	$I_R = 0$	$I_R = 0$
Applied Temperature	85°C	40°C	85°C	85°C	85°C
Outlier Percentage	≤ 1%	≤ 1%	0%, guaranteed	IEC 60384	0%
					After test: U_R to be applied for 30min >24h before measurement

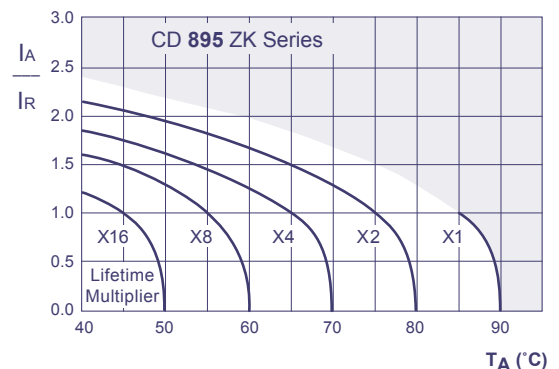
Multiplier for Ripple Current

Frequency Coefficient

Rated Voltage (V)	Frequency				
	50Hz	120Hz	1kHz	10kHz	≥ 20kHz
≤ 100	0,95	1,00	1,10	1,15	1,15
160 ~ 250	0,87	1,00	1,11	1,18	1,20
≥ 350	0,80	1,00	1,14	1,14	1,20

Multiplier for Lifetime

Lifetime Diagram



I_A = actual ripple current at 120Hz, I_R = rated ripple current at 120Hz, 85°C
Multiplier of Useful Life as a function of ambient temperature and ripple current load

Ratings for CD 895 ZK Series

U _{R,DC} (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Max Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	(mΩ)	(mΩ)	(Arms)	(mm)
16 (20) 1C	6800	98	69	1,68	22 x 25
	10000	67	47	2,09	22 x 30
		67	47	2,09	25 x 25
	12000	56	39	2,39	22 x 35
		56	39	2,41	25 x 30
		56	39	2,50	30 x 25
	15000	45	31	2,77	22 x 40
		45	31	2,81	25 x 35
	18000	37	26	3,13	22 x 45
		37	26	3,19	25 x 40
		37	26	3,15	30 x 30
		37	26	3,26	35 x 25
	22000	31	22	3,57	25 x 45
		31	22	3,56	30 x 35
	27000	25	18	4,00	25 x 50
		25	18	4,02	30 x 40
		25	18	3,92	35 x 30
	33000	21	15	4,52	30 x 45
		21	15	4,45	35 x 35
	39000	18	12	4,98	30 x 50
18		12	4,96	35 x 40	
47000	15	10	5,53	35 x 45	
25 (32) 1E	4700	113	80	1,63	22 x 25
	6800	79	55	2,01	22 x 30
		79	55	2,01	25 x 25
	8200	65	46	2,25	22 x 35
		65	46	2,27	25 x 30
		65	46	2,36	30 x 25
	10000	54	38	2,52	22 x 40
		54	38	2,56	25 x 35
	12000	45	31	2,83	22 x 45
		45	31	2,88	25 x 40
		45	31	2,84	30 x 30
		45	31	2,94	35 x 25
	15000	36	25	3,31	25 x 45
		36	25	3,29	30 x 35
		36	25	3,38	35 x 30
	18000	30	21	3,72	25 x 50
		30	21	3,72	30 x 40
	22000	25	17	4,45	30 x 45
		25	17	4,16	35 x 35
	27000	20	14	4,99	35 x 45
33000	17	12	5,66	35 x 50	
35 (44) 1V	3300	141	99	1,50	22 x 25
	3900	120	84	1,73	22 x 30
	4700	99	70	1,87	25 x 25
	5600	83	59	2,12	22 x 35
		83	59	2,14	25 x 30
	6800	83	59	2,22	30 x 25
		69	48	2,39	22 x 40
	8200	69	48	2,43	25 x 35
		57	40	2,80	22 x 50
		57	40	2,73	25 x 40
	10000	57	40	2,69	30 x 30
		57	40	2,92	35 x 25
		47	33	3,07	25 x 45
	12000	47	33	3,07	30 x 35
		39	28	3,42	25 x 50
	15000	39	28	3,44	30 x 40
		39	28	3,36	35 x 30
	18000	31	22	3,93	30 x 45
		31	22	3,88	35 x 35
	22000	26	19	4,37	35 x 40
22000	22	15	5,17	35 x 50	

