

Screw Terminal Aluminum Electrolytic Capacitors

SWA Series



FEATURES

- High temperature
- High ripple current capability
- Endurance: 105°C, 5000 hours
- RoHS Compliance and Halogen-free

APPLICATIONS

- Solar inverters
- Frequency converters
- Power Supplies

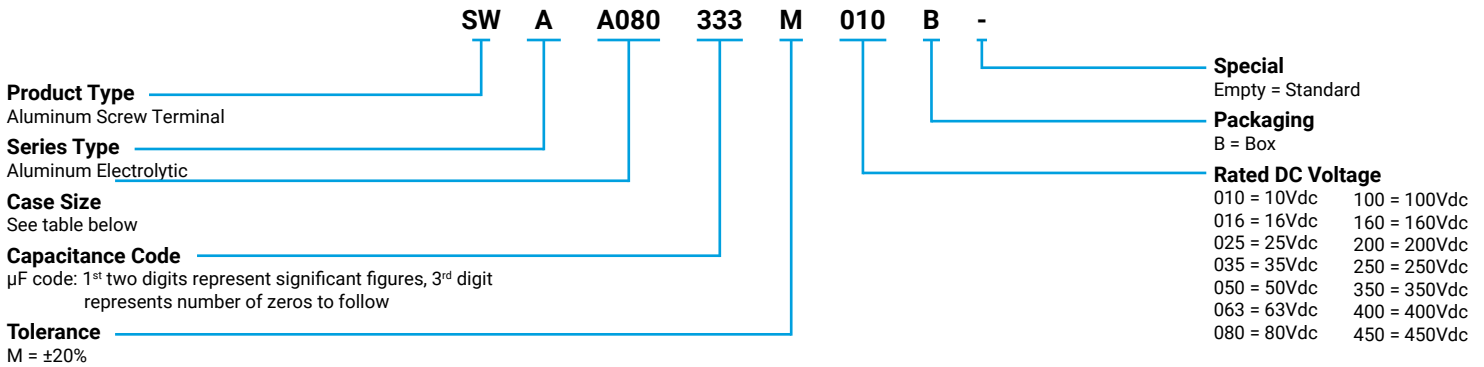


LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



RoHS
COMPLIANT

HOW TO ORDER



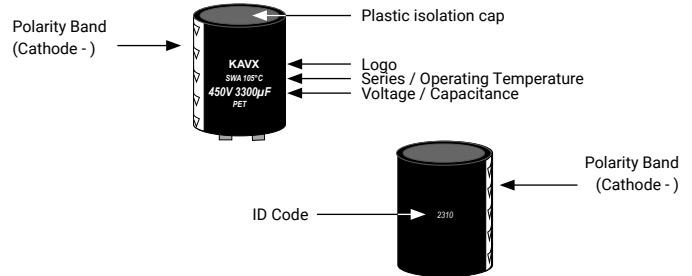
CASE DIMENSIONS millimeters (inches)

1 st Character	D ± 2.00 (0.118) Max.	W ± 1.00 (0.039)	e ± 1.00 (0.039)	α Max.	Leg Shape	W1 ± 2.00 (0.118)	W2 ± 2.00 (0.118)	T1	T2	S	ϕ°	H ± 1.00 (0.039)	h	2 nd - 4 th Character	L ± 3.00 (0.118) Max.
A	35 (1.378)	12.7 (0.500)	6 (0.236)	3 (0.118)	2-legs	24 (0.945)	30 (1.181)	6.0 (0.236)	10 (0.394)	3.5 (0.138)	30 (1.181)	16 (0.630)	12 (0.472)	080	80.00 (3.150)
B	51 (2.008)	22.0 (0.866)	6 (0.236)	3 (0.118)	2-legs	33.2 (1.307)	40 (1.575)	6.0 (0.236)	14 (0.551)	4.5 (0.177)	30 (1.181)	25 (0.984)	15 (0.591)	090	90.00 (3.543)
					3-legs	32.5 (1.280)	38.5 (1.516)	7.5 (0.295)	12 (0.472)	5.0 (0.197)	60 (2.362)	20 (0.787)	15 (0.591)	100	100.00 (3.927)
C	64 (2.520)	28.6 (1.126)	6 (0.236)	3 (0.118)	2-legs	40.5 (1.594)	46.5 (1.831)	6.0 (0.236)	14 (0.551)	4.5 (0.177)	30 (1.181)	35 (1.378)	20 (0.787)	120	120 (4.724)
					3-legs	38 (1.496)	43 (1.693)	8.0 (0.315)	14 (0.551)	5.0 (0.197)	60 (2.362)	25 (0.984)	20 (0.787)	140	140 (5.512)
D	76 (2.992)	31.8 (1.252)	6 (0.236)	3 (0.118)	2-legs	46.5 (1.831)	53 (2.087)	6.0 (0.236)	14 (0.551)	4.5 (0.177)	30 (1.181)	35 (1.378)	20 (0.787)	150	150 (5.906)
					3-legs	44.5 (1.752)	49.2 (1.937)	7.0 (0.276)	14 (0.551)	5.0 (0.197)	60 (2.362)	30 (1.181)	24 (0.945)	170	170 (6.693)
E	90 (3.543)	31.8 (1.252)	6 (0.236)	3 (0.118)	2-legs	53 (2.087)	59 (2.323)	6.0 (0.236)	14 (0.551)	4.5 (0.177)	30 (1.181)	35 (1.378)	20 (0.787)	180	180 (7.087)
					3-legs	50.8 (2.000)	57 (2.244)	7.0 (0.276)	16 (0.630)	5.0 (0.197)	60 (2.362)	35 (1.378)	20 (0.787)	190	190 (7.480)

