CB Series

Tantalum Capacitors

Lead diameter = 0.5, Lead pitch = 5.0

Features:

- Specially designed of general purpose.
- Highly reliable resin dipped type.
- Excellent frequency and temperature characteristics.
- Non-flammable epoxy resin.

Specifications

<table>
<tr><th>Item</th><th>Performance Characteristics</th></tr>
<tr><td>Operating Temperature Range</td><td>-55 to +125°C (-55°C to +85°C for 6.3V)</td></tr>
<tr><td>Rated Working Voltage Range</td><td>6.3 to 35V dc</td></tr>
<tr><td>Nominal Capacitance Range</td><td>0.1 to 100µF</td></tr>
<tr><td>Capacitance Tolerance</td><td>±20%</td></tr>
<tr><td>Leakage Current</td><td>I ≤ 0.008CV or 0.5µA Whichever is greater measured after 2 minutes application of rated working voltage at +20°C</td></tr>
<tr><td>tanδ (120Hz, +20°C)</td><td>
<table>
<tr><td>Working Voltage (V)</td><td colspan="4">6.3 to 35V</td></tr>
<tr><td>Capacitance</td><td>0.1 to 1µF</td><td>2.2 to 6.8µF</td><td>10 to 68µF</td><td>≥100µF</td></tr>
<tr><td>tanδ (maximum)</td><td>0.04</td><td>0.06</td><td>0.08</td><td>0.1</td></tr>
</table>
</td></tr>
<tr><td>Characteristics at High and Low Temperature</td><td>
<table>
<tr><td>-55°C</td><td>Capacitance change</td><td>±12% of initial measured value at +20°C</td></tr>
<tr><td rowspan="2">+125°C</td><td>Leakage current</td><td>≤10% of initial measured value</td></tr>
<tr><td>Capacitance change</td><td>±12% of initial measured value at +20°C</td></tr>
</table>
</td></tr>
<tr><td>Moisture Resistance</td><td>
Test Conditions
<table>
<tr><td>Relative humidity</td><td>90 to 95% without load</td></tr>
<tr><td>Ambient temperature</td><td>+40°C</td></tr>
<tr><td>Duration</td><td>500 hours</td></tr>
</table>
Post test requirements at +20°C
<table>
<tr><td>Leakage current</td><td>≤0.012CV or 0.75µF, whichever is greater</td></tr>
<tr><td>Capacitance change</td><td>10% of initial measured value</td></tr>
<tr><td>tanδ</td><td>≤150% of initial specified value</td></tr>
</table>
</td></tr>
</table>

Specifications

Item	Performance Characteristics
Endurance	Test Conditions

Item \ Conditions	Derating (for 10 to 35V only)	Rating
Duration	1000 hours	2000 hours
Ambient temperature	+105°C	+85°C
Applied Voltage	Derated working voltage	Rated working voltage
Source impedance	1Ω/V	1Ω/V

Derating voltage +125°C for 10 to 35V working

Working Voltage (V) DC	10	16	25	35
Derating voltage (V) DC	6.3	10	16	23

Post test requirements at +20°C

Leakage current	≤ 0.01% CV or 00625µA, whichever is greater
Capacitance change	±10% of initial measured value
tanδ	≤ Initial specified value

Shelf Life

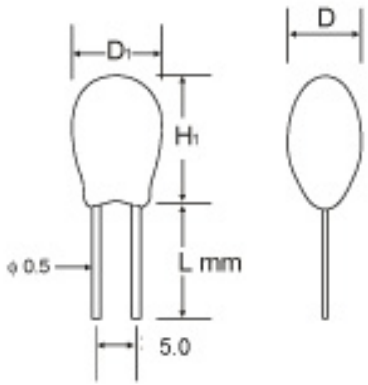
Test Conditions

Duration	2000 hours
Ambient temperature	+85°C
Applied Voltage	(none)

Post test requirements at +20°C

Same limits for "Endurance".

