NO:G2507251274

承　　認　　書
SPECIFICATION FOR APPROVAL

客　　戶 CUSTOMER	TME
日　　期 DATE	2025-7-25
品　　名 PART NAME	ELECTROLYTIC CAPACITOR
客戶料號 Customer P/N	N/A
料　　號 Part No.	GM2W471MND3040Y

製　造　商
MANUFACTURER.:

臺　灣：臺灣金山電子工業股份有限公司
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廣州廠：廣州金日科技有限公司
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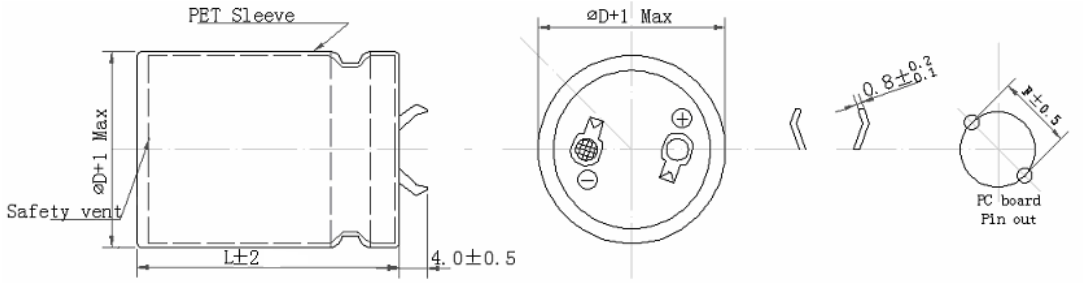
供應單位簽章 SUPPLIED BY				認定單位簽章 APPROVED BY
核準	張洪斌	主管	梁慧妍	經辦	孫嘉慧	

Component SPEC Version Record

VER.	**Minute Of Change**	Elite Check	Release Date
V1.0	First issue	陈嘉慧	2025/7/25

A9luminum Electrolytic Capacitor

Customer	TME	SERIES	GM	NO.: 20250724638	PUBLISH DATE	2025-7-25



No.	ELITE Part No.	Customer Part No.	Capacitance @25℃ 120Hz (uF)	Tolerance On rated Capacitance (%)	Working Voltage (Vdc)	Surge Voltage (Vdc)	Category Temp. Range (℃)	Tanδ @25℃ (120Hz) (Max)	Leakage Current (uA) (5 min.)	Rated Ripple Current (mA rms) @85℃ 120Hz	Endurance @ 85℃ (Hours)	Dimensions (mm)			Appearance Drawing No
												DΦ	L	F	
1	GM2W471MND3040Y	N/A	470	±20	450	495	-25~+85	0.15	3000	2100	2000	30	40	10	---

※Test leakage current before testing dissipation factor and capacitance during the electric characteristic test.

REMARKS:	APPROVED BY	CHECKED BY	PREPARED BY
	張洪斌	梁慧妍	陳嘉豐

Precautions in using Aluminum Electrolytic Capacitors

1. Standard DC electrolytic capacitors have polarity, which are indicated on the capacitors. They should not be used with polarity in reverse, if the polarity in circuit diagram is unknown, use non-polarised capacitors.
2. The capacitors should not be used at any temperature exceeding the range of the specified operating temperature.
3. If the capacitors are stored or left for a long time, aging should be conducted at the rated working voltage before application.
4. The capacitors are not suitable for circuits where sudden charge and discharge are frequently repeated.
5. Use the capacitors within the permissible ripple current range.
6. Do not impress voltage exceeding the capacitor's working voltage rating.
7. Be careful not to apply excessive force to the lead wires or terminals, which is subjected to the requirements of JIS-C-5101-4.
8. Soldering irons should be kept away from the sleeves of capacitors to avoid causing it to break.
9. Dip of flow soldering of the capacitors should be limited to 10 seconds at 260 degrees Celsius.
10. Take care when cleaning the circuit boards after soldering as some solvents that contain halogenated hydrocarbon solvents may have adverse effects on the capacitors.
11. When soldering lead wires or terminals of adjacent components, take care as if contacted, the capacitor sleeve may tear. Mount carefully so as not to bring adjacent components lead wires or terminals in contact with the sleeve, particularly when mounting on through-hole circuit boards.
12. The specification of products is followed by the characteristic (W) of JIS-C-5101-4. For methods of processing and testing, refer to JIS-C-5101-1.

