MCCB Series Epoxy-Coated Solid
Electrolytic Tantalum Capacitors, Resin Dipped Type

multicomp PRO

RoHS Compliant

Features

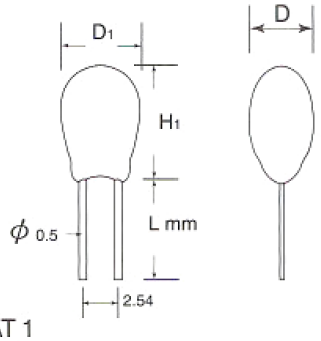
- Lead-Free
- Specially designed of general purpose
- Highly reliable resin dipped type
- Excellent frequency and temperature characteristics
- Non-flammable epoxy resin

Specifications

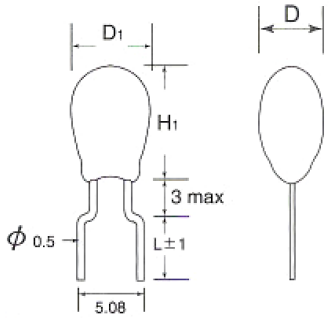
<table>
<tr><th>Item</th><th>Performance Characteristics</th></tr>
<tr><td>Operating Temperature Range</td><td>-55°C to +125°C (>85°C with rated voltage derating)</td></tr>
<tr><td>Rated Working Voltage Range</td><td>6.3V DC to 50V DC</td></tr>
<tr><td>Nominal Capacitance Range</td><td>0.1 to 330µF</td></tr>
<tr><td>Capacitance Tolerance</td><td>±20% (±10% is available) (120Hz, +20°C)</td></tr>
<tr><td>Leakage Current</td><td>Not more than 0.01CV [µA] or 0.5µA whichever is greater</td></tr>
<tr><td>tan δ
(120Hz, +20°C)</td><td>
<table>
<tr><td>Working voltage</td><td colspan="4">6.3 to 50V</td></tr>
<tr><td>Capacitance</td><td>≤1µF</td><td>1.5 to 6.8µF</td><td>10 to 68µF</td><td>≥100µF</td></tr>
<tr><td>tan δ max</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">+105°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
Relative humidity : 90 to 95% without load
Ambient temperature : +40°C
Duration : 500 hours
Post test requirements at+ 20°C
Leakage current : ≤0.012CV or 0.75 [µF], whichever is greater
Capacitance change : ±10% of initial measured value
tan δ : ≤150% of Initial specified value</td></tr>
<tr><td>Endurance</td><td>Test conditions
<table>
<tr><th>Conditions / Item</th><th>Derating (for 10 to 50V only)</th><th>Rating</th></tr>
<tr><td>Duration</td><td>1,000 hours</td><td>1,000 hours</td></tr>
<tr><td>Ambient temperature</td><td>+105°C</td><td>+85°C</td></tr>
<tr><td>Applied voltage</td><td>Derated working voltage</td><td>Rated working voltage</td></tr>
<tr><td>Source impedance</td><td>1Ω/V</td><td>1Ω/V</td></tr>
</table>
</td></tr>
</table>

Item	Performance Characteristics
Endurance	Derating voltage +105°C for 10 to 50V working Working voltage [V] DC: 10 / 16 / 25 / 35 / 50 Derating voltage [V] DC: 6.3 / 10 / 16 / 23 / 33 Post test requirements at +20°C Leakage current : ≤ 0.01% CV or 00625[1-’ A], whichever is greater Capacitance change : ±10% of initial measured value tan δ : ≤ Initial specified value
Shelf Life	Test conditions Duration : 1,000 hours Ambient temperature : +85°C Applied voltage : (none) Post test requirements at +20°C Same limits for “Endurance”.

