

Solid Tantalum Chip Capacitors

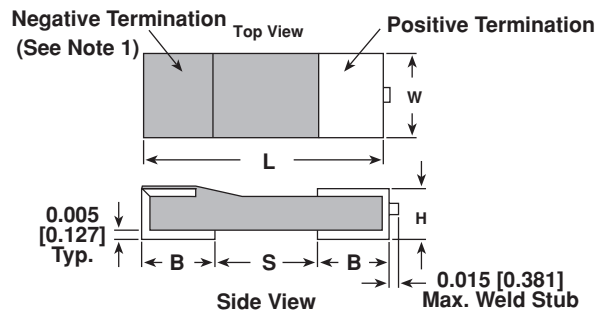
Conformal Coated


FEATURES

- Eight standard case codes, "pad compatible" with MIL-PRF-55365/4 (CWR06).
- High volumetric efficiency (Up to 200,000 CV per cubic inch).
- Low profile, conformal-coated construction.
- 100% low impedance power burn-in at + 85°C.
- Low ESR in high frequency applications.
- Packaging in 50 unit 'Blister-Pack' trays or 8mm or 12mm tape and reel.
- Gold plated or solder dipped terminations.
- Type CC/EC capacitors are commercial equivalents of 49BC/EC.

APPLICATIONS

- Medical
- Aerospace
- Military Hybrids

DIMENSIONS in inches [millimeters]


CASE CODE	LENGTH L	WIDTH W	HEIGHT H	SPACING TYPICAL S	PAD WIDTH B	TYPICAL WEIGHT (Grams)
A	0.100 ± 0.015 [2.54 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.040 [1.02]	0.030 ± 0.005 [0.76 ± 0.127]	0.02
B	0.150 ± 0.015 [3.81 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.090 [2.29]	0.030 ± 0.005 [0.76 ± 0.127]	0.03
C	0.200 ± 0.015 [5.08 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.140 [3.55]	0.030 ± 0.005 [0.76 ± 0.127]	0.04
D	0.150 ± 0.015 [3.81 ± 0.381]	0.100 ± 0.015 [2.54 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.090 [2.29]	0.030 ± 0.005 [0.76 ± 0.127]	0.07
E	0.200 ± 0.015 [5.08 ± 0.381]	0.100 ± 0.015 [2.54 ± 0.381]	0.050 ± 0.015 [1.27 ± 0.381]	0.140 [3.55]	0.030 ± 0.005 [0.76 ± 0.127]	0.09
F	0.220 ± 0.015 [5.59 ± 0.381]	0.135 ± 0.015 [3.43 ± 0.381]	0.070 ± 0.015 [1.78 ± 0.381]	0.160 [4.06]	0.030 ± 0.005 [0.76 ± 0.127]	0.21
G	0.265 ± 0.015 [6.73 ± 0.381]	0.110 ± 0.015 [2.79 ± 0.381]	0.110 ± 0.015 [2.79 ± 0.381]	0.165 [4.19]	0.050 ± 0.005 [1.27 ± 0.127]	0.33
H	0.285 ± 0.015 [7.25 ± 0.381]	0.150 ± 0.015 [3.81 ± 0.381]	0.110 ± 0.015 [2.79 ± 0.381]	0.185 [4.70]	0.050 ± 0.005 [1.27 ± 0.127]	0.50

Notes:

1. For polarity identification, when chip is in mounting position, bare metal clip and weld stub are positive. Top surface of the negative terminal is blue.
2. Anode Riser (weld stub) may extend case size length dimension by 0.015" [0.381] maximum.
3. Dimensions given are for gold plated terminations. For solder dipped terminations, add 0.015" [0.381] to dimension tolerances.
4. Spacing dimension is average distance between chip mounting terminations and therefore maximum distance between mounting pads on substrate.