PART NUMBER SYSTEM
(SNAP-IN TYPE)

◆ Example: GM Series 470 uF 450V Φ30 ×40 L

Series	Code
GM	GM

Capacitance Tolerance (%)	Code
±20	M
±5	J
±10	K
-10/+30	Q
-0/+20	R
-10/+20	V
-5/+20	H

Lead forming Type	Code
Snap-in Terminal	N
Three Terminals	W
Four Terminals	K
Forming & Cutting	R
	A
	E

Special Request	Code
High Rated ripple current	R
Endurance	F
Low Leakage Current	L
Low Dissipation Factor	D
High Temperature	H
Low Impedance & ESR	E
PET Sleeve	P
represents assembly without gasket	Y

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
G	M	2	W	4	7	1	M	N	D	3	0	4	0	Y					

Voltage (V)	Code
6.3	0J
10	1A
16	1C
25	1E
30	1F
35	1V
50	1H
63	1J
80	1K
100	2A
160	2C
180	2Z
200	2D
220	2P
250	2E
350	2V
400	2G
420	2S
450	2W
500	2H
550	2L

Capacitance (uF)	Code
100	101
120	121
150	151
270	271
330	331
470	471
680	681
1000	102
1200	122
1500	152
2300	232
2800	282
3300	332
10000	103
33000	333
¦	¦

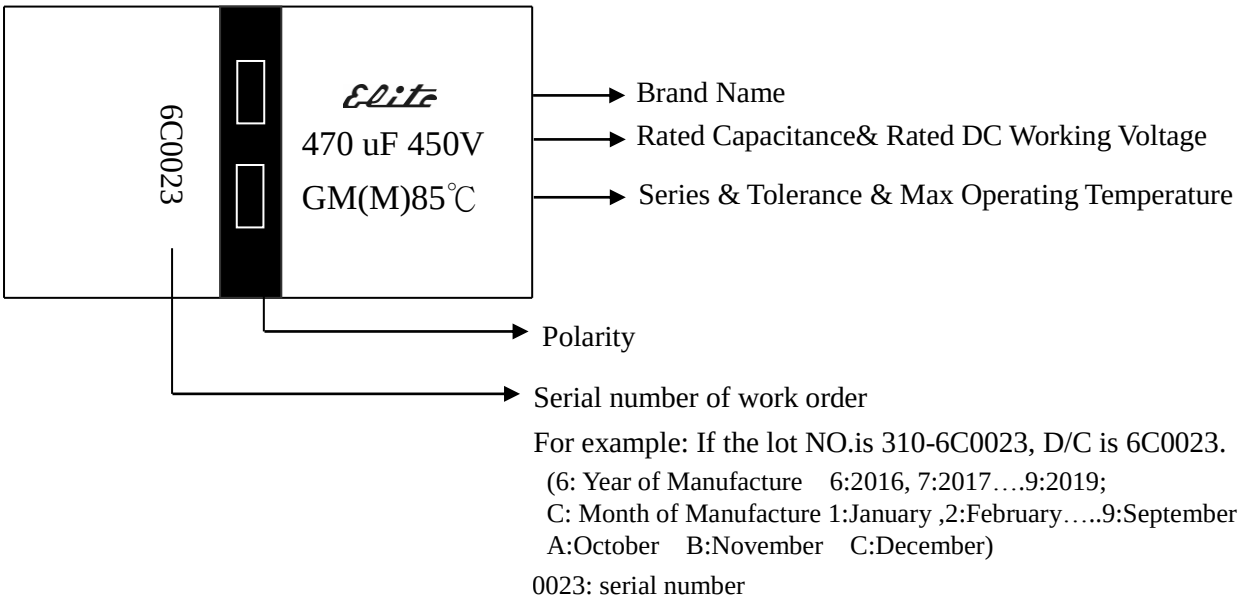
Terminal Length (mm)		Code
4.0	±0.5	D
4.5		4
5.5		N
6.3	±1.0	6

Size (mm) (ΦD x L)	Code
22 x 25	2225
22 x 30	2230
22 x 35	2235
22 x 40	2240
22 x 45	2245
25 x 25	2525
25 x 30	2530
25 x 45	2545
25 x 48	2548
25.4 x 40	2540
30 x 25	3025
30 x 30	3030
30 x 35	3035
30 x 40	3040
30 x 48	3048
30 x 51	3051
35 x 25	3525
35 x 30	3530
35 x 40	3540
35 x 45	3545
35 x 55	3555
35 x 60	3560
45 x 80	4580
¦	¦

Marking

Each capacitor shall be marked with the following information.
(The Front)

(The Dark Blue)



For example: If the lot NO.is 310-6C0023, D/C is 6C0023.
(6: Year of Manufacture 6:2016, 7:2017….9:2019;
C: Month of Manufacture 1:January ,2:February…..9:September
A:October B:November C:December)
0023: serial number