U _{R,DC} (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Max Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	(mΩ)	(mΩ)	(Arms)	(mm)
50 (63) 1H	1800	222	155	1,37	22 x 25
	2200	181	127	1,53	22 x 30
	2700	148	104	1,79	22 x 30
		148	104	1,79	25 x 25
	3300	121	85	2,05	22 x 35
		121	85	2,10	25 x 30
		103	72	2,36	22 x 40
	3900	103	72	2,39	25 x 35
		103	72	2,33	30 x 25
		85	60	2,69	22 x 45
	4700	85	60	2,71	30 x 30
		85	60	2,80	35 x 25
		72	50	3,03	22 x 50
	5600	72	50	2,95	25 x 40
		72	50	3,10	30 x 35
		59	41	3,54	25 x 50
	6800	59	41	3,56	30 x 40
		59	41	3,48	35 x 30
		49	34	3,90	30 x 45
	50 (63) 1H	8200	49	34	3,84
10000		40	28	4,29	30 x 50
63 (79) 1J	12000	40	28	4,27	35 x 40
	12000	34	24	4,73	35 x 45
	1200	222	155	1,31	22 x 25
	1800	148	104	1,60	22 x 30
		148	104	1,60	25 x 25
	2200	121	85	1,82	22 x 35
		121	85	1,84	25 x 30
	2700	99	69	2,07	22 x 40
		99	69	2,09	25 x 35
		99	69	2,03	30 x 25
	3300	81	57	2,44	22 x 50
		81	57	2,38	25 x 40
		81	57	2,35	30 x 30
		81	57	2,53	35 x 25
	3900	68	48	2,67	25 x 45
		68	48	2,68	30 x 35
	4700	57	40	3,02	25 x 50
		57	40	3,05	30 x 40
		57	40	2,97	35 x 30
	5600	48	34	3,44	30 x 45
48		34	3,40	35 x 35	
6800	40	28	3,92	30 x 50	
	40	28	3,90	35 x 40	
8200	33	23	4,37	35 x 45	
10000	27	19	4,92	35 x 50	
80 (100) 1K	820	324	227	1,17	22 x 25
	1000	266	186	1,31	22 x 25
	1200	222	155	1,46	22 x 30
		222	155	1,46	25 x 25
	1500	177	124	1,69	22 x 35
		177	124	1,70	25 x 30
	1800	148	104	1,92	22 x 40
		148	104	1,90	30 x 25
	2200	121	85	2,19	22 x 45
		121	85	2,11	25 x 35
		121	85	2,20	30 x 30
		121	85	2,28	35 x 25
	2700	99	69	2,55	25 x 45
		99	69	2,55	30 x 35
	3300	81	57	2,90	25 x 50
		81	57	2,92	30 x 40
		81	57	2,85	35 x 30
	3900	69	48	3,28	30 x 45
		69	48	3,22	35 x 35
		57	40	3,74	30 x 50
4700	57	40	3,68	35 x 40	
	48	34	4,06	35 x 45	
6800	40	28	4,40	35 x 50	

Snap-In

Customer specific products and adaptations on request.