RATINGS AND CASE CODES																	
μF	Picofarad Code	4 V		6 V		10 V		15 V		20 V		25 V*		35 V*		50 V*	
		Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.	Std.	Ext.
0.10	104	A	—	A	—	A	—	A	—	A	—	A	—	A	—	A	—
0.15	154	A	—	A	—	A	—	A	—	A	—	A	—	A	—	A	—
0.22	224	A	—	A	—	A	—	A	—	A	—	A	—	A	—	B	—
0.33	334	A	—	A	—	A	—	A	—	A	—	A	—	B	—	B	—
0.47	474	A	—	A	—	A	—	A	—	A	—	B	A	B	A	C	—
0.68	684	A	—	A	—	A	—	A	—	B	—	B	—	C	—	D	—
1.0	105	A	—	A	—	A	—	B	A	B	A	C	A	D	B	E	—
1.5	155	A	—	A	—	B	A	B	A	C	A	D	B	E	C	F	—
2.2	225	A	—	B	A	B	A	C	A	D	B	E	C	F	D	F	—
3.3	335	B	A	B	A	C	A	D	B	E	C	F	D	F	E	G	—
4.7	475	B	A	C	A	D	B	E	C	F	D	F	E	G	F	H	—
6.8	685	C	A	D	B	E	C	F	D	F	E	G	F	H	F	—	—
10	106	D	B	E	C	F	D	F	E	G	F	G	F	—	G	—	—
15	156	E	C	F	D	F	E	G	F	G	F	H	F	—	H	—	—
22	226	F	D	F	E	G	F	G	F	H	F	—	G	—	—	—	—
33	336	F	E	G	F	G	F	H	F	—	G	—	H	—	—	—	—
47	476	G	F	G	F	H	F	—	G	—	H	—	—	—	—	—	—
68	686	G	F	H	F	—	G	—	H	—	—	—	—	—	—	—	—
100	107	H	F	—	G	—	H	—	—	—	—	—	—	—	—	—	—
120	127	—	G	—	G	—	—	—	—	—	—	—	—	—	—	—	—
150	157	—	G	—	H	—	—	—	—	—	—	—	—	—	—	—	—
220	227	—	H	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*Preliminary values, contact factory for availability.

STANDARD RATINGS - TYPE CC						
CAP μF	CASE CODE	25°C DCL μA	85°C DCL μA	125°C DCL μA	DF %	ESR Ω
4WVDC @ -55°C to +85°C, Surge = 5V 2.7WVDC @ +125°C, Surge = 3.4V						
2.2	A	0.5	5.0	7.0	6.0	8.0
4.7	B	0.5	5.0	7.0	6.0	5.5
6.8	C	0.5	5.0	7.0	6.0	3.5
10	D	0.5	5.0	7.0	8.0	2.0
15	E	0.6	6.0	8.0	8.0	1.5
33	F	1.4	14.0	18.0	8.0	1.0
68	G	2.8	28.0	35.0	10.0	0.8
100	H	4.0	40.0	48.0	10.0	0.5
6WVDC @ -55°C to +85°C, Surge = 8V 4WVDC @ +125°C, Surge = 5V						
1.5	A	0.5	5.0	7.0	6.0	8.0
3.3	B	0.5	5.0	7.0	6.0	5.5
4.7	C	0.5	5.0	7.0	6.0	3.5
6.8	D	0.5	5.0	7.0	6.0	2.0
10	E	0.6	6.0	8.0	8.0	1.5
22	F	1.4	14.0	18.0	8.0	1.0
47	G	2.9	29.0	36.0	10.0	0.8
68	H	4.0	40.0	48.0	10.0	0.7
10WVDC @ -55°C to +85°C, Surge = 13V 7WVDC @ +125°C, Surge = 9V						
1.0	A	0.5	5.0	7.0	6.0	9.0
2.2	B	0.5	5.0	7.0	6.0	5.5
3.3	C	0.5	5.0	7.0	6.0	3.5
4.7	D	0.5	5.0	7.0	6.0	2.0
6.8	E	0.7	7.0	9.0	6.0	2.0
15	F	1.5	15.0	19.0	8.0	1.0
33	G	3.0	30.0	36.0	10.0	0.8
47	H	4.7	47.0	59.0	10.0	0.7