GM SERIES

<table>
<tr><th>Test Item</th><th>Test Condition</th><th>Acceptance Criteria</th></tr>
<tr><td>Temperature Cycle</td><td>
<table>
<tr><td></td><td>Temperature (℃)</td><td>Dwell Time (Minutes)</td></tr>
<tr><td rowspan="4">One Cycle</td><td>Rated low category temperature±3</td><td>30 ±3</td></tr>
<tr><td>+25℃</td><td>3MAX</td></tr>
<tr><td>Rated hight category temperature±2</td><td>30 ±3</td></tr>
<tr><td>+25℃</td><td>3MAX</td></tr>
<tr><td colspan="3">Total number of cycles: 5</td></tr>
</table>
</td><td>1. No appearance defect
2. Capacitance change within ±5%
3. D.F. smaller than specification value
4. Leakage current smaller than specification value</td></tr>
<tr><td>Resistance to Soldering Heat</td><td>Warm up time: 120 ±2 seconds to reach 120 ±2 ℃
Solder bath temperature: 260±5 ℃
Solder bath composition: Sn - 96.5%
Ag - 3.0%
Cu - 0.5%
Immersion depth : 1.5 to 2.0 mm
Immersion duration : 10±1 seconds</td><td>1. No appearance defect
2. Capacitance change within ±10%
3. D.F. smaller than specification value
4. Leakage current smaller than specification value</td></tr>
<tr><td>Solder Ability</td><td>Solder bath temperature: 235±5 ℃
Solder bath composition: Sn - 96.5%
Ag - 3.0%
Cu - 0.5%
Immersion depth: 1.5 to 2.0 mm
Immersion duration: 2±0.5 seconds</td><td>A minimum of 95% of the immersed surface is to be coated with the new solder</td></tr>
<tr><td>High Humidity Storage</td><td>Temperature: 40 ±2 ℃
Relative humidity: 90 to 95%
Duration: 240 ±8 hours</td><td>1. No appearance defect
2. Capacitance change within ±10%
3. D.F. change within 120% of the specified value
4. Leakage current smaller than specification value</td></tr>
<tr><td>Surge</td><td>Temperature: 85 ℃
Applied voltage: See specification
“ON” position: 30 seconds
“OFF” position: 5 minutes 30 seconds
Duration: 1000 cycles</td><td>1. No electrical or mechanical damage
2. Capacitance change within ±15%
3. D.F. smaller than specification value
4. Leakage current smaller than specification value</td></tr>
</table>

<table>
<tr><th>Test Item</th><th>Test Condition</th><th>Acceptance Criteria</th></tr>
<tr><td>Vent</td><td>Conduct under normal lighting conditions for lab work
<table><tr><td>Capacitor diameter</td><td>Applied Current (A)</td><td>Minute</td></tr><tr><td>Less than 22.4 mm</td><td>1</td><td rowspan="2">Within30</td></tr><tr><td>More than 22.5 mm</td><td>10</td></tr></table></td><td>There shall be no explosion, flash, flame, spark or fire from the capacitor during or after the test, nor shall there be expulsion of any metal from the casing.</td></tr>
<tr><td>Vibration</td><td>Frequency range: 10 Hz to 55 Hz
Amplitude: 1.5 mm
Cycle definition: 10 Hz to 55 Hz and back to 10 Hz
Cycle duration: 1 minute
Duration: 2 hours per direction (3 directions)</td><td>1. No electrical or mechanical damage
2. No appearance damage</td></tr>
<tr><td>Terminal Pull</td><td><table><tr><td>Terminal type & diameter (mm)</td><td>Load (Kg)</td></tr><tr><td>Snap-in</td><td>2.0</td></tr></table></td><td>1. No electrical or mechanical damage
2. No appearance damage</td></tr>
<tr><td>Endurance</td><td>The following specification shall be satisfied when the capacitors are restored to 25℃ after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 85℃.</td><td>1. Capacitance change within ±20% of the initial value
2. D.F. change within ±200% of the specified value
3. Leakage current smaller than specification value</td></tr>
<tr><td>Shelf Life</td><td>Capacitors are placed in an oven for 1,000 hours at 85℃ without applying rated working voltage. After being restored to 25℃, capacitors shall meet the specifications.</td><td>When conducting measurements after pre-treatment (JIS C 5101-4 4.1 items), the following requirements should be met:
1. Capacitance change within ±20% of the initial value
2. D.F. change within ±200% of the specified value
3. Leakage current within ±200% of the specified value</td></tr>
<tr><td>Maximum permissible ripple current</td><td>Temperature ：85±2℃
Voltage ：DC. Voltage+peak ripple voltage ≤ Rated voltage</td><td></td></tr>
<tr><td>Ripple current multipliers</td><td colspan="2">Frequency Multipliers
<table><tr><td rowspan="2">V.DC</td><td colspan="5">Frequency (Hz)</td></tr><tr><td>50</td><td>120</td><td>1K</td><td>10K</td><td>≥50K</td></tr><tr><td>25~63</td><td>0.80</td><td>1.00</td><td>1.15</td><td>1.15</td><td>1.15</td></tr><tr><td>160-250</td><td>0.81</td><td>1.00</td><td>1.32</td><td>1.45</td><td>1.50</td></tr><tr><td>315-475</td><td>0.77</td><td>1.00</td><td>1.30</td><td>1.41</td><td>1.43</td></tr></table></td></tr>
</table>