Tantalum Capacitor Dipped Type Outline Drawings



Wire Length (L)	18.20 ±1
Code	C

Case Size	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**
H_1 maximum	6.0	6.5	7.0		7.5	8.0	8.5	9.0	10.0	11.0	12.0	14.0	15.0	
D_1 maximum	4.0	4.5		5.0			5.5	6.0	6.5	7.5	8.0	9.0	10.0	10.5
D maximum	3.8	4.3		4.8			5.3							

Dimensions : Millimetres

Rated Voltage, Capacitance of Capacitors

VR (V)	6.3	10	16	25	35
Code	0J	1A	1C	1E	1V
Capacitance (µF)	Case Size				
0.10 (104)	-	-	-	-	A
0.15 (154)	-	-	-	-	
0.22 (224)	-	-	-	-	
0.33 (334)	-	-	-	-	
0.47 (474)	-	-	-	-	
0.68 (684)	-	-	-	-	
1.0 (105)	-	-	-	A	B
2.2 (225)	-	-	A	C	E
3.3 (335)	-	-	-	-	F
4.7 (475)	-	B	C	F	G
6.8 (685)	B		D	G	I
10.0 (106)	C	D	F	I	J
15.0 (156)	-	-	-	J	K
22.0 (226)	F	G	H	K	L
33.0 (336)	G	H	J	L	-
47.0 (476)	H	J	K	-	N
68.0 (686)	J	-	L	-	-
100.0 (107)	K	L	M	-	-

Leads and Solderability

Tinned radial leads, ϕ: 0.5.mim.

Lead pitch: 5.0mm

Solderability:

- Recommended soldering bath temperature: 260°C

-Time of immersion: 3S

The tin should cover 95% of wire surface.

Permissible pull test: 10N.

Ratings and Part Number Reference

Case Size	Capacitance (µF)	DCL (µA) Maximum	DF % Maximum	ESR Maximum (Ω) at 100KHz	Part Number
6.3V at 85°C (4V at 125°C)					
B	6.8	0.5	6	8.0	CB0J685M2BCB
C	10.0		8	6.0	CB0J106M2CCB
F	22.0	1.1		3.7	CB0J226M2FCB
G	33.0	1.7		3.0	CB0J336M2GCB
H	47.0	2.4		2.0	CB0J476M2HCB
J	68.0	3.4		1.8	CB0J686M2JCB
K	100.0	5.0	10	1.6	CB0J107M2KCB
10V at 85°C (6.3V at 125°C)					
B	4.7	0.5	6	8.0	CB1A475M2BCB
D	10.0	0.8	8	5.0	CB1A106M2DCB
G	22.0	1.7		2.7	CB1A226M2GCB
H	33.0	2.6		2.1	CB1A336M2HCB
J	47.0	3.7		1.7	CB1A476M2JCB
L	100.0	8.0	10	1.0	CB1A107M2LCB
16V at 85°C (10V at 125°C)					
A	2.2	0.5	6	8.0	CB1C225M2ACB
C	4.7	0.6		5.0	CB1C475M2CCB
D	6.8	0.8	8	4.0	CB1C685M2DCB
F	10.0	1.2		3.2	CB1C106M2FCB
H	22.0	2.8		2.0	CB1C226M2HCB
J	33.0	4.2		1.6	CB1C336M2JCB
K	47.0	6.0		1.3	CB1C476M2KCB
L	68.0	8.7		1.0	CB1C686M2LCB
M	100.0	12.8	10	0.8	CB1C107M2MCB
25V at 85°C (16V at 125°C)					
A	1.0	0.5	4	10.0	CB1E105M2ACB
C	2.2		6	6.0	CB1E225M2CCB
F	4.7	0.9		4.0	CB1E475M2FCB
G	6.8	6.8		3.1	CB1E685M2GCB
I	10.0	2.0	8	2.5	CB1E106M2ICB
J	15.0	3.0		2.0	CB1E156M2JCB
K	22.0	4.4		1.5	CB1E226M2KCB
L	33.0	6.6		1.2	CB1E336M2LCB

Ratings and Part Number Reference

Case Size	Capacitance (µF)	DCL (µA) Maximum	DF % Maximum	ESR Maximum (Ω) at 100KHz	Part Number
35V at 85°C (23V at 125°C)					
A	0.1	0.5	4	26.0	CB1V104M2ACB
	0.22			17.0	CB1V224M2ACB
	0.33			15.0	CB1V334M2ACB
	0.47			13.0	CB1V474M2ACB
	0.68			10.0	CB1V684M2ACB
B	1.0			8.0	CB1V105M2BCB
E	2.2	0.6	6	5.0	CB1V225M2ECB
F	3.3	0.9		4.0	CB1V335M2FCB
G	4.7	4.7		3.0	CB1V475M2GCB
I	6.8	1.9		2.5	CB1V685M2ICB
J	10.0	2.8	8	2.0	CB1V106M2JCB
K	15.0	4.2		1.6	CB1V156M2KCB
L	22.0	6.1		1.3	CB1V226M2LCB
N	47.0	10.0		0.8	CB1V476M2NCB

Part Number Explanation:

CB	0J	475	M	2	A	C	B
Type	Voltage	Capacitance	Tolerance	Pitch	Case Size	Wire Length	Quantity

Voltage : 0J, 1A, 1C, 1E and 1V.

