

鋁電解電容器

ALUMINUM ELECTROLYTIC CAPACITOR

• 訂貨方式HOW TO ORDER

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

產品類別 Type	代碼 Code	電壓 Voltage	代碼 Code	尺寸Dimensions φ DxL(mm)	代碼 Code	商標 Trademark	代碼 Code	內碼 Internal Code	代碼 Code
成品Product	8	4	LO	φ 4x5.5 Type	0405	LH NOVA	N	85°C普通品	81
素子Element	1	6.3	LA	φ 5x5.5 Type	0505			85°C凸臺膠粒	85
裸品 Semifinished Product	2	10	LB	φ 6.3x5.5 Type	AA05			85°C凸臺膠粒 PET膠管	8F
		16	LC	φ 4x7	0407			85°C平臺膠粒 PET膠管	8E
		25	LD	φ 5x11	0511			105°C普通品	11
		35	LE	φ 6.3x7	AA07				
		50	LF	φ 8x12	0812				
		63	LG	φ 10x20	1020				
		71	LJ	φ 12x20	1220				
		80	LH	φ 12.5x27	AB27				
		100	MA	φ 13x20	1320				
		110	MR	φ 13.5x31	AD31				
		120	MG	φ 14x25	1425				
		125	MH	φ 14.5x27	AC27				
		160	MB	φ 15x25	1525				
		180	MY	φ 15.5x40	AE40				
		200	MC	φ 17x25	1725				
		220	MJ	φ 17.5x37	AF37				
		250	MD	φ 18x20	1820				
		280	ME	φ 22x25	2225				
		300	MM	φ 35x50	A050				
		310	MP	φ 35x100	A100				
		315	MQ	φ 42x80	F080				
		330	MN	φ 50x80	B080				
		350	MF	φ 50x120	B120				
		385	MZ	φ 65x100	C100				
		400	VA	φ 76x130	G130				
		450	VB	φ 80x120	D120				
		500	VC	φ 90x130	E130				
		525	VD						

電容量範圍 Capacitance Range	標稱容量 (c) Nominal Capacitance	代碼 Code
C < 10uF, 小數 點用 "R" 表示 Decimal point should be expressed by "R"	0.22uF	R22
	1uF	1R0
	2.2uF	2R2
C ≥ 10uF, Cx10 ⁿ	22uF	220
	220uF	221
	2200uF	222
	22000uF	223
	220000uF	224
特殊 Special	125uF	12A
	235uF	23A
	275uF	27A

誤差 Tolerance	代碼 Code
±5%	J
±10%	K
±20%	M
±25%	Q
±30%	T
特殊 Special	A

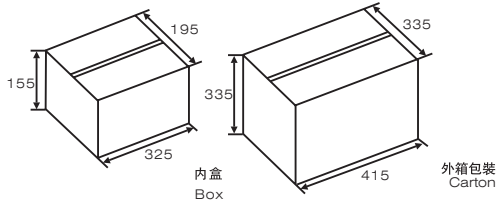
系列 Series	代碼 Code
WP	WP
MS	MS
LK	LK
⋮	⋮
詳見目錄, 代碼與系 列號相同 Code same with the series, detailed reference catalogue	

膠管顏色 Sleeve Color	代碼 Code
黑色 Black	0
深藍色 Dark-blue	1
淺藍色 blue	2
黃色 Yellow	3
紫色 Purple	4
墨綠色 Black-green	5
棕色 Brown	7
綠色 Green	9

產品脚型 Lead Forming Type	代碼 Code
散裝品 Bulk	0
5mm貼片編帶品 5mm Chip tape	T
(φ 4~φ 6.3) 2.5mm 脚距 編帶品: 2.5mm Tape	A
(φ 4~φ 6.3) 3.5mm 脚距 編帶品: 3.5mm Tape	R
(φ 4~φ 8) 5.0mm 成型 剪脚品 Lead forming	J
(φ 4~φ 8) 5mm 脚距 編帶品: 5mm Tape	F
直徑 φ > φ 8mm 直脚 方式編帶品, original type (vertical) tape	P
5mm 成型剪脚品 5mm Lead forming	M
原脚距型成型剪脚品 C Lead forming	C
B型成型剪脚品 B Lead forming	B
(φ 4~φ 5) 2.5mm 成型 剪脚品 Lead forming	D
φ 8x5 脚距 F 2.5mm	2

