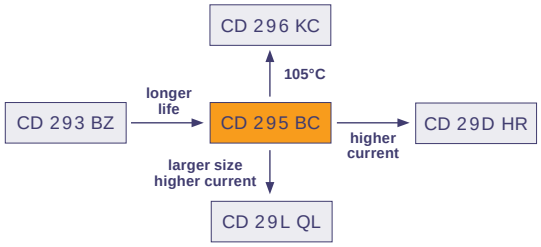
6000h at 85°C

· Long Life at 85°C
· High Ripple Current
· Long Life General Industrial Electronics



Item	Characteristics	
Operating Temperature Range (°C)	-40 ~ +85	-25 ~ +85
Voltage Range (V)	10 ~ 400	450
Capacitance Range (µF)	68 ~ 22 000	
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)	10	16	25	35	50	63~100	160~250	315~450
Tan δ (max)	0,80	0,60	0,50	0,40	0,30	0,20	0,15	0,15

Stability at Low Temperature (Impedance Ratio at 120Hz)

Rated Voltage (V)	10	16~35	50~100	160~200	250~400	450
$Z_{-25°C} / Z_{+20°C}$	5	4	3		4	
$Z_{-40°C} / Z_{+20°C}$	18	15	10	6	8	-

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	6 000h	>100 000h	5 000h	5 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
Capacity Change	Within ± 30% of initial value		Within ± 20% of initial value	Within ± 20% of initial value	Within ± 20% 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 200% of specified value
Condition:					
Applied Voltage	U_R	U_R	U_R	U_R	$U_R = 0$
Applied Current	I_R	1,2 x I_R	I_R	$I_R = 0$	$I_R = 0$
Applied Temperature	85°C	40°C	85°C	85°C	85°C
Failure Rate Level	≤ 1% Failure Rate	≤ 1% Failure Rate	guaranteed		

After test: U_R to be applied for 30min >24h before measurement

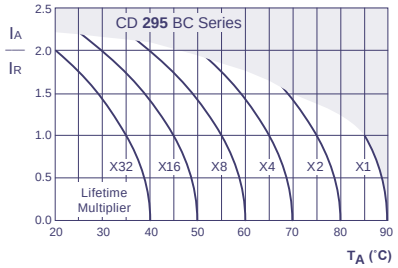
Snap-In

Multiplier for Ripple Current

Frequency Coefficient

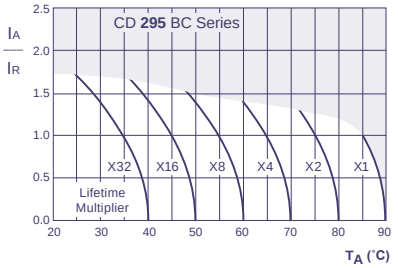
Rated Voltage (V) \ Frequency	50Hz	120Hz	1kHz	10kHz	100kHz
≤ 50	0,95	1,00	1,10	1,15	1,15
63 ~ 100	0,95	1,00	1,16	1,30	1,33
≥ 160	0,90	1,00	1,20	1,50	1,55