STANDARD RATINGS - TYPE CC						
CAP μ F	CASE CODE	25°C DCL μ A	85°C DCL μ A	125°C DCL μ A	DF %	ESR Ω
15WVDC @ -55°C to +85°C, Surge = 20V 10WVDC @ +125°C, Surge = 12V						
0.68	A	0.5	5.0	7.0	6.0	10.0
1.5	B	0.5	5.0	7.0	6.0	6.0
2.2	C	0.5	5.0	7.0	6.0	4.0
3.3	D	0.5	5.0	7.0	6.0	2.5
4.7	E	0.8	8.0	10.0	6.0	2.5
10	F	1.5	15.0	19.0	6.0	1.5
22	G	3.3	33.0	42.0	8.0	1.0
33	H	5.0	50.0	60.0	8.0	0.8
20WVDC @ -55°C to +85°C, Surge = 26V 13WVDC @ +125°C, Surge = 16V						
0.47	A	0.5	5.0	7.0	6.0	12.0
0.68	B	0.5	5.0	7.0	6.0	8.0
1.0	B	0.5	5.0	7.0	6.0	8.0
1.5	C	0.5	5.0	7.0	6.0	6.0
2.2	D	0.5	5.0	7.0	6.0	3.5
3.3	E	0.7	7.0	9.0	6.0	3.0
6.8	F	1.4	14.0	18.0	6.0	2.5
15	G	3.0	30.0	36.0	6.0	1.0
22	H	4.0	40.0	48.0	6.0	1.0
*25WVDC @ -55°C to +85°C, Surge = 32V 17WVDC @ +125°C, Surge = 22V						
0.33	A	0.5	5.0	7.0	6.0	15.0
0.68	B	0.5	5.0	7.0	6.0	10.0
1.0	C	0.5	5.0	7.0	6.0	6.5
1.5	D	0.5	5.0	7.0	6.0	5.0
2.2	E	0.6	6.0	8.0	6.0	3.5
4.7	F	1.2	12.0	15.0	6.0	2.5
6.8	G	1.7	17.0	22.0	6.0	1.2
10	G	2.5	25.0	32.0	6.0	1.4
15	H	3.8	38.0	48.0	6.0	1.0
*35WVDC @ -55°C to +85°C, Surge = 46V 23WVDC @ +125°C, Surge = 28V						
0.22	A	0.5	5.0	7.0	6.0	18.0
0.47	B	0.5	5.0	7.0	6.0	12.0
0.68	C	0.5	5.0	7.0	6.0	9.0
1.0	D	0.5	5.0	7.0	6.0	6.0
1.5	E	0.6	6.0	8.0	6.0	4.5
3.3	F	1.0	10.0	12.0	6.0	2.5
4.7	G	1.7	17.0	22.0	6.0	1.5
6.8	H	2.4	24.0	30.0	6.0	1.3
*50WVDC @ -55°C to +85°C, Surge = 65V 33WVDC @ +125°C, Surge = 40V						
0.10	A	0.5	5.0	7.0	6.0	20.0
0.15	A	0.5	5.0	7.0	6.0	20.0
0.22	B	0.5	5.0	7.0	6.0	15.0
0.33	B	0.5	5.0	7.0	6.0	12.0
0.47	C	0.5	5.0	7.0	6.0	8.0
0.68	D	0.5	5.0	7.0	6.0	7.0
1.0	E	0.5	5.0	7.0	6.0	6.0
1.5	F	0.8	8.0	10.0	6.0	4.0
2.2	F	1.1	11.0	14.0	6.0	2.5
3.3	G	1.7	17.0	22.0	6.0	2.0
4.7	H	2.4	24.0	30.0	6.0	2.0

*Preliminary values, contact factory for availability.