• 包裝PACKAGING

BOXES AND CARTONS DIMENSIONS (mm)

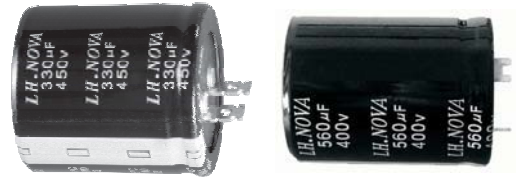


• 包裝數量PACKAGING QUANTITY

尺寸 (mm) Size	D	φ 4		φ 5		φ 6.3		φ 8		φ 10		φ 12.5		φ 16		φ 18		φ 20		φ 22							
	L+2max	5-7	5-7	5-11	5-7	11	14-16	5-12	14-16	20	9-12	14-16	20	25-30	16-25	30-55	15-20	21-30	31-40	20	21-30	35-40	41-50	25-40	25-35	≥40	
數量 Quantity	只/袋 pcs/plastic bag	1000										500		250	500	250	200	200	100	100	100	50	100	50	25	50	25
	袋/盒 plastic bags/box	20	15	10	10	8	10	10	6	10	6	10	8	6	8	6	10	6	10	8	10						
	盒/箱 boxes/craton	4																				2					
數量/箱 pcs/box	80	60	40	40	32	20	20	12	10	12	10	8	6.4	4.8	3.2	2.4	2	1.2	1.0	0.8	0.5	1	0.5				
外箱尺寸 Carton Size	415X335X335																										

■ LP型特性 FEATURES

- * 壽命: 85°C (105°C) 2000小時 Load life:85°C (105°C) 2000 hours
- * 小型化 Smaller size
- * 適用於開關電源、通信設備及其它各種電子產品
Ideally suited for switching power supplies ,
telecommunication and other electronic products



● 特性表 SPECIFICATIONS

項目Item	主要特性Performance Characteristics																							
額定工作電壓範圍 Rated Working Voltage Range	10V.DC~100V.DC	160V.DC~450V.DC																						
使用溫度範圍 Operating Temperature Range	-40 °C~+85°C(105°C)	-25 °C~+85°C(105°C)																						
標稱靜電容量範圍 Nominal Capacitance Range	1200 µF~100000 µF	100µF-2700µF																						
靜電容量允許偏差 Capacitance Tolerance	± 20%(M,+20°C,120Hz)																							
漏電流 Leakage Current	施加額定電壓5分鐘: $I \leq 3 \sqrt{CV} (\mu A) 20^\circ C$ After application of rated voltage for 5 minutes: $I \leq 3 \sqrt{CV} (\mu A) \text{ at } +20^\circ C$ C: 標稱靜電容量 (µF) C: Nominal Capacitance in µF; V: 額定工作電壓 (V) V: Rated Working Voltage in V																							
損耗角正切值(tan δ) Dissipation Factor	<table border="1"> <thead> <tr> <th>額定工作電壓(V) Rated Working voltage</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>160~250</th> <th>350~450</th> </tr> </thead> <tbody> <tr> <td>tan δ (MAX) (20°C,120Hz)^V</td> <td>0.55</td> <td>0.50</td> <td>0.45</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.20</td> </tr> </tbody> </table> 標稱靜電容量大于10000 µF者, 其標稱靜電容量每增加1000 µF, 損耗角正切值增加0.02 When capacitance is over 10000 tan δ shall be added 0.02 with increase of every 1000 µF		額定工作電壓(V) Rated Working voltage	10	16	25	35	50	63	80	100	160~250	350~450	tan δ (MAX) (20°C,120Hz) ^V	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.20
額定工作電壓(V) Rated Working voltage	10	16	25	35	50	63	80	100	160~250	350~450														
tan δ (MAX) (20°C,120Hz) ^V	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.20														
溫度特性 Temperature Stability	<table border="1"> <thead> <tr> <th>額定工作電壓 Rated Working Voltage in V</th> <th>10~100</th> <th>10~100</th> <th>160~250</th> <th>350~450</th> </tr> </thead> <tbody> <tr> <td>阻抗比(120Hz) Impedance Ratio</td> <td>Z-25°C/Z+20°C</td> <td>3</td> <td>4</td> <td>12</td> </tr> <tr> <td></td> <td>Z-40°C/Z+20°C</td> <td>12</td> <td></td> <td></td> </tr> </tbody> </table>		額定工作電壓 Rated Working Voltage in V	10~100	10~100	160~250	350~450	阻抗比(120Hz) Impedance Ratio	Z-25°C/Z+20°C	3	4	12		Z-40°C/Z+20°C	12									
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阻抗比(120Hz) Impedance Ratio	Z-25°C/Z+20°C	3	4	12																				
	Z-40°C/Z+20°C	12																						
高溫負荷特性 Load Life	在+85°C(105°C)環境中施加工作電壓和最大允許紋波電流2000小時后, 電容器的性能符合下表要求: After application of rated working voltage and maximum permissible current specified at +85°C(105°C) for 2000hours, capacitors meet the characteristics requirements listed below <table border="1"> <thead> <tr> <th>靜電容量變化 Capacitance change</th> <th>初始值的 ± 20%以內 Within ± 20% of the initial measured value</th> </tr> </thead> <tbody> <tr> <td>漏電流 Leakage Current</td> <td>不大于初期規定值 Less than the initial specified value</td> </tr> <tr> <td>損耗角正切值(tan δ)</td> <td>不大于初期規定值的150% Less than 150% the initial specified value</td> </tr> </tbody> </table>		靜電容量變化 Capacitance change	初始值的 ± 20%以內 Within ± 20% of the initial measured value	漏電流 Leakage Current	不大于初期規定值 Less than the initial specified value	損耗角正切值(tan δ)	不大于初期規定值的150% Less than 150% the initial specified value																
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高溫貯存特性 Shelf Life	在+85°C(105°C)環境中無負荷放置1000小時后, 電容器的性能符合高溫負荷特性中所列的規定值: After leaving capacitors under no load at +85°C(105°C) for 1000 hours ,capacitors meet the characteristics listed above																							