Lifetime Diagram U_R < 160V



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

Lifetime Diagram U_R ≥ 160V



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

V_{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)
10 (13) 1A	10000	107	75	2,5	22 x 25
	12000	89	62	2,7	22 x 25
	15000	71	50	3,2	22 x 30
		71	50	3,1	25 x 25
	18000	59	42	3,6	22 x 35
		59	42	3,6	25 x 30
	22000	49	34	4,0	22 x 40
		49	34	4,1	25 x 35
		49	34	4,1	30 x 25
16 (20) 1C	8200	98	68	2,2	22 x 25
	10000	80	56	2,6	22 x 30
		80	56	2,6	25 x 25
	12000	67	47	2,9	22 x 35
	15000	54	38	3,3	22 x 40
		54	38	3,3	25 x 30
		54	38	3,4	30 x 25
	18000	45	31	3,8	22 x 45
		45	31	3,7	25 x 35
	22000	37	26	4,2	22 x 50
		37	26	4,2	25 x 40
		37	26	4,2	30 x 30
		37	26	4,4	35 x 25
25 (32) 1E	5600	119	83	2,0	22 x 25
	6800	98	69	2,3	22 x 30
		98	69	2,3	25 x 25
	8200	81	57	2,6	22 x 35
	10000	67	47	2,9	22 x 40
		67	47	2,8	25 x 30
		67	47	3,0	30 x 25
	12000	56	39	3,3	22 x 45
		56	39	3,2	25 x 35
		56	39	3,4	30 x 30
	15000	45	31	3,7	25 x 40
		45	31	3,9	35 x 25
	18000	37	26	4,3	25 x 50
		37	26	4,2	30 x 35
		37	26	4,4	35 x 30
	22000	31	22	4,8	30 x 40
		31	22	5,0	35 x 35
35 (44) 1V	3300	161	113	1,8	22 x 25
	3900	137	96	2,1	22 x 30
	4700	113	80	2,2	25 x 25
	5600	95	67	2,3	22 x 35
		95	67	2,3	25 x 30
	6800	79	55	2,9	22 x 40
		79	55	2,6	25 x 35
		79	55	2,7	30 x 25
	8200	65	46	2,8	22 x 50
		65	46	2,8	25 x 40
		65	46	2,8	30 x 30
		65	46	2,9	35 x 25
	10000	54	38	3,1	25 x 45
		54	38	3,2	30 x 35
	12000	45	31	3,5	25 x 50
		45	31	3,5	30 x 40
		45	31	3,6	35 x 30
	15000	36	25	4,1	30 x 45
		36	25	4,1	35 x 35
	18000	30	21	4,6	30 x 50
		30	21	4,7	35 x 40
	22000	25	17	5,3	35 x 45
50 (63) 1H	2200	181	127	1,7	22 x 25
	2700	148	104	1,9	22 x 30
		148	104	1,9	25 x 25
	3300	121	85	2,0	25 x 30
	3900	103	72	2,1	22 x 35
		103	72	2,1	25 x 30
		103	72	2,4	30 x 25
	4700	85	60	2,4	22 x 40
		85	60	2,4	25 x 35
	5600	72	50	2,5	22 x 50
		72	50	2,5	25 x 40
		72	50	2,5	30 x 30
		72	50	2,6	35 x 25
	6800	59	41	2,8	25 x 45
		59	41	2,8	30 x 35
	8200	49	34	3,2	25 x 50
		49	34	3,0	30 x 40
		49	34	3,0	35 x 30
	10000	40	28	3,4	30 x 45
		40	28	3,4	35 x 35
	12000	34	24	3,8	30 x 50
		34	24	3,8	35 x 40
	15000	27	19	4,5	35 x 50

V_{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)
63 (79) 1J	1500	177	124	1,6	22 x 25
	1800	148	104	1,8	22 x 25
	2200	121	85	2,0	22 x 30
		121	85	2,0	25 x 25
	2700	99	69	2,2	22 x 35
		99	69	2,3	25 x 30
	3300	81	57	2,3	22 x 40
		81	57	2,3	25 x 35
		81	57	2,3	30 x 25
	3900	68	48	2,5	22 x 45
		68	48	2,6	25 x 40
		68	48	2,6	30 x 30
		68	48	2,7	35 x 25
	4700	57	40	2,9	30 x 30
	5600	48	34	3,1	25 x 45
		48	34	3,2	30 x 35
		48	34	3,3	35 x 30
	6800	40	28	3,6	30 x 40
		40	28	3,7	35 x 35
	8200	33	23	3,7	30 x 50
		33	23	3,8	35 x 40
	10000	27	19	4,3	35 x 45
	12000	23	16	4,8	35 x 50
80 (100) 1K	1000	266	186	1,3	22 x 25
	1200	222	155	1,5	22 x 30
	1500	177	124	1,7	25 x 25
	1800	148	104	1,9	22 x 35
		148	104	1,9	25 x 30
	2200	121	85	2,1	22 x 40
		121	85	2,2	25 x 35
		121	85	2,2	30 x 25
	2700	99	69	2,5	22 x 50
		99	69	2,5	25 x 40
		99	69	2,5	30 x 30
		99	69	2,5	35 x 25
	3300	81	57	2,8	25 x 45
		81	57	2,8	30 x 35
	3900	68	48	3,1	25 x 50
		68	48	3,2	30 x 40
		68	48	3,2	35 x 30
	4700	57	40	3,6	30 x 45
		57	40	3,6	35 x 35
	5600	48	34	3,8	30 x 50
		48	34	3,8	35 x 40
	6800	39	28	4,1	35 x 50
100 (125) 2A	680	391	274	1,1	22 x 25
	820	324	227	1,2	22 x 30
	1000	266	186	1,4	25 x 25
	1200	222	155	1,6	22 x 35
		222	155	1,6	25 x 30
	1500	177	124	1,8	22 x 40
		177	124	1,7	25 x 35
		177	124	1,8	30 x 25
	1800	148	104	2,1	22 x 50
		148	104	2,0	25 x 40
		148	104	2,1	30 x 30
		148	104	2,2	35 x 25
	2200	121	85	2,2	25 x 45
		121	85	2,3	30 x 35
		121	85	2,5	35 x 30
	2700	99	69	2,6	25 x 50
		99	69	2,7	30 x 40
	3300	81	57	3,0	30 x 45
		81	57	3,1	35 x 35
	3900	68	48	3,4	30 x 50
		68	48	3,4	35 x 40
	4700	57	40	4,0	35 x 50
160 (200) 2C	220	905	634	1,0	22 x 25
	270	737	516	1,1	22 x 25
	330	603	423	1,3	22 x 25
	390	511	358	1,5	22 x 30
		511	358	1,5	25 x 25
	470	424	297	1,7	25 x 25
	560	356	249	1,9	22 x 35
		356	249	1,9	25 x 30
		356	249	2,0	30 x 25
	680	293	205	2,1	22 x 40
		293	205	2,2	25 x 35
	820	243	170	2,5	22 x 50
		243	170	2,4	25 x 40
		243	170	2,5	30 x 30
		243	170	2,4	35 x 25
	1000	199	140	2,7	25 x 45
		199	140	2,8	30 x 35
		199	140	2,7	35 x 30