Ratings for CD 895 ZK Series

U _{R,DC} (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Max Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	(mΩ)	(mΩ)	(Arms)	(mm)
100 (125) 2A	560	474	332	1,12	22 x 25
	820	324	227	1,42	22 x 30
		324	227	1,42	25 x 25
	1000	266	186	1,62	22 x 35
		266	186	1,64	25 x 30
	1200	222	155	1,83	22 x 40
		222	155	1,85	25 x 35
		222	155	1,80	30 x 25
	1500	177	124	2,09	22 x 45
		177	124	2,13	25 x 40
		177	124	2,10	30 x 30
		177	124	2,17	35 x 25
	1800	148	104	2,39	25 x 45
		148	104	2,38	30 x 35
	2200	121	85	2,70	25 x 50
		121	85	2,72	30 x 40
		121	85	2,65	35 x 30
	2700	99	69	3,09	30 x 45
		99	69	3,05	35 x 35
	3300	81	57	3,49	30 x 50
81		57	3,48	35 x 40	
3900	69	48	3,88	35 x 45	
4700	57	40	4,35	35 x 50	
160 (200) 2C	330	603	423	1,22	22 x 25
	390	511	358	1,50	22 x 30
	470	424	297	1,60	22 x 35
		424	297	1,63	25 x 25
	560	356	249	1,70	22 x 40
		356	249	1,82	25 x 30
	680	293	205	1,79	22 x 45
		293	205	1,90	25 x 35
		293	205	1,91	30 x 25
	820	243	170	1,90	22 x 50
		243	170	2,08	25 x 40
		243	170	2,08	30 x 30
		243	170	2,03	35 x 25
	1000	199	140	2,14	25 x 45
		199	140	2,25	30 x 35
	1200	166	117	2,23	25 x 50
		166	117	2,33	30 x 40
		166	117	2,52	35 x 30
	1500	133	93	2,58	30 x 45
		133	93	2,66	35 x 35
1800	111	78	3,13	35 x 45	
2200	91	64	3,26	35 x 50	
180 (225) 2K	270	737	516	1,13	22 x 25
	330	603	423	1,37	22 x 30
	390	511	358	1,42	25 x 25
	470	424	297	1,58	22 x 35
		424	297	1,70	25 x 30
	560	356	249	1,70	22 x 40
		356	249	1,77	25 x 35
		356	249	1,75	30 x 25
	680	293	205	1,85	22 x 50
		293	205	1,81	25 x 40
		293	205	1,83	30 x 30
		293	205	2,02	35 x 25
	820	243	170	1,87	25 x 45
		243	170	1,94	30 x 35
	1000	199	140	2,00	25 x 50
		199	140	2,11	30 x 40
		199	140	2,27	35 x 30
	1200	166	117	2,30	30 x 45
		166	117	2,46	35 x 35
	1500	133	93	2,48	30 x 50
133		93	2,69	35 x 40	
1800	111	78	2,80	35 x 45	

U _{R,DC} (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Max Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	(mΩ)	(mΩ)	(Arms)	(mm)
200 (250) 2D	220	905	634	1,13	22 x 25
	270	737	516	1,26	22 x 30
	330	603	423	1,36	22 x 30
		603	423	1,42	25 x 25
	390	511	358	1,48	22 x 35
	470	424	297	1,58	22 x 40
		424	297	1,54	25 x 30
		424	297	1,64	30 x 25
	560	356	249	1,66	22 x 45
		356	249	1,73	25 x 35
	680	293	205	1,76	22 x 50
		293	205	1,89	25 x 40
		293	205	1,91	30 x 30
		293	205	2,06	35 x 25
	820	243	170	1,96	25 x 50
		243	170	2,09	30 x 35
		243	170	2,17	35 x 30
	1000	199	140	2,28	30 x 45
		199	140	2,33	35 x 35
	1200	166	117	2,33	30 x 50
166		117	2,54	35 x 40	
1500	133	93	2,72	35 x 45	
1800	111	78	2,84	35 x 50	
250 (300) 2E	180	1106	774	0,99	22 x 25
	220	905	634	1,15	22 x 30
		905	634	1,21	25 x 25
	270	737	516	1,19	22 x 35
	330	603	423	1,26	22 x 40
		603	423	1,37	25 x 30
	390	603	423	1,37	30 x 25
		511	358	1,32	22 x 45
		511	358	1,48	25 x 35
	470	424	297	1,44	22 x 50
		424	297	1,60	25 x 40
		424	297	1,43	30 x 30
		424	297	1,47	35 x 25
	560	356	249	1,67	25 x 45
		356	249	1,65	30 x 35
	680	356	249	1,64	35 x 30
		293	205	1,85	25 x 50
		293	205	1,85	30 x 40
	820	243	170	1,92	30 x 45
		243	170	1,91	35 x 35
1000	199	140	1,96	30 x 50	
	199	140	2,09	35 x 40	
1200	166	117	2,20	35 x 45	
350 (400) 2V	68	2926	1610	0,59	22 x 25
	100	1990	1095	0,74	22 x 30
		1990	1095	0,74	25 x 25
	120	1658	912	0,77	22 x 35
		1327	730	0,83	22 x 40
		1327	730	0,86	25 x 30
	150	1327	730	0,86	30 x 25
		1106	608	0,85	22 x 45
		1106	608	0,93	25 x 35
		1106	608	0,95	30 x 30
	180	905	498	0,98	22 x 50
		905	498	1,01	25 x 40
		905	498	1,03	35 x 25
	220	737	406	1,06	25 x 50
		737	406	1,10	30 x 35
		737	406	1,06	35 x 30
	330	603	332	1,22	30 x 45
		603	332	1,22	35 x 35
	390	511	281	1,32	30 x 50
		511	281	1,32	35 x 40
470	424	233	1,42	35 x 45	
	356	196	1,59	35 x 50	

