Date .

Drawing No. **SZ-ARSZ01**

Approval Sheet

Aluminum electrolytic capacitors

Item

SZ SERIES

Approved by J. O. Park

Technical team manager

SACON ELECTRONICS CORPORATION

1.Scope

This specification is for lead type aluminum electrolytic capacitors.

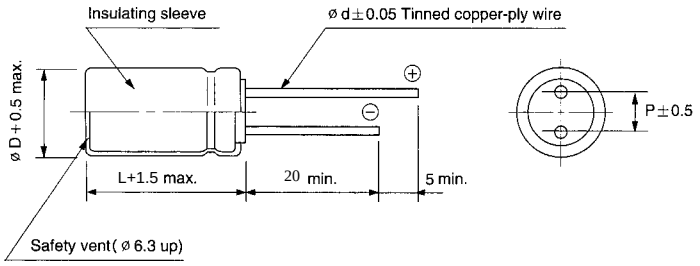
2.Applicable standards

JIS C-5141, except as specified in this specification

3.Operating temperature range

-40~+105℃

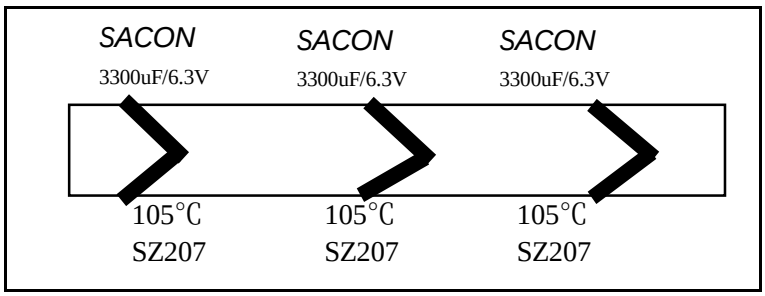
4.Dimensions



φD	8×14↓	8×20↑	10	13
P	3.5	3.5	5.0	5.0
φd	0.5	0.6	0.6	0.6

For dimensions of φD & L, refer to the table 1

5.Marking



☑ SACON trade－mark

☑ Nominal capacitance

☑ Working voltage

☑ Polarity

☑ Series NO.

☑ Operating temperature range

☑ Date code

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6.Performance

Test environmental conditions

-Ambient temperature :20± 2℃ / Relative humidity : 60~70% Air pressure :86~106kPa

<table>
<tr><th>No.</th><th>Item</th><th>Test condition</th><th>Specification</th></tr>
<tr><td>6.1</td><td>Rated voltage</td><td></td><td>See table 1</td></tr>
<tr><td>6.2</td><td>Capacitance
(Tolerance)</td><td>· Measuring frequency: 120Hz±20%
· Measuring voltage : 0.5Vrms or less
· DC bias voltage :+1.5~2.0VDC
· Measurement circuit :Equivalent series circuit</td><td>See table 1
(M: ±20%)</td></tr>
<tr><td>6.3</td><td>tan δ</td><td colspan="2">· Test condition
· Measurement shall be made under the same conditions as those given for the measurement of capacitance.
· Specification
<table>
<tr><td>WV</td><td>6.3</td><td>10</td><td>16</td></tr>
<tr><td>tan δ</td><td>0.22</td><td>0.19</td><td>0.16</td></tr>
</table>
Note: Above DF Specifications shall be 2% added for every 1000uF capacitor exceeding 1000uF.</td></tr>
<tr><td>6.4</td><td>Leakage
Current</td><td colspan="2">· Test condition
The rated voltage shall be applied across the capacitor through a 1000±10Ω protective resistor.
. Specification
I=0.03CV(after 2 minutes)</td></tr>
<tr><td>6.5</td><td>Maximum
Permissible
Ripple current</td><td>· Temperature : 105℃
· Ripple : rms value of 100KHz sine wave AC (The sum of DC voltage and peak voltage shall not exceed the rated voltage.)</td><td>See table 1</td></tr>
<tr><td>6.6</td><td>Impedance</td><td>· Measuring frequency : 100kHz±10%
· Measuring voltage : 0.5Vrms or less</td><td>See table 1</td></tr>
</table>

<table>
<tr><th>No</th><th>Item</th><th>Test condition</th><th>Specification</th></tr>
<tr><td>6.7</td><td>Surge voltage</td><td>· Applied voltage : See table 1
· Temperature : 15~35℃
· Duration of charge : 30±5 seconds
· Duration of discharge : 5 minutes 30 seconds
· Cycles : 1000 times</td><td>· No visible damage
· Leakage current
≤ initial specified value
· Capacitance change
within ±15% of initial value
· tan δ ≤initial specified value</td></tr>
<tr><td>6.8</td><td>Low temperature characteristics</td><td>
<table>
<tr><th>Step</th><th>Temperature(℃)</th></tr>
<tr><td>1</td><td>20±2</td></tr>
<tr><td>2</td><td>-25±3,-40±3</td></tr>
</table>
Step-1:Impedance shall be measured.
Step-2:Impedance ratio at -25℃,-40℃refer to 20 ℃Shall be less than the value below.
Table 6.8
<table>
<tr><th>Rated volt.(V)</th><th>Z-25℃ Z+20℃</th><th>Z-40℃ Z+20℃</th><th>Rated Volt.(V)</th><th>Z-25℃ Z+20℃</th><th>Z-40℃ Z+20℃</th></tr>
<tr><td>6.3</td><td>2</td><td>3</td><td></td><td></td><td></td></tr>
<tr><td>10</td><td>2</td><td>3</td><td></td><td></td><td></td></tr>
<tr><td>16</td><td>2</td><td>3</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td><td>· Impedance ratio: Table 6.8</td></tr>
<tr><td>6.9</td><td>Damp heat (steady state)</td><td>· Temperature : 40±2℃
· Relative humidity : 90%~95%
· Duration : 240±8 hours</td><td>· No visible damage
· Leakage current
≤ initial specified value
· Capacitance change
within ±15% of initial value
· tan δ ≤
initial specified value×1.2</td></tr>
<tr><td>6.10</td><td>Load life</td><td>· Temperature : 105℃±2℃
· Applied voltage : rated voltage
· Duration : 2000+72/-0 hours