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Ratings for CD **295** BC Series

V_{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)
160 (200) 2C	1200	166	117	3,1	25 x 50
		166	117	3,2	30 x 40
		166	117	3,0	35 x 35
	1500	133	93	3,7	30 x 45
		133	93	3,5	35 x 40
	1800	111	78	3,9	35 x 45
	2200	91	64	4,5	35 x 50
180 (225) 2K	270	737	516	1,2	22 x 25
	330	603	423	1,4	22 x 30
	390	511	358	1,5	25 x 25
	470	424	297	1,7	22 x 35
		424	297	1,7	25 x 30
		424	297	1,8	30 x 25
	560	356	249	1,9	22 x 40
		356	249	2,0	25 x 35
	680	293	205	2,3	22 x 50
		293	205	2,2	25 x 40
		293	205	2,3	30 x 30
		293	205	2,2	35 x 25
	820	243	170	2,5	25 x 45
		243	170	2,6	30 x 35
		243	170	2,5	35 x 30
	1000	199	140	2,9	25 x 50
		199	140	2,9	30 x 40
	1200	166	117	3,3	30 x 45
		166	117	3,1	35 x 35
	1500	133	93	3,6	35 x 45
	1800	111	78	4,1	35 x 50
200 (250) 2D	220	905	634	1,1	22 x 25
	270	737	516	1,2	22 x 25
	330	603	423	1,4	22 x 30
		603	423	1,4	25 x 25
	390	511	358	1,6	22 x 35
		511	358	1,6	25 x 30
	470	424	297	1,8	22 x 40
		424	297	1,9	30 x 25
	560	356	249	2,0	22 x 45
		356	249	2,0	25 x 35
		356	249	2,1	30 x 30
		356	249	2,0	35 x 25
	680	293	205	2,3	25 x 40
		293	205	2,4	30 x 35
	820	243	170	2,6	25 x 50
		243	170	2,7	30 x 40
		243	170	2,5	35 x 30
	1000	199	140	3,1	30 x 45
		199	140	2,8	35 x 35
	1200	166	117	3,4	30 x 50
		166	117	3,2	35 x 40
	1500	133	93	3,8	35 x 50
250 (300) 2E	100	1990	1393	0,72	22 x 25
	180	1106	774	0,94	22 x 25
	220	905	634	1,1	22 x 30
		905	634	1,1	25 x 25
	270	737	516	1,2	22 x 35
	330	603	423	1,4	22 x 40
		603	423	1,4	25 x 30
		603	423	1,5	30 x 25
	390	511	358	1,6	22 x 45
		511	358	1,6	25 x 35
	470	424	297	1,8	22 x 50
		424	297	1,8	25 x 40
		424	297	1,8	30 x 30
		424	297	1,9	35 x 25
	560	356	249	2,0	25 x 45
		356	249	2,0	30 x 35
	680	293	205	2,3	30 x 40
		293	205	2,4	35 x 30
	820	243	170	2,6	30 x 45
		243	170	2,6	35 x 35
	1000	199	140	3,0	35 x 40
	1200	166	117	3,4	35 x 45
315 (365) 2F	100	1990	1393	0,67	22 x 25
	120	1658	1161	0,75	22 x 30
	150	1327	929	0,85	22 x 30
		1327	929	0,85	25 x 25
	180	1106	774	0,96	22 x 35
		1106	774	0,96	25 x 30
	220	905	634	1,1	22 x 40
		905	634	1,1	25 x 35
		905	634	1,1	30 x 25
	270	737	516	1,2	22 x 45
		737	516	1,3	25 x 40
		737	516	1,3	30 x 30
		737	516	1,3	35 x 25