Customer specific products and adaptations on request.

U _{R,DC} (Surge Voltage) Code	Rated Capa- citance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Max Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	(mΩ)	(mΩ)	(Arms)	(mm)
400 (450) 2G	68	2926	1522	0,49	22 x 25
	82	2427	1262	0,59	22 x 30
		2427	1262	0,68	25 x 25
	100	1990	1035	0,63	22 x 30
	120	1658	863	0,67	22 x 35
		1658	863	0,74	25 x 30
		1658	863	0,82	30 x 25
	150	1327	690	0,74	22 x 40
		1327	690	0,77	25 x 35
	180	1106	575	0,82	22 x 50
		1106	575	0,86	25 x 40
		1106	575	0,87	30 x 30
		1106	575	0,90	35 x 25
	220	905	471	0,91	25 x 45
		905	471	0,90	30 x 35
	270	737	384	0,99	25 x 50
		737	384	1,00	30 x 40
		737	384	0,96	35 x 30
330	603	314	1,17	30 x 45	
	603	314	1,19	35 x 35	
390	511	266	1,21	30 x 50	
	511	266	1,32	35 x 40	
470	424	221	1,38	35 x 45	
560	356	185	1,58	35 x 50	
450 (500) 2W	56	4737	2369	0,49	22 x 25
	68	3903	1951	0,59	22 x 30
		3903	1951	0,68	25 x 25
	82	3236	1618	0,67	22 x 35
	100	2653	1327	0,74	22 x 40
		2653	1327	0,74	25 x 30
		2653	1327	0,82	30 x 25
	120	2211	1106	0,77	22 x 45
		2211	1106	0,77	25 x 35
	150	1769	885	0,82	22 x 50
		1769	885	0,86	25 x 40
		1769	885	0,87	30 x 30
		1769	885	0,90	35 x 25
	180	1474	737	0,91	25 x 45
		1474	737	0,90	30 x 35
	220	1206	603	0,99	25 x 50
		1206	603	1,00	30 x 40
		1206	603	0,96	35 x 30
270	983	492	1,17	30 x 45	
	983	492	1,19	35 x 35	
330	804	402	1,21	30 x 50	
	804	402	1,32	35 x 40	
390	681	341	1,38	35 x 45	
470	565	283	1,58	35 x 50	
500 (550) 2H	39	6802	3401	0,37	22 x 30
	47	5644	2822	0,43	22 x 35
	56	4737	2369	0,49	22 x 40
	68	3901	1951	0,57	22 x 45
	82	3235	1618	0,65	25 x 40
	100	2653	1327	0,70	25 x 45
	120	2211	1106	0,81	25 x 50
		2211	1106	0,76	35 x 30
	150	1769	885	0,89	30 x 40
	180	1474	737	1,06	30 x 50
	220	1206	603	1,18	35 x 45
	270	983	492	1,35	35 x 50