* 紋波倍乘因子 MULTIPLIER FOR RIPPLE CURRENT

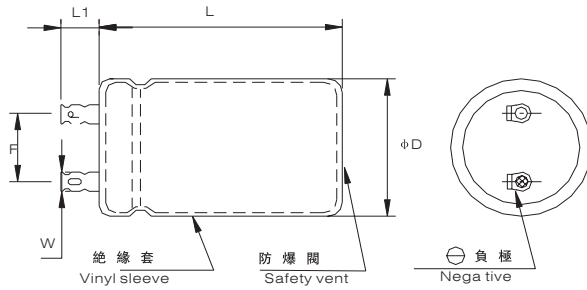
* 頻率因子 Frequency coefficient

VV(V)	Freq(Hz)				
	50	60	120	1k	10k
10~100	0.88	0.90	1.00	1.10	1.15
160~250	0.80	0.80	1.00	1.14	1.18
350~450	0.78	0.80	1.00	1.10	1.15

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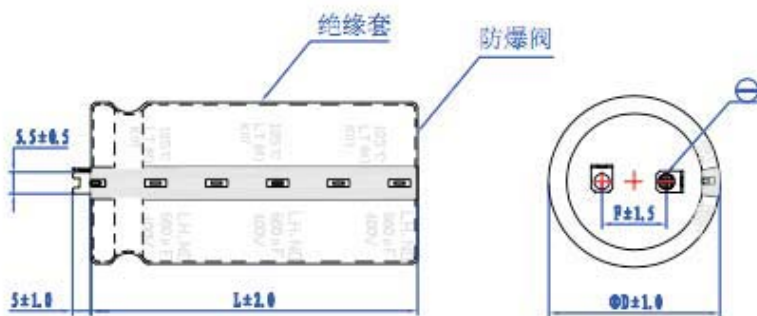
- 焊片(LP)外形圖及尺寸表
CASE SIZE TABLE ($\phi D \geq 25$)



- 外形圖及尺寸表 CASE SIZE TABLE

ϕD	25	30	35
$L \pm 2.0$	25~50	30~60	30~60
$F \pm 1.0$	10.0	10.0	10.0
$L_1 \pm 2.0$	12	12	12

- 焊片(LP) T型蓋板 外形圖及尺寸表
CASE SIZE TABLE ($\phi D \geq 30$)