V_{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)
315 (365) 2F	330	603	423	1,4	25 x 45
		603	423	1,4	30 x 35
	390	511	358	1,6	25 x 50
		511	358	1,6	30 x 40
		511	358	1,6	35 x 30
	470	424	297	1,8	30 x 45
		424	297	1,8	35 x 35
	560	356	249	2,0	30 x 50
		356	249	2,0	35 x 40
	680	293	205	2,3	35 x 45
350 (400) 2V	82	2427	1699	0,64	22 x 25
	100	1990	1393	0,72	22 x 25
	120	1658	1161	0,82	22 x 30
		1658	1161	0,81	25 x 25
	150	1327	929	0,94	22 x 35
		1327	929	0,94	25 x 30
	180	1106	774	1,1	22 x 40
		1106	774	1,1	30 x 25
	220	905	634	1,2	22 x 45
		905	634	1,2	25 x 35
		905	634	1,2	30 x 30
		905	634	1,3	35 x 25
	270	737	516	1,4	25 x 45
		737	516	1,4	30 x 35
	330	603	423	1,6	25 x 50
		603	423	1,6	35 x 30
	390	511	358	1,7	30 x 40
		511	358	1,8	35 x 35
	470	424	297	2,0	30 x 45
		424	297	2,0	35 x 40
	560	356	249	2,3	35 x 45
	680	293	205	2,6	35 x 50
	820	243	170	2,8	35 x 60
400 (450) 2G	68	2926	2048	0,55	22 x 25
	82	2427	1699	0,60	22 x 25
	100	1990	1393	0,70	22 x 30
		1990	1393	0,70	25 x 25
	120	1658	1161	0,79	22 x 35
	150	1327	929	0,90	22 x 40
		1327	929	0,89	25 x 30
		1327	929	0,95	30 x 25
	180	1106	774	1,0	22 x 45
		1106	774	1,0	25 x 35
		1106	774	1,1	30 x 30
		1106	774	1,2	35 x 25
	220	905	634	1,1	22 x 50
		905	634	1,2	25 x 40
		905	634	1,2	30 x 35
	270	737	516	1,3	25 x 45
		737	516	1,4	30 x 40
		737	516	1,6	35 x 30
	330	603	423	1,6	30 x 45
		603	423	1,7	35 x 35
	390	511	358	1,8	30 x 50
		511	358	1,8	35 x 40
	470	424	297	2,1	35 x 45
	560	356	249	2,3	35 x 50
450 (500) 2W	68	2926	2048	0,57	22 x 30
	82	2427	1699	0,64	22 x 35
	100	1990	1393	0,72	22 x 35
		1990	1393	0,73	25 x 30
	120	1658	1161	0,80	22 x 40
		1658	1161	0,83	25 x 35
	150	1327	929	0,95	22 x 50
		1327	929	0,95	25 x 40
		1327	929	0,98	30 x 30
	180	1106	774	1,1	25 x 45
		1106	774	1,1	30 x 35
		1106	774	1,2	35 x 25
	220	905	634	1,2	25 x 50
		905	634	1,3	30 x 40
		905	634	1,3	35 x 30
	270	737	516	1,4	30 x 45
		737	516	1,5	35 x 35
	330	603	423	1,7	30 x 50
	390	511	358	1,9	35 x 45
	470	424	297	2,2	35 x 50

Custom products are available on request.