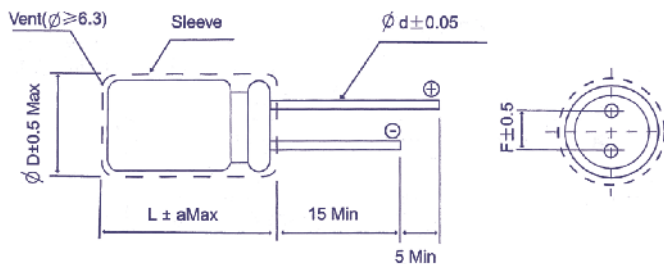
Order Code **SMD, Radial, Snap-In**

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			on request: alternative pin types				
		250V = 2E	CD 297 = BB			5 Pin = P5				
		315V = 2F	CD 299 = PG			preferred				
		350V = 2V	CD 29D = HR							
		385V = 2J	CD 29H = QH							
		400V = 2G	CD 29L = QL							
		415V = 2P	CD 891 = ZJ							
		420V = 2X	CD 892 = ZL							
		450V = 2W	CD 895 = ZK							
		500V = 2H								
		550V = 2Y	Polymer on request							

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	15,0	17,5	20,0
$\varnothing d$	0,4	0,45				0,5	0,6				0,8	1,0			
a_{Max}	1,0					2,0									

For diameter 20 pitch 7,5 on request.

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	

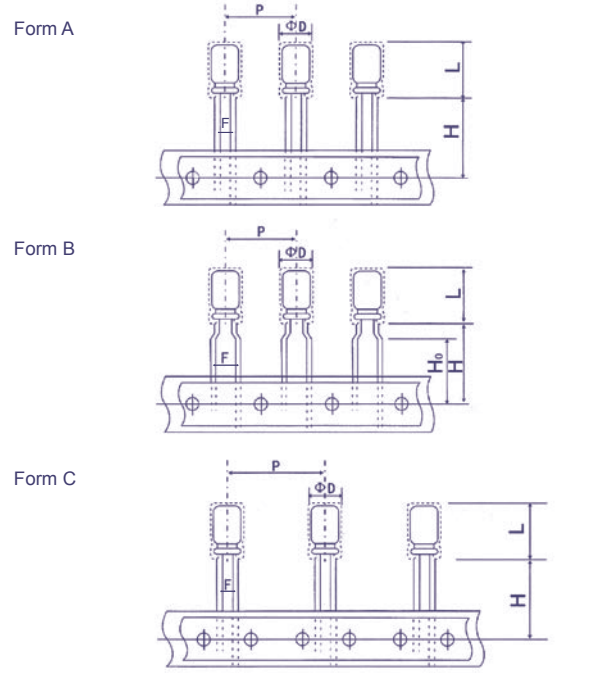
preferred

in mm

Dimensions for Ammopack taping

Order Code: FF (FD)

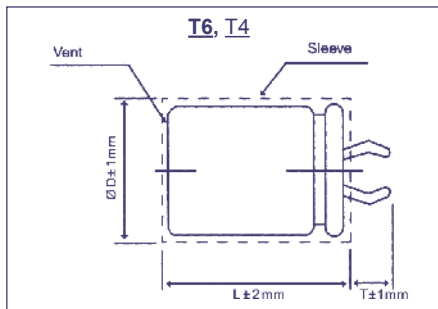
Code	Case Range		Dimensions				Form
	Ø D	L (max)	H ± 0,75	Ho ± 0,5	F ^{+0,8} _{-0,2}	P ± 0,1	
FF	4 ~ 5	13	18,5	-	2,5	12,7	B
	6,3	13	18,5	-	2,5	12,7	A
	8	13	18,5	-	3,5	12,7	
	4 ~ 8	7	17,5	16	5,0	12,7	B
	5 ~ 6,3	13	18,5				
	8	22	20,0				
		10	22	18,5	-	-	15,0
	12,5	27	18,5	-	-	-	C
FD	12,5	27	18,5	-	-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