- T型蓋板外形圖及尺寸表 CASE SIZE TABLE

ϕD	30	35
$L \pm 2.0$	30~60	30~60
$F \pm 1.5$	10.0	10.0

■ LP 尺寸、額定電壓及標稱容量(85℃)
DIMENSIONS, RATED VOLTAGE AND CAPACITANCE

WV(V) Cap(μF)	10(LB)		16(LC)		25(LD)		35(LE)		50(LF)		63(LG)		80(LH)		100(MA)		
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	
1200(122)															25 × 30	2.10	
1500(152)															25 × 35 30 × 30	2.40	
1800(182)													25 × 25	2.20	25 × 35	2.70	
2200(222)												25 × 25	2.30	25 × 30	2.50	25 × 40 30 × 35	3.20
2700(272)												25 × 30	2.50	25 × 35 30 × 30	2.90	25 × 45 30 × 35	3.60
3300(332)									25 × 25	2.40	25 × 35	2.60	25 × 45 30 × 35	3.20	30 × 45 35 × 40	4.00	
3900(392)									25 × 30	2.70	25 × 35 30 × 30	3.10	25 × 45 30 × 35	3.60	30 × 45 35 × 35	4.60	
4700(472)							25 × 25	2.40	25 × 30	3.00	25 × 40 30 × 30	3.30	25 × 50 35 × 40	4.20	35 × 45	5.10	
5600(562)							25 × 30	2.70	25 × 35 30 × 30	3.40	25 × 45 30 × 35	3.80	30 × 45 35 × 35	4.50	35 × 50	5.70	
6800(682)							25 × 30	2.80	25 × 40 30 × 35	3.80	25 × 50 30 × 40 35 × 35	4.40	30 × 50 35 × 40	5.10	35 × 60	6.00	
8200(822)					25 × 25	2.80	25 × 35 30 × 30	3.30	25 × 45 30 × 35	4.40	30 × 45 35 × 35	4.90	35 × 50	5.80			
10000(103)					25 × 30	3.10	25 × 40 30 × 30	3.50	30 × 40 35 × 35	5.00	30 × 50 35 × 40	5.40	35 × 60	6.50			
12000(123)			25 × 25	3.10	25 × 35	3.50	25 × 45 30 × 35	4.00	30 × 50 35 × 40	5.60	35 × 50	6.30					
15000(153)	25 × 25	2.80	25 × 30	3.60	25 × 40 30 × 30	4.00	30 × 40 35 × 35	4.80	35 × 45	6.40							
18000(183)	25 × 30	3.20	25 × 35 30 × 30	3.90	25 × 45 30 × 35	4.60	30 × 45 35 × 40	5.70	35 × 50	6.70							
22000(223)	25 × 30	3.60	25 × 40 30 × 30	4.50	30 × 40 35 × 35	5.20	35 × 45	6.30									
27000(273)	25 × 35 30 × 30	4.00	25 × 45 30 × 35	4.80	30 × 45 35 × 40	6.00	35 × 50	6.90									
33000(333)	25 × 40 30 × 30	4.50	25 × 50 30 × 40 35 × 35	5.30	35 × 45	6.70	35 × 60	7.80									
39000(393)	25 × 45 30 × 35	5.20	30 × 45 35 × 35	6.10	35 × 50	7.50	35 × 60	8.10									
47000(473)	25 × 50 30 × 40 35 × 35	5.70	30 × 50 35 × 40	6.80													
56000(563)	30 × 45 35 × 35	6.40	35 × 45	7.60													
68000(683)	30 × 50 35 × 40	7.50															
82000(823)	35 × 50	8.50															

鋁電解電容器

ALUMINUM ELECTROLYTIC CAPACITOR

• LP 尺寸、額定電壓及標稱容量 (85°C)