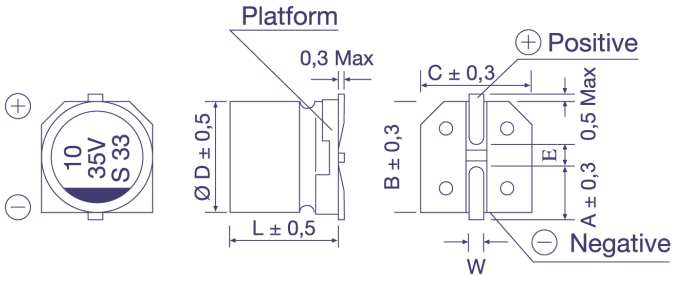
Part Number System

Order Code SMD, Radial, Snap-In

EC	R	1C	PT	101	M	FF	25	0611	JExxxxx
Technology	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code (in µF)	Capacitance Tolerance	Lead Form	Terminal/ Pitch Size	Dimension	for Specials only
EC = Electrolytic Capacitor	SMD = V	For coding please refer to the pages of ratings	CD VS = BS	0,47 = R47	±20% = M	SMD:		4x7 = 0407	
	Radial = R		CD VH = VH	1,0 = 010	±10% = K	Taped = FF	Terminal = T2	5x11,5 = 0511	
PC = Polymer Capacitor	Snap-In = S		CD VZ = VZ	2,2 = 2R2	+30 / -10% = Q	Radial:		6,3x11,5 = 0611	
			CD 261 = LK	100 = 101	+50 / -10% = T	Long Lead = LL	2,0mm = 20	35x80 = 3580	
			CD 261X = QX	1000 = 102		Cut 5,0mm = CB	2,5mm = 25	45x100 = 45100	
			CD 262 = QM	10000 = 103		Cut 4,5mm = CC	3,5mm = 35		
			CD 263 = BK			Cut 4,0mm = CD	5,0mm = 50		
			CD 269 = PH			Cut 3,5mm = CE	7,5mm = 75		
			CD 281 = LL			Cut 3,0mm = CF	10,0mm = 10		
			CD 284 = XY			on request: alternative lead forms (axial, 90° - angle, others)	12,5mm = 12		
			CD 287 = GC						
			CD 28L = QL			Snap-In:			
			CD 293 = BZ			4,0mm Pin Length = T4	2 Pin = P2		
			CD 294 = BW			6,3mm Pin Length = T6	3 Pin = P3		
			CD 295 = BC			Soldering Pin = S4	4 Pin = P4		
			CD 296 = KC				5 Pin = P5		
			CD 297 = BB						
			CD 299 = PG			**preferred**			
			CD 29D = HR						
			CD 29H = QH						
			CD 29L = QL						
			HCP = CP						
			HPM = PM						
			HVC = VC						

Technical Specification SMD Type

Dimensions

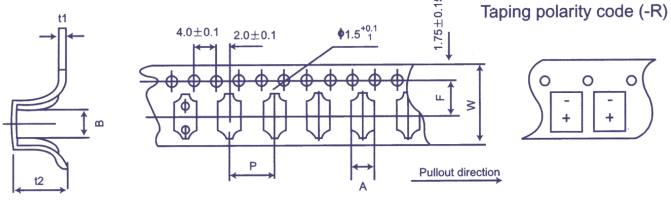


Ø D x L	4 x 5,4	5 x 5,4	6,3 x 5,4	6,3 x 7,7	8 x 10,5	8 x 11,8	10 x 10,5	10 x 12,7
A	1,8	2,1	2,4	2,5	2,9	2,9	3,2	3,2
B	4,3	5,3	6,6	6,6	8,3	8,4	10,3	10,4
C	4,3	5,3	6,6	6,6	8,3	8,4	10,3	10,4
E	1,0	1,3	2,2	2,2	3,1	3,1	4,5	4,5
L	5,4	5,4	5,4	7,7	10,5	11,8	10,5	12,7
W	0,5 - 0,8				0,7 - 1,1			