in mm

Technical Specification Snap-In Type

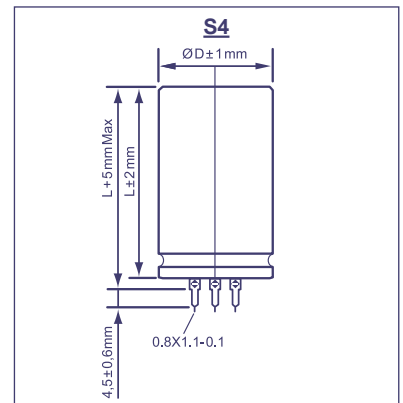
Pin Type: Snap-In Order Code: T6, T4



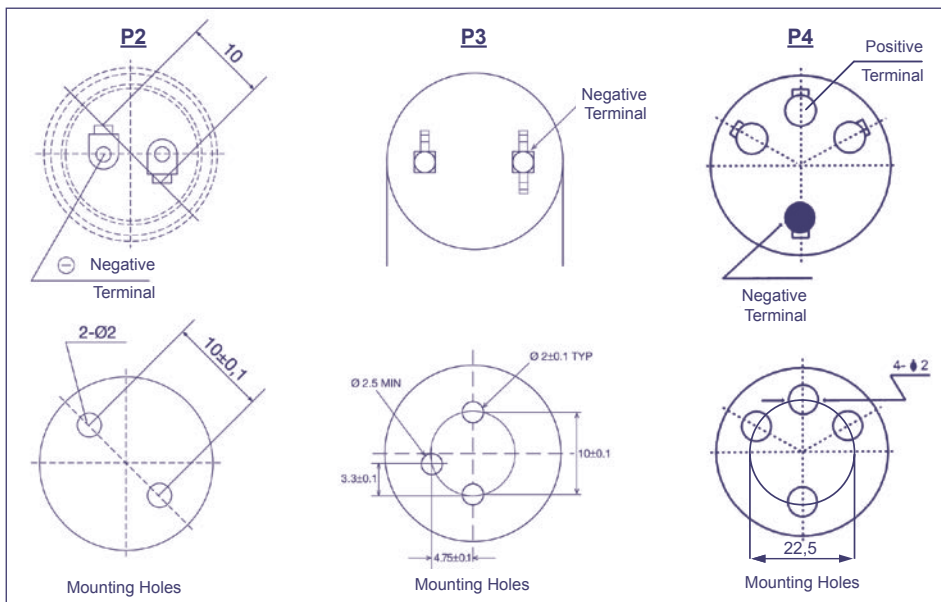
Terminal	T6	T4
Pin Length	6,3	4,0

preferred

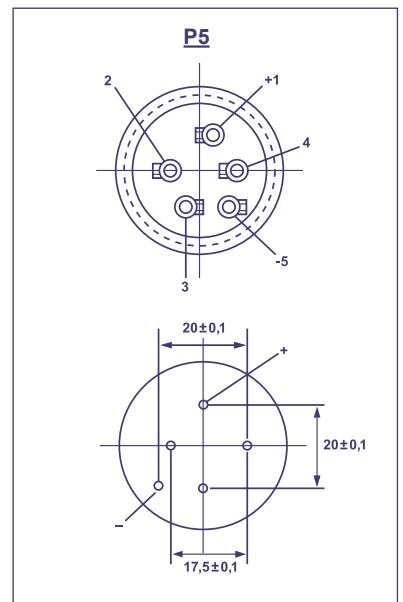
Pin Type: Soldering Order Code: S4



Snap-In Terminal Order Code: P2, P3, P4 and Mounting Holes (Top view)



Soldering Terminal Order Code: P5



P3 only as T4 Terminal available, P4 for Ø D ≥ 30mm, P5 for Ø D ≥ 40mm