DIMENSIONS, RATED VOLTAGE AND CAPACITANCE



WV(V) Cap(uF)	160(MB)		200(MC)		250(MD)		350(MF)		400(VA)		450(VB)	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
100(101)											25 × 25	0.90
120(121)									25 × 25	1.08	25 × 30	1.00
150(151)							25 × 25	1.10	25 × 35	1.20	25 × 35 30 × 30	1.10
180(181)							25 × 30	1.30	25 × 35	1.30	25 × 40 30 × 30	1.30
220(221)					25 × 25	1.10	25 × 35	1.40	25 × 40 30 × 35	1.50	25 × 45 30 × 35	1.50
270(271)					25 × 30	1.40	25 × 40 30 × 35	1.60	25 × 40 30 × 35	1.70	25 × 50 30 × 40 35 × 35	1.80
330(331)			25 × 25	1.40	25 × 30	1.50	25 × 40 30 × 35	1.80	25 × 50 30 × 40	1.90	30 × 45 35 × 35	2.00
390(391)	25 × 30	1.50	25 × 30	1.60	25 × 30	1.70	25 × 45 30 × 35	2.10	30 × 40 35 × 35	2.10	30 × 50 35 × 40	2.20
470(471)	25 × 30	1.70	25 × 30	1.80	25 × 40 30 × 30	2.00	30 × 40 35 × 35	2.40	30 × 50 35 × 40	2.40	35 × 45	2.50
560(561)	25 × 30	2.00	25 × 35	2.00	25 × 40 30 × 35	2.30	30 × 45 35 × 35	2.60	35 × 45	2.70	35 × 60	3.10
680(681)	25 × 40	2.20	25 × 40 30 × 30	2.30	25 × 45 30 × 40	2.50	35 × 40	3.00	35 × 50	2.90		
820(821)	25 × 40 30 × 35	2.50	25 × 40 30 × 35	2.60	25 × 50 30 × 40	2.80	35 × 50	3.30				
1000(102)	25 × 45 30 × 35	2.80	25 × 50 30 × 40	3.00	30 × 50 35 × 40	3.30	35 × 60	3.50				
1200(122)	25 × 50 30 × 40	3.20	25 × 50 30 × 40 35 × 35	3.40	30 × 50 35 × 40	3.80						
1500(152)	30 × 45 35 × 40	3.70	30 × 50 35 × 40	3.90	35 × 50	4.10						
1800(182)	30 × 50 35 × 40	4.10	35 × 45 30 × 50	4.30	35 × 50	4.30						
2200(222)	35 × 45	4.70	35 × 50	5.00								
2700(272)	35 × 50	5.30										

→ 最大允許紋波電流 Max allowable ripple current (A r.m.s./85°C.120Hz)

→ 外形尺寸 Case Size $\Phi D \times L$ (mm)

■ LP 尺寸、額定電壓及標稱容量 (105°C)
DIMENSIONS, RATED VOLTAGE AND CAPACITANCE

WV(V) Cap(uF)	10 (LB)		16 (LC)		25 (LD)		35 (LE)		50 (LF)		63 (LG)		80 (LH)		100 (MA)		
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	
1200(122)													25 × 25	1.30	25 × 35	1.50	
1500(152)												25 × 25	1.38	25 × 25	1.59	25 × 40	1.89
1800(182)												25 × 30	1.50	25 × 30	1.80	25 × 45	2.10
2200(222)									25 × 25	1.46	25 × 30	1.66	25 × 35	2.01	25 × 50 30 × 40	2.48	
2700(272)									25 × 30	1.50	25 × 35	1.80	25 × 40	2.20	30 × 45	2.70	
3300(332)									30 × 35	1.72	25 × 35 30 × 30	2.15	25 × 45 30 × 35	2.50	30 × 50 35 × 45	3.25	
3900(392)								1.60	25 × 30	1.80	30 × 35	2.40	30 × 40	2.80	35 × 50	3.50	
4700(472)							25 × 25	1.87	25 × 35 30 × 30	2.25	25 × 50 30 × 40	2.77	30 × 45 35 × 35	3.30	30 × 60 35 × 50	3.80	
5600(562)							25 × 30	2.00	30 × 35	2.50	30 × 45	3.10	35 × 40	3.60	35 × 60	4.10	
6800(682)					25 × 25	1.88	22 × 40 25 × 35	2.28	25 × 45 30 × 35	2.91	30 × 50 35 × 40	3.61	30 × 50 35 × 45	3.90			
8200(820)			25 × 25	1.80	25 × 40	2.00	25 × 40	2.40	30 × 45	3.10	35 × 50	3.80	35 × 50	4.10			
10000(103)			22 × 30 25 × 30	2.07	25 × 35 30 × 30	2.38	25 × 45 30 × 35	2.78	30 × 50 35 × 40	3.57	30 × 60 35 × 50	4.69	35 × 60	4.30			
12000(123)			25 × 35	2.20	25 × 40	2.50	30 × 40	3.00	35 × 50	4.10							
15000(153)			25 × 35 30 × 30	2.54	25 × 45 30 × 35	3.00	30 × 45 35 × 35	3.70	35 × 50	4.76							
18000(183)	25 × 35	2.20	30 × 35	2.81	30 × 40	3.40	35 × 40	4.00									
22000(223)	25 × 35 30 × 30	2.59	25 × 45 30 × 35	3.31	30 × 45 35 × 35	3.92	30 × 50 35 × 45	4.90									
27000(273)	30 × 35	2.80	30 × 40	3.60	35 × 45	4.10	35 × 50	5.10									
33000(333)	25 × 45 30 × 35	3.43	30 × 45 35 × 40	4.33	30 × 60 35 × 50	5.13	35 × 60	6.30									
39000(393)	30 × 40	3.80	35 × 45	4.50	35 × 50	5.20											
47000(473)	30 × 45 35 × 40	4.20	30 × 50 35 × 45	5.49	35 × 60	6.65											
56000(563)	35 × 45	4.50	35 × 50	5.60													
68000(683)	30 × 60 35 × 50	5.50	35 × 60	7.00													
82000(823)	35 × 60	5.80															
100000(104)	35 × 60	7.10															