in mm

Taping Dimensions

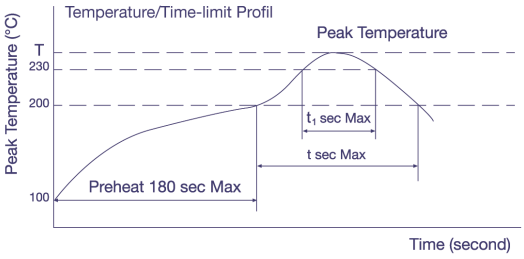
Unit:mm



Size (DxL)	w ± 0,3	A ± 0,2	B ± 0,2	P ± 0,1	t2 ± 0,2	F ± 0,1	t1 ± 0,1
4 x 5,4	12,0	5,0	5,0	8,0	5,8	5,5	0,4
5 x 5,4	12,0	6,0	6,0	12,0	5,8	5,5	0,4
6,3 x 5,4	16,0	7,0	7,0	12,0	5,8	7,5	0,4
6,3 x 7,7	16,0	7,0	7,0	12,0	8,4	7,5	0,4
8 x 10,5	24,0	8,7	8,7	16,0	11,0	11,5	0,5
8 x 11,8	24,0	8,7	8,7	16,0	12,3	11,5	0,5
10 x 10,5	24,0	10,7	10,7	16,0	11,0	11,5	0,5
10 x 12,7	24,0	10,7	10,7	16,0	14,0	11,5	0,5

in mm

Soldering Profile (Aluminium Electrolytic Capacitors)



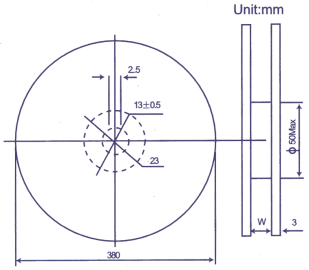
Allowable Range of Peak Temperature

Size	T (°C)	t (second)	t_1 (second)
Ø 4 ~ 6,3	250	90	40
Ø 8 x 10,5	240	90	30
Ø 10 x 10,5	235	60	30

Diameter	w	D
4; 5	14 ± 1	50 ± 1
6,3	18 ± 1	50 ± 1
8; 10	25 ± 1	50 ± 1
Polymer	25 ± 1	80 ± 1

in mm

Unit:mm

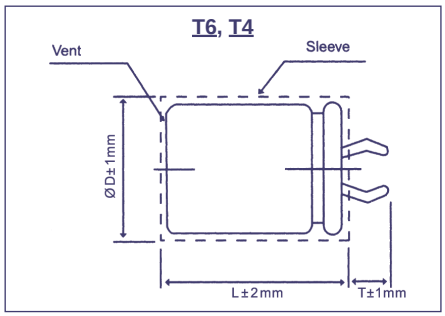


For more details or Soldering Profiles of Radials or Polymer-Capacitors please contact our local Sales Offices.

Direct Contact & Support: Jianghai Europe GmbH +49 (0)2151-652088-0 info@jianghai-europe.com www.jianghai-europe.com

