

## ALUMINUM ELECTROLYTIC CAPACITORS

APPROVAL NO.

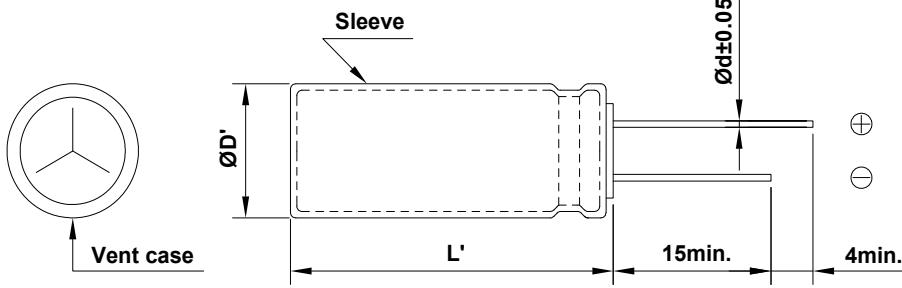
8120

NBL 450 VB 33 (M)

SERIES  
RATING  
CASE SIZE

NBL  
450 V 33 $\mu$ F  
Ø 10 × 50 L

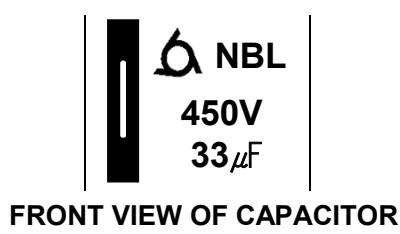
## A. DIAGRAM OF DIMENSION



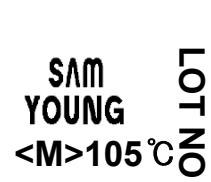
[Unit : mm]

ØD	10
L	50
Ød	0.6
F	5.0
ØD'	ØD+0.5 max.
L'	L+2.0 max.

## B. MARKING : DARK BLUE SLEEVE &amp; SILVER INK



FRONT VIEW OF CAPACITOR



BACK VIEW OF CAPACITOR

## C. ELECTRICAL CHARACTERISTICS

A. OPERATING TEMPERATURE RANGE	:	-40 ~ +105°C												
B. RATED VOLTAGE	:	450 V <sub>DC</sub>												
C. SURGE VOLTAGE	:	500 V <sub>DC</sub>												
D. CAPACITANCE TOLERANCE	:	±20% at 20°C, 120Hz												
E. LEAKAGE CURRENT	:	Lower 694 μA, after 1 minute at 20°C												
F. DISSIPATION FACTOR (TANδ)	:	Lower 0.24 at 20°C, 120Hz												
G. RATED RIPPLE CURRENT	:	364 mA <sub>rms</sub> at 105°C, 120Hz												
H. RATED RIPPLE CURRENT MULTIPLIERS (Frequency Multipliers)	:	<table border="1"> <thead> <tr> <th>Freq.(Hz)</th> <th>120</th> <th>1k</th> <th>10k</th> <th>50k</th> <th>100k</th> </tr> </thead> <tbody> <tr> <td>Factor</td> <td>1.00</td> <td>1.75</td> <td>2.25</td> <td>2.35</td> <td>2.50</td> </tr> </tbody> </table>	Freq.(Hz)	120	1k	10k	50k	100k	Factor	1.00	1.75	2.25	2.35	2.50
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Factor	1.00	1.75	2.25	2.35	2.50									
I. TEMPERATURE CHARACTERISTIC (Max. Impedance ratio)	:	<table border="1"> <tr> <td>Z(-25°C) / Z(20°C)</td> <td>3</td> </tr> <tr> <td>Z(-40°C) / Z(20°C)</td> <td>6</td> </tr> </table>	Z(-25°C) / Z(20°C)	3	Z(-40°C) / Z(20°C)	6								
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Z(-40°C) / Z(20°C)	6													

J. LOAD LIFE : The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 12,000 hours at 105°C.

- # Capacitance change ≤ ±20 % of the initial value
- # Tanδ ≤ 200 % of the initial specified value
- # Leakage Current ≤ The initial specified value

K. SHELF LIFE : The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.

The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements.

- # Capacitance change ≤ ±20 % of the initial value
- # Tanδ ≤ 200 % of the initial specified value
- # Leakage Current ≤ 500 % of the initial specified value

L. CLEANING CONDITIONS : Non-solvent proof

M. OTHERS : Satisfied characteristics KS C IEC 60384-4



SamYoung Electronics Co., Ltd.