EXYENDED RATINGS - TYPE EC						
CAP μ F	CASE CODE	25°C DCL μ A	85°C DCL μ A	125°C DCL μ A	DF %	ESR Ω
4WVDC @ -55°C to +85°C, Surge = 5V 2.7WVDC @ +125°C, Surge = 3.4V						
6.8	A	0.5	5.0	6.0	6.0	3.5
10	B	0.5	5.0	6.0	8.0	2.0
15	C	0.6	6.0	8.0	8.0	1.5
22	D	0.9	9.0	11.0	8.0	1.0
33	E	1.4	14.0	17.0	8.0	1.0
100	F	4.0	40.0	48.0	10.0	0.5
150	G	6.0	60.0	72.0	10.0	0.5
220	H	9.0	90.0	108.0	10.0	0.5
6WVDC @ -55°C to +85°C, Surge = 8V 4WVDC @ +125°C, Surge = 5V						
4.7	A	0.5	5.0	6.0	6.0	3.5
6.8	B	0.5	5.0	6.0	6.0	2.0
10	C	0.6	6.0	8.0	8.0	1.5
15	D	0.9	9.0	11.0	8.0	1.0
22	E	1.4	14.0	17.0	8.0	1.0
68	F	4.0	40.0	48.0	10.0	0.7
120	G	8.0	80.0	96.0	10.0	0.5
150	H	9.0	90.0	108.0	10.0	0.5
10WVDC @ -55°C to +85°C, Surge = 13V 7WVDC @ +125°C, Surge = 9V						
3.3	A	0.5	5.0	6.0	6.0	3.5
4.7	B	0.5	5.0	6.0	6.0	2.0
6.8	C	0.7	7.0	9.0	6.0	2.0
10	D	1.0	10.0	12.0	8.0	1.5
15	E	1.5	15.0	18.0	8.0	1.0
47	F	4.7	47.0	57.0	10.0	0.7
68	G	7.0	70.0	84.0	10.0	0.7
100	H	10.0	100.0	120.0	10.0	0.5
15 WVDC @ -55°C to +85°C, Surge = 20 V 10 WVDC @ +125°C, Surge = 12 V						
2.2	A	0.5	5.0	6.0	6.0	4.0
3.3	B	0.5	5.0	6.0	6.0	2.5
4.7	C	0.8	8.0	10.0	6.0	2.5
6.8	D	1.0	10.0	12.0	6.0	2.0
10	E	1.5	15.0	18.0	6.0	1.5
33	F	5.0	50.0	60.0	8.0	0.8
47	G	8.0	80.0	96.0	8.0	0.8
68	H	11.0	110.0	132.0	8.0	0.8
20WVDC @ -55°C to +85°C, Surge = 26V 13WVDC @ +125°C, Surge = 16V						
1.5	A	0.5	5.0	6.0	6.0	6.0
2.2	B	0.5	5.0	6.0	6.0	3.5
3.3	C	0.7	7.0	9.0	6.0	3.0
4.7	D	1.0	10.0	12.0	6.0	2.5
6.8	E	1.4	14.0	17.0	6.0	2.0
22	F	4.0	40.0	48.0	6.0	1.0
33	G	7.0	70.0	84.0	6.0	1.0
47	H	10.0	100.0	120.0	6.0	1.0



EXTENDED RATINGS - TYPE EC						
CAP μ F	CASE CODE	25°C DCL μ A	85°C DCL μ A	125°C DCL μ A	DF %	ESR Ω
25WVDC @ -55°C to +85°C, Surge = 32V 17WVDC @ +125°C, Surge = 22V						
1.0	A	0.5	5.0	6.0	6.0	8.0
1.5	B	0.5	5.0	6.0	6.0	5.0
2.2	C	0.6	6.0	8.0	6.0	3.5
3.3	D	0.9	9.0	11.0	6.0	3.5
4.7	E	1.2	12.0	15.0	6.0	2.5
10	F	2.5	25.0	30.0	6.0	2.0
15	F	3.8	38.0	46.0	6.0	1.0
22	G	6.0	60.0	72.0	6.0	1.0
33	H	9.0	90.0	108.0	6.0	1.0
35WVDC @ -55°C to +85°C, Surge = 46V 23WVDC @ +125°C, Surge = 28V						
0.47	A	0.5	5.0	6.0	6.0	12.0
1.0	B	0.5	5.0	6.0	6.0	6.0
1.5	C	0.6	6.0	8.0	6.0	5.0
2.2	D	0.8	8.0	10.0	6.0	3.5
3.3	E	1.0	10.0	12.0	6.0	2.5
4.7	F	1.7	17.0	20.0	6.0	2.5
6.8	F	2.4	24.0	29.0	6.0	2.0
10	G	4.0	40.0	48.0	6.0	2.0
15	H	6.0	60.0	72.0	6.0	2.0

ORDERING INFORMATION

Example: CC685H035KXS

CC	685	H	035	K	X	S
SERIES	CAPACITANCE	CASE CODE	RATED VOLTAGE AT 85°C	CAPACITANCE TOLERANCE	GRADE	TERMINATION FINISH
CC = Standard Range. EC = Extended Range.	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	See Table.		J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$	A = Industrial grade. X = Requires internal spec.	G = Gold plated. S = Solder dipped.