



# Miniature Aluminum Electrolytic Capacitors

Series  
**CZS**

## FEATURES

- 1、 Low impedance, with 7mm height, wide operating temperature range.

## SPECIFICATIONS

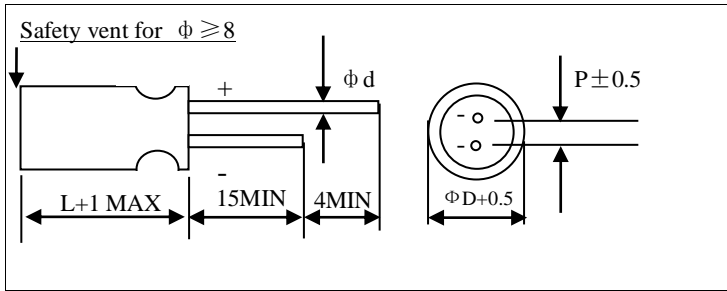
Item	Performance Characteristics																														
Operating Temperature Range	-40 to +105 °C																														
Rated Working voltage Range	6.3 to 35V																														
Nominal Capacitance Range	6.8to470(uF)																														
Capacitance Tolerance	±20% (120Hz, +20 °C)																														
Leakage Current	$I \leq 0.01CV$ or 3(uA) <span style="float:right">Whichever is greater measured after 2 minutes application of rated working voltage at +20 °C</span>																														
Dissipation Factor $\tan \delta$ (120Hz+20 °C)	<table border="1"> <thead> <tr> <th>Working voltage(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> </tr> </thead> <tbody> <tr> <td><math>\tan \delta</math> (max.)</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </tbody> </table>	Working voltage(V)	6.3	10	16	25	35	$\tan \delta$ (max.)	0.18	0.16	0.14	0.12	0.10																		
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Low Temperature Characteristics	Impedance ratio max. at 120Hz <table border="1"> <thead> <tr> <th>Working voltage(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> </tr> </thead> <tbody> <tr> <td>Z-25 °C/Z+20 °C</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40 °C/Z+20 °C</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Working voltage(V)	6.3	10	16	25	35	Z-25 °C/Z+20 °C	2	2	2	2	2	Z-40 °C/Z+20 °C	3	3	3	3	3												
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Multiplier for Ripple Current vs. Frequency	<table border="1"> <thead> <tr> <th colspan="2">CAP(uF)/Hz</th> <th>60(50)</th> <th>120</th> <th>400</th> <th>1K</th> <th>10K</th> <th>50K-100K</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Multiplier</td> <td>CAP ≤ 10</td> <td>0.47</td> <td>0.59</td> <td>0.76</td> <td>0.85</td> <td>0.97</td> <td>1</td> </tr> <tr> <td>10 &lt; CAP ≤ 100</td> <td>0.52</td> <td>0.65</td> <td>0.80</td> <td>0.89</td> <td>0.97</td> <td>1</td> </tr> <tr> <td>100 &lt; CAP ≤ 1000</td> <td>0.58</td> <td>0.72</td> <td>0.84</td> <td>0.90</td> <td>0.98</td> <td>1</td> </tr> </tbody> </table>	CAP(uF)/Hz		60(50)	120	400	1K	10K	50K-100K	Multiplier	CAP ≤ 10	0.47	0.59	0.76	0.85	0.97	1	10 < CAP ≤ 100	0.52	0.65	0.80	0.89	0.97	1	100 < CAP ≤ 1000	0.58	0.72	0.84	0.90	0.98	1
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High temperature Loading	Test conditions Duration : 2000 hours Ambient temperature : +105 °C Applied voltage : Rated DC working voltage Post test requirements at +20 °C Leakage current : ≤ Initial specified value Capacitance change : ≤ ±20% of initial measured value $\tan \delta$ : ≤ 200% of initial specified value																														
Shelf life	Test conditions Duration : 1000 hours Ambient temperature : +105 °C Applied voltage : (None) Post test requirements at +20 °C Leakage current : ≤ Initial specified value Capacitance change : ≤ ±20% of initial measured value $\tan \delta$ : ≤ 200% of initial specified value																														
Others	JIS C-5141 JIS C-5102																														



# Miniature Aluminum Electrolytic Capacitors

## CASE SIZE TABLE

Unit:mm



D φ	4	5	6.3	8
P	1.5	2.0	2.5	3.5
d φ (±0.05)	0.45			0.5

## DIMENSIONS

Φ D × L (mm)

Cap.(uF)	WV(SV) Code	6.3V(8)			10V(13)			16V(20)		
		0J			1A			1C		
15	156							4×7	3.3	70
22	226				4×7	3.3	70	5×7	1.7	110
33	336	5×7	1.7	110	5×7	1.7	110	6.3×7	0.8	160
47	476	5×7	1.7	116	5×7	0.8	160	6.3×7	0.8	168
68	686	5×7	0.8	150	5×7	0.8	168	8×7	0.5	200
100	107	5×7	0.8	175	6.3×7	0.5	190	8×7(9)	0.5	210(223)
150	157	6.3×7	0.5	190	8×7(9)	0.5	210(224)	8×7(9)	0.4	230(240)
220	227	6.3×7	0.5	205	8×7(9)	0.4	230(235)	8×7(9)	0.3	250(258)
330	337				8×7(9)	0.3	250(250)	8×7(9)	0.25	262(270)
470	477							8×9	0.2	275
								Case Size	Impedance	Allowable ripple

Case Size D × L (mm)

Max. Impedance (Ω) at 20°C 100kHz

Allowable Ripple (mA rms) at 105°C 100kHz

Φ D × L (mm)

Cap.(uF)	WV(SV) Code	25V(32)			35V(44)		
		1E			1V		
6.8	685				4×7	3.3	70
10	106	4×7	3.3	70	5×7	1.7	110
15	156	5×7	1.7	110	6.3×7	0.8	160
22	226	5×7	1.7	118	6.3×7	0.8	168
33	336	6.3×7	0.8	160	8×7	0.5	200
47	476	8×7	0.5	180	8×7	0.5	235
68	686	8×7	0.5	200	8×7	0.4	252
100	107	8×7	0.4	240	8×7	0.3	278
150	157	8×7	0.3	270	8×7	0.25	320
220	227	8×7	0.25	290	Case Size	Impedance	Allowable ripple

Case Size D × L (mm)



## *Miniature Aluminum Electrolytic Capacitors*

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Max.Impedance ( $\Omega$ ) at 20°C 100kHz

Allowable Ripple (mA rms) at 105°C 100KHz