Tantalum Capacitor Dipped Type Outline Drawings



FORMAT 1



FORMAT 2

Case Size	A	B	C	D	E	F
Formats 1/2 H1 max	7	8	9.5	11	13	16.5
D1 max	4.5	5	5.5	6.5	8.5	9.5
Dmax	4.2	4.7	5.5	6.5	8.5	9.5

Dimensions : Millimetres

Wire Length (L)	5,7±1	>12,14
Code	A	B

Rated Voltage, Capacitance of Capacitors

VR (V)	6.3	10	16	25	35	50
Code	OJ	1A	1C	1E	1V	1H
Capacitance (IJF)	Case Size					
0.1 (104)					A	A
0.15 (154}					A	A
0.22 (224)					A	A
0.33 (334)					A	A
0.47 (474)					A	A
0.68 (684}					A	A
1 (105}				A	A	B
1.5 (155)			A	A	A	C
2.2 (225)		A	A	A	B	C
3.3 (335)	A	A	A	B	B	D
4.7 (475)	A	A	B	B	C	D
6.8 (685)	A	B	B	C	D	E
10 (106)	B	B	B	C	D	E
15 (156)	B	C	C	D	E	F
22 (226)	C	C	C	D	E	F
33 (336)	C	D	D	E	F	F
47 (476}	D	D	D	E	F	
68 (686)	D	D	E	F	F	
100 (107)	E	E	E	F		
150 (157)	E	E	F			
220 (227}	E	F	F			
330 (337}	F	F				
470 (477}	F	F				
680 (687)	F					

Leads & Solderability
Tinned radial leads, ø:0.5.mim.
Standard lead spacing: 2.54±0.5, 5.08±0.5mm
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

Part Number	Case Size	Capacitance F	DCL (µA) Max.	DF % Max.	ESR max. (Q) @ 100kHz
6.3 volt @ 85°C (4 volt, @ 125°C)					
MCCB 0J335##A##	A	3.3	0.5	6	13
MCCB 0J475##A##	A	4.7	0.5	6	10
MCCB 0J685##A##	A	6.8	0.5	6	8
MCCB 0J106##8##	B	10	0.6	8	6
MCCB 0J156##8##	B	15	0.9	8	5
MCCB 0J226##C##	C	22	1.4	8	3.7
MCCB 0J336##C##	C	33	2.1	8	3
MCCB 0J476##D##	D	47	3	8	2
MCCB 0J686##D##	D	68	4.3	8	1.8
MCCB 0J107##E##	E	100	6.3	10	1.6
MCCB 0J157##E##	E	150	9.5	10	0.9
MCCB 0J227##E##	E	220	13.9	10	0.9
MCCB 0J337##F##	F	330	20.8	10	0.7
MCCB 0J477##F##	F	470	29.6	10	0.6
MCCB 0J687##F##	F	680	42.8	12	0.5
10 volt @ 85°C (6.3 volt, @ 125°C)					
MCCB 1A225##A##	A	2.2	0.5	6	13
MCCB 1A335##A##	A	3.3	0.5	6	10
MCCB 1A475##A##	A	4.7	0.5	6	8
MCCB 1A685##B##	B	6.8	0.7	6	6
MCCB 1A106##B##	B	10	1	8	5
MCCB 1A156##C##	C	15	1.5	8	3.7
MCCB 1A226##C##	C	22	2.2	8	2.7
MCCB 1A336##D##	D	33	3.3	8	2.1
MCCB 1A476##D##	D	47	4.7	8	1.7
MCCB 1A686##D##	D	68	6.8	8	1.3
MCCB 1A107##E##	E	100	10	10	1
MCCB 1A157##E##	E	150	15	10	0.8
MCCB 1A227##F##	F	220	22	10	0.8
MCCB 1A337##F##	F	330	33	10	0.6
MCCB 1A477##F##	F	470	47	10	0.5
16 volt @ 85°C (10 volt, @ 125°C)					
MCCB 1C155##A##	A	1.5	0.5	6	10
MCCB 1C225##A##	A	2.2	0.5	6	8
MCCB 1C335##A##	A	3.3	0.5	6	6
MCCB 1C475##8##	B	4.7	0.8	6	5
MCCB 1C685##B##	B	6.8	1.1	6	4
MCCB 1C106##B##	B	10	1.6	8	3.2
MCCB 1C156##C##	C	15	2.4	8	2.5
MCCB 1C226##C##	C	22	3.5	8	2
MCCB 1C336##D##	D	33	5.3	8	1.6
MCCB 1C476##D##	D	47	7.5	8	1.3
MCCB 1C686##E##	E	68	10.9	8	1
MCCB 1C107##E##	E	100	16	10	0.8
MCCB 1C157##F##	F	150	24	10	0.6
MCCB 1C227##F##	F	220	35.2	10	0.5