Capacitance : First two digits are the base value and last digit represents the conversion factor.
Last digit 5 represents decimal point in base value,
in code 335, Capacitance value is 3.3, Similarly for 475, Capacitance is 4.7.
Last digit 4 represents two decimal point in base value,
in code 104, Capacitance value is 0.10, Similarly for 684, Capacitance is 0.68.
Last digit 6 represents no change in base value,
in code 336, Capacitance value is 33. Similarly for 476, Capacitance value is 47
Last digit 7 represents one zero is added to the base value,
in code 107, Capacitance value is 100.

Tolerance : M = ±20%.

Pitch : 2 (2 = 5mm).

Case Size : A, B, C, D, E, F, G, H, I, J, K, L, M and N.

Wire Length : C = 18.20 ±1.

Quantity : B = Bulk.

Notes:

International Sales Offices:

AUSTRALIA – Farnell InOne
Tel No: ++ 61 2 9645 8888
Fax No: ++ 61 2 9644 7898

FINLAND – Farnell InOne
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411

NETHERLANDS – Farnell InOne
Tel No: ++ 31 30 241 7373
Fax No: ++ 31 30 241 7333

SWITZERLAND – Farnell InOne
Tel No: ++ 41 1 204 64 64
Fax No: ++ 41 1 204 64 54

AUSTRIA – Farnell InOne
Tel No: ++ 43 662 2180 680
Fax No: ++ 43 662 2180 670

FRANCE – Farnell InOne
Tel No: ++ 33 474 68 99 99
Fax No: ++ 33 474 68 99 90

NEW ZEALAND – Farnell InOne
Tel No: ++ 64 9 357 0646
Fax No: ++ 64 9 357 0656

UK – Farnell InOne
Tel No: ++ 44 8701 200 200
Fax No: ++ 44 8701 200 201

BELGIUM – Farnell InOne
Tel No: ++ 32 3 475 2810
Fax No: ++ 32 3 227 3648

GERMANY – Farnell InOne
Tel No: ++ 49 89 61 39 39 39
Fax No: ++ 49 89 613 59 01

NORWAY – Farnell InOne
Tel No: ++ 45 44 53 66 66
Fax No: ++ 45 44 53 66 02

UK – BuckHickman InOne
++ 44 8450 510 150
++ 44 8450 510 130

BRAZIL – Farnell-Newark InOne
Tel No: ++ 55 11 4066 9400
Fax No: ++ 55 11 4066 9410

HONG KONG – Farnell-Newark InOne
Tel No: ++ 852 2268 9888
Fax No: ++ 852 2268 9899

PORTUGAL – Farnell InOne
Tel No: ++ 34 93 475 8804
Fax No: ++ 34 93 474 5288

UK – CPC
++ 44 8701 202 530
++ 44 8701 202 531

CHINA – Farnell-Newark InOne
Tel No: ++86 10 6238 5152
Fax No: ++86 10 6238 5022

IRELAND – Farnell InOne
Tel No: ++ 353 1 830 9277
Fax No: ++ 353 1 830 9016

SINGAPORE – Farnell-Newark InOne
Tel No: ++ 65 6788 0200
Fax No: ++ 65 6788 0300

EXPORT – Farnell InOne
Tel No: ++ 44 8701 200 208
Fax No: ++ 44 8701 200 209
For enquiries from all other markets

DENMARK – Farnell InOne
Tel No: ++ 45 44 53 66 44
Fax No: ++ 45 44 53 66 06

ITALY – Farnell InOne
Tel No: ++ 39 02 93 995 200
Fax No: ++ 39 02 93 995 300

SPAIN – Farnell InOne
Tel No: ++ 34 93 475 8805
Fax No: ++ 34 93 474 5107

ESTONIA – Farnell InOne
Tel No: ++ 358 9 560 7780
Fax No: ++ 358 9 345 5411

MALAYSIA – Farnell-Newark InOne
Tel No: ++ 60 3 7873 8000
Fax No: ++ 60 3 7873 7000

SWEDEN – Farnell InOne
Tel No: ++ 46 8 730 50 00
Fax No: ++ 46 8 83 52 62

http://www.farnellinone.com
http://www.buckhickmaninone.com
http://www.cpc.co.uk