 最大允許紋波電流 Max allowable ripple current (A r.m.s./105°C.120Hz)
 外形尺寸 Case Size ΦD × L(mm)

鋁電解電容器

ALUMINUM ELECTROLYTIC CAPACITOR

• LP 尺寸、額定電壓及標稱容量 (105°C)

DIMENSIONS, RATED VOLTAGE AND CAPACITANCE

WV(V) Cap(μF)	160 (MB)		200 (MC)		250 (MD)		350 (MF)		400 (VA)		450 (VB)	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
100(101)							25 × 25	0.70	25 × 30	0.69	25 × 30	0.64
120(121)							25 × 30	0.80	25 × 35	0.75	25 × 35	0.70
150(151)						0.70	25 × 30	0.82	22 × 40 25 × 35	0.82	25 × 40 30 × 30	0.79
180(181)						0.80	25 × 35	1.00	22 × 45	0.90	30 × 35	0.85
220(221)					25 × 30	1.00	25 × 35 30 × 30	1.03	25 × 40 30 × 35	1.00	25 × 50 30 × 40	1.00
270(271)					25 × 35	1.20	30 × 35	1.10	30 × 40	1.10	30 × 45	1.10
330(331)	25 × 25	1.00	25 × 30	1.20	25 × 35 30 × 30	1.20	25 × 45 30 × 35	1.30	30 × 45 35 × 35	1.20	30 × 50 35 × 40	1.38
390(391)	25 × 30	1.10	25 × 35	1.30	30 × 35	1.30	30 × 40	1.40	35 × 40	1.30	35 × 45	1.40
470(471)	25 × 30	1.30	25 × 35	1.40	25 × 50 30 × 40	1.40	30 × 45 35 × 35	1.65	35 × 45	1.40	35 × 50	1.50
560(561)	30 × 30	1.50	30 × 35	1.50	30 × 45	1.50	35 × 45	1.80	35 × 50	1.50		
680(681)	25 × 40 30 × 30	1.60	30 × 40 35 × 35	1.70	30 × 45 35 × 40	1.70	35 × 50	2.00	35 × 60	1.80		
820(821)	30 × 35	1.80	35 × 40	1.80	35 × 45	1.80						
1000(102)	30 × 40 35 × 35	2.20	30 × 45 35 × 40	2.20	35 × 50				35 × 70	2.4		
1200(122)	35 × 40	2.30	35 × 45	2.30	35 × 60	2.40						
1500(152)	30 × 50 35 × 40	2.50	30 × 60 35 × 50	2.70								
1800(182)	35 × 50	2.80	35 × 60	2.80								
2200(222)	35 × 60	3.30	35 × 60	3.30								

→ 最大允許紋波電流 Max allowable ripple current (A r.m.s./105°C.120Hz)
 → 外形尺寸 Case Size ΦD × L(mm)