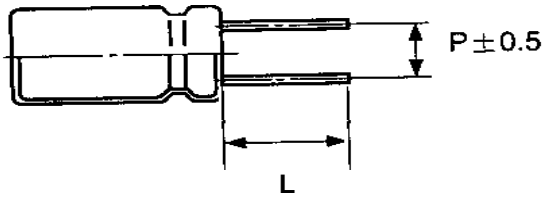
※The capacitors shall be stored under standard atmospheric conditions for 1 to 2 hours, after which measurement shall be made.</td><td>· No visible damage
· Capacitance change
within ±25% of initial value
· tan δ ≤
initial specified value×2
· Leakage current
≤ initial specified value</td></tr>
<tr><td>6.11</td><td>Shelf life</td><td>· Temperature: 105℃±2℃
· Duration : 1000 +48/-0 hours
※Prior to the measurement of leakage current, following conditioning may be made.
The DC rated voltage shall be applied across the capacitor and its protective resistor （1kΩ） for 30 minutes. The capacitor shall then be stored under standard atmospheric conditions for 24 hours.</td><td>· No visible damage
· Capacitance change
within ±25% of initial value
· tan δ ≤
initial specified value×2
· Leakage current
≤initial specified value</td></tr>
</table>

⊙ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT(table 1)

V (Code) / Item / Cap.(uF)	Code	6.3(OJ)			10(1A)			16(1C)		
		Case size ΦD X L (mm)	Impedance (mΩMAX.) 20°C/100kHz	Rated ripple (mA rms) 105°C/100kHz	Case size ΦD X L (mm)	Impedance (mΩMAX.) 20°C/100kHz	Rated ripple (mA rms) 105°C/100kHz	Case size ΦD X L (mm)	Impedance (mΩMAX.) 20°C/100kHz	Rated ripple (mA rms) 105°C/100kHz
470	471							8x12	60	850
680	681				8x12	60	850	8x14	45	1050
								10x12.5	26	1540
1000	102				8x14	45	1050	8x20	21	1870
					10x12.5	26	1540	10x16	19	2000
1500	152	8x20	16	1950	8x20	21	1870	10x25	13	2550
		10x12.5	26	1540	10x16	19	2000			
		10x20	16	1950	10x20	16	1950			
1800	182	8x20	21	1870	10x20	13	2550	10x25	12	2800
		10x16	19	2000						
2200	222	10x20	13	2550	10x25	12	2800	10x25	12	2800
		10x25	13	2700				13x25	12	3200
3300	332	10x25	12	2800						
3900	392	13x25	11	3200	13x25	11	3200			
4700	472	13x25	11	3200						

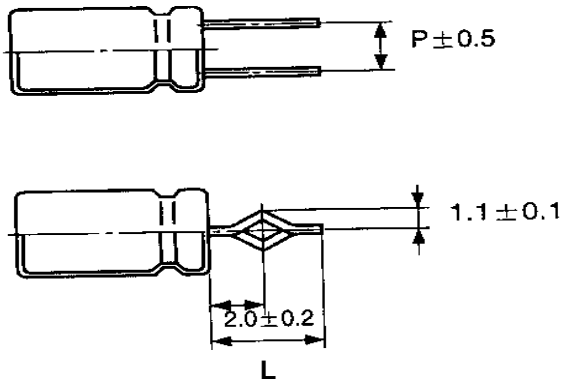
⊙ **Cut**

Standard cut lead with L：3.2± 0.2mm
Standard cut lead with L：4.5± 0.2mm
Standard cut lead with L：5.0± 0.3mm



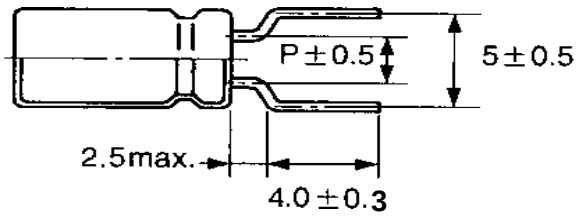
⊙ **Kink**

Kink cut lead with L：3.2± 0.3mm
Kink cut lead with L：4.5± 0.5mm



⊙ **Forming（8φ）**

forming cut lead with L：4.0± 0.3mm,pitch：5mm



⊙**Packing Q'ty (pcs.)/Box**

Classification	Bulk	Cutting & Forming
Case size φD×L(mm)	Inner Box (PCS)	Inner Box (PCS)
8×12	7500	8000
8×14	5000	6000
8×20	4000	5000
10×12.5	3500	4500
10×16	3000	4000
10×20	2000	3000
10×25	1800	2500
13×20	1200	1600
13×25	1000	1200
13×30	1000	1000
13×36	800	1000