Part Number	Case Size	Capacitance F	DCL (µA) Max.	DF % Max.	ESR max. (Q) @ 100kHz
25 volt @ 85°C (16 volt, @125°C)					
MCCB 1E105##A##	A	1	0.5	4	10
MCCB 1E155##A##	A	1.5	0.5	6	8
MCCB 1E225##A##	A	2.2	0.6	6	6
MCCB 1E335##B##	B	3.3	0.8	6	5
MCCB 1E475##B##	B	4.7	1.2	6	4
MCCB 1E685##C##	C	6.8	1.7	6	3.1
MCCB 1E106##C##	C	10	2.5	8	2.5
MCCB 1E156##D##	D	15	3.8	8	2
MCCB 1E226##D##	D	22	5.5	8	1.5
MCCB 1E336##E##	E	33	8.3	8	1.2
MCCB 1E476##E##	E	47	11.8	8	1
MCCB 1E686##F##	F	68	17	8	0.8
MCCB 1E107##F##	F	100	25	10	0.8
35 volt @ 85°C (23 volt, @125°C)					
MCCB 1V104##A##	A	0.1	0.5	4	26
MCCB 1V154##A##	A	0.15	0.5	4	21
MCCB 1V224##A##	A	0.22	0.5	4	17
MCCB 1V334##A##	A	0.33	0.5	4	15
MCCB 1V474##A##	A	0.47	0.5	4	13
MCCB 1V684##A##	A	0.68	0.5	4	10
MCCB 1V105##A##	A	1	0.5	4	8
MCCB 1V155##A##	A	1.5	0.5	6	6
MCCB 1V225##B##	B	2.2	0.8	6	5
MCCB 1V335##B##	B	3.3	1.2	6	4
MCCB 1V475##C##	C	4.7	1.6	6	3
MCCB 1V685##D##	D	6.8	2.4	6	2.5
MCCB 1V106##D##	D	10	3.5	8	2
MCCB 1V156##E##	E	15	5.3	8	1.6
MCCB 1V226##E##	E	22	7.7	8	1.3
MCCB 1V336##F##	F	33	11.6	8	1
MCCB 1V476##F##	F	47	16.5	8	0.8
MCCB 1V686##F##	F	68	23.8	8	0.7
50 volt @ 85°C (33 volt, @ 125°C)					
MCCB 1H104##A##	A	0.1	0.5	4	26
MCCB 1H154##A##	A	0.15	0.5	4	21
MCCB 1H224##A##	A	0.22	0.5	4	17
MCCB 1H334##A##	A	0.33	0.5	4	15
MCCB 1H474##A##	A	0.47	0.5	4	13
MCCB 1H684##A##	A	0.68	0.5	4	10
MCCB 1H105##B##	B	1	0.5	4	8
MCCB 1H155##C##	C	1.5	0.8	6	6
MCCB 1H225##C##	C	2.2	1.1	6	3.5
MCCB 1H335##D##	D	3.3	1.7	6	3
MCCB 1H475##D##	D	4.7	2.4	6	2.5
MCCB 1H685##E##	E	6.8	3.4	6	2
MCCB 1H106##E##	E	10	5	8	1.6
MCCB 1H156##F##	F	15	7.5	8	1.2
MCCB 1H226##F##	F	22	11	8	1
MCCB 1H336##F##	F	33	16.5	8	0.9