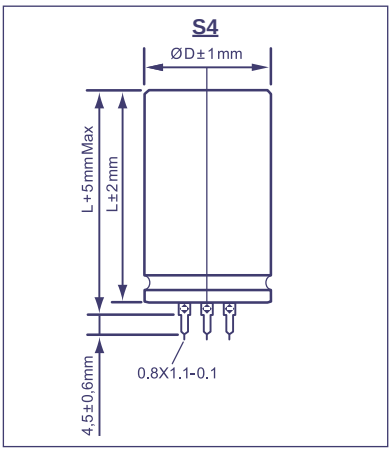
Technical Specification Snap-In Type

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

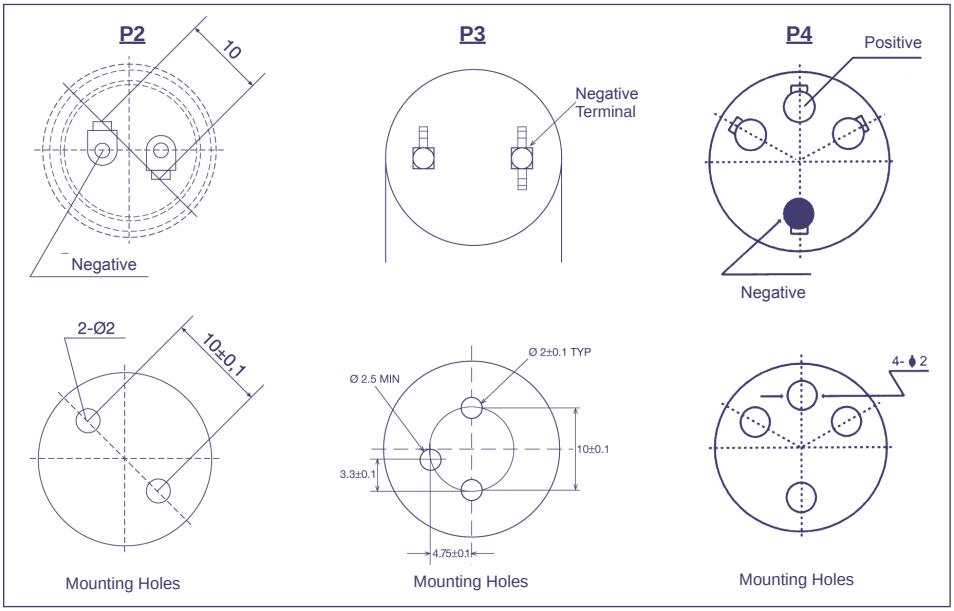


Terminal	T6	T4
Pin Length T	6,3	4,0

Pin Type: Soldering
Order Code: S4

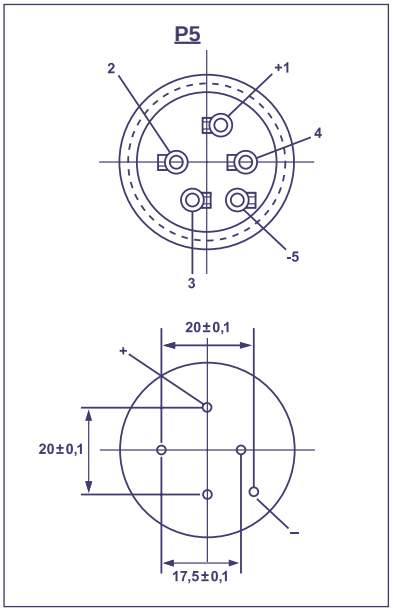


Snap-In Terminal
Order Code: P2, P3, P4



P3 only T4 Terminal

Soldering Terminal
Order Code: P5



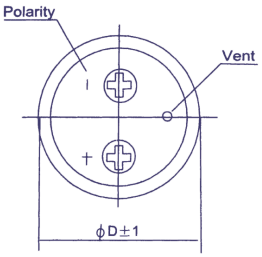
Order Code Screw Type

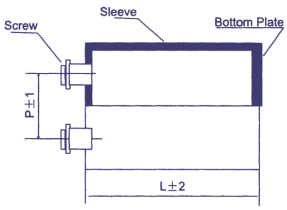
EC	G	1C	BP	101	M	B	E	160	A361	JExxxxx
Technology	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code	Capacitance Tolerance	Mounting	Diameter	Length	For Terminal Code see tables below	for Specials only
EC = Electrolytic Capacitor	Screw = G	For coding please refer to the pages of ratings	CD 135 = BP	100 = 101	±20% = M	Bolt = B	36 = A	53 = 053		
			CD 136 = PK	1000 = 102	±10% = K	No double sleeve = N	40 = B	65 = 065		
			CD 137 = PX	10000 = 103	+30 / -10% = Q	2 stoppers bracket + double sleeve* = I	51 = C	96 = 096		
			CD 138 = PC		+20 / -0% = R	3 stoppers bracket + double sleeve* = Y	64 = D	100 = 100		
			CD 139 = BL		+50 / -10% = T	No bracket, but double sleeve* = D	77 = E	115 = 115		
					preferred	* Double sleeve for diameter ≥ 51 only	90 = F	236 = 236		
							101 = G			

Technical Specification Screw Type

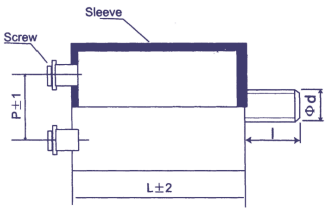
Dimensions

Standard Housing
Order Code: I, Y, D, N





Bolt Housing
Order Code: B



Ø D	Ø d	l
Ø 36	M8	12
≥ Ø 51	M12	16

in mm

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