Note: All ## A ## to ambient temperature of + 20°C measured at 120Hz, 0.5V rms unless otherwise stated

- insert capacitance tolerance; K for ±10% and M for ±20%
- insert format 1. for pitch 2.54mm; format 2. for pitch 5.08mm
- insert wire length
- insert Bulk: Code B or Ammo pack: Code T

Packaging of bead tantalum capacitors
Explantion Of Part Numbers

MCCB	O J	4 7 5	M	I	A	B	B&T
Series Code	Rated Voltage	Nominal Capacitance	Capacitance Tolerance	Format & Lead Space	Size Code	Wire Length	Bulk & Ammo Pack

Quantity per bag: Code B
The capacity of the plastic bags depends on

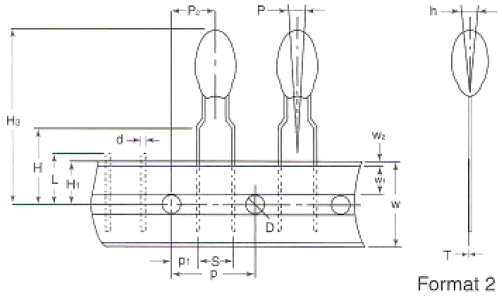
Case Size Format ①	Qty per bag (cut ≤ 7mm)
From A to B	1,000
From C to D	1,000
FromE to F	500

Case Size Format ①	Qty per bag (cut ≥ 14mm)
From A to B	1,000
From C to D	500
FromE to F	250

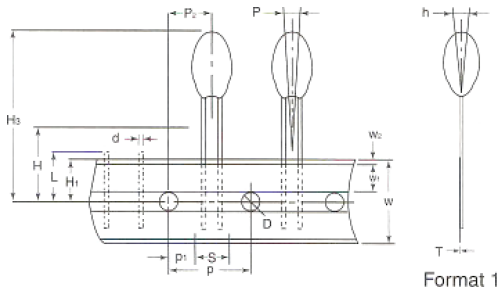
Case Size Format ②	Qty per bag (cut ≥ 7mm)
From A to B	1,000
From C to D	500

Tape & Ammo Packing (conform to: IEC286-2) Code T.

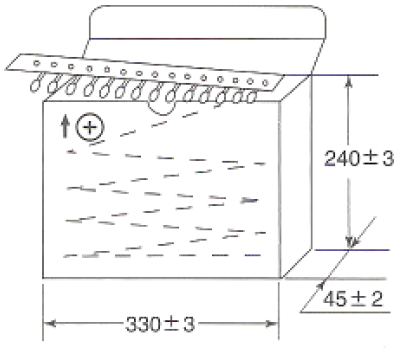
Tape & Ammo Packing (conform to: IEC286- 2)



Format 2



Format 1



Case Code	A	B-C	D-F
QTY. (PCS/box)	2500	2000	1000

Item	Code	Dimension (mm)
Carrier tape width	w	$18^{+1}_{-0.5}$
Hold down tape width	w_1	6± 0.5
Hold down tape position	w_2	1max
Feed hole diameter	D	4± 0.2
Feed hole pitch	P	12.7± 0.3
Hole center to lead	P_1	Format 1: 5.05± 0.7
		Format 2: 3.85± 0.7
Hole center to component center	P	6.35 ± 1
Lead wire clench height	H	16± 0.5
Hole position	H_1	9± 0.5
Base of component height	H_2	0.8 min.
Component height	H_3	32.2 max.
Component alignment	Δp	0± 1.3
	Δh	0± 2
Lead spacing	S	'S' wires: $2.5^{+0.6}_{-0.1}$
		'B' wires: $5^{+0.6}_{-0.5}$
Lead diameter	d	0.5± 0.05
length of snipped lead	L	11 max.
Carrier tape thickness	T	0.5± 0.1