TECHNICAL SPECIFICATIONS

Category Temperature Range:	-40°C to +105°C (10-100V), -25°C to +105°C (160-450V)	
Capacitance Range	At 25°C, 120Hz	220 μF to 680,000 μF
Capacitance Tolerance:	At 25°C, 120Hz	$\pm 20\%$
Dissipation Factor (%)	Measurement Frequency: 120Hz at 25°C	Please see the ratings and part number reference table below
Leakage Current:	After 5 minutes at rated working voltage at 25°C	$I \leq 0.02CV$ (μA) or 5mA, whichever is smaller

MARKING

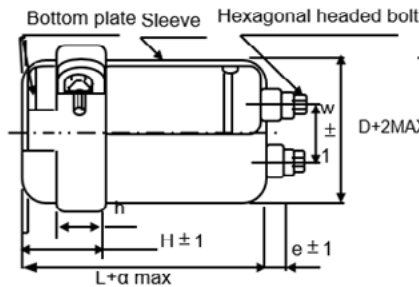


Screw Terminal Aluminum Electrolytic Capacitors

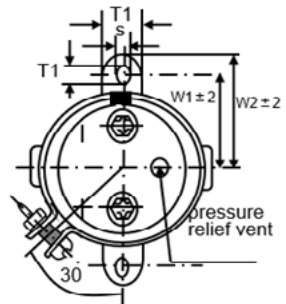
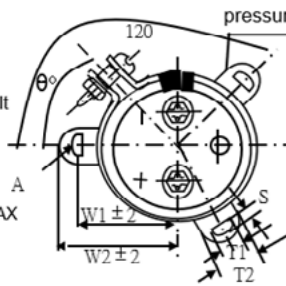
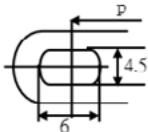
SWA Series

• DIMENSIONS

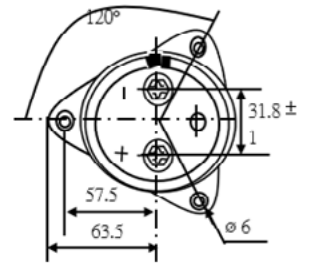
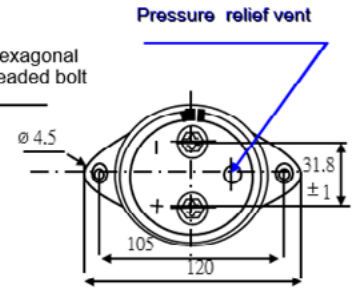
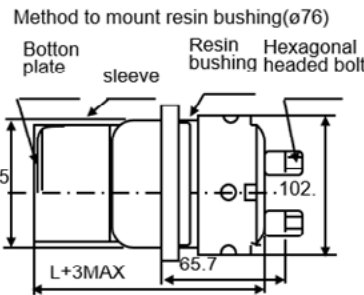
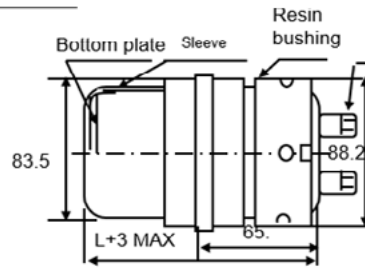
Screw terminal type for $\phi 51$ and larger



A
3-leg brackets for $\phi 90$ capacitors have different hole shapes from the ordinary ones as illustrated



Method to mount resin bushing



CAPACITANCE AND RATED VOLTAGE RANGE (FIGURES DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R)													
μF	Code	10V	16V	25V	35V	50V	63V	80V	100V	160V	200V	250V	350V	400V	450V
220	221													A100	A100
330	331													A100	A120
470	471													A100	B100
680	681											A100		B100	B120
1,000	102									A100	A100	A120	B100	B100	B120
1,500	152									A100	A120	B100	B120	B140	B140
2,200	222								A100	A120	B100	B120	B140	C120	C120
2,700	272													C120	C140
3,300	332								A100	B100	B120	C120	C120	C140	D150
3,900	392													C140	D120
4,700	472							A100	A120	B120	C120	C140	C170	C190	D170
5,600	562													D150	D170
6,800	682							A120	B100	C120	C140	D150	D170	D190	E170
8,200	822													D170	E150
10,000	103				A100	A100	A120	B100	B120	C150	D150	E150	E170		
15,000	153				A100	A120	B100	B120	C120	D150	D150	E190			
22,000	223			A100	A120	B100	B120	C120	D120	D150	E150				
33,000	333	A080	A080	A120	B140	B140	C120	D120	D150	E150					
47,000	473	A100	A100	B100	B120	C120	C140	D150	E150						
68,000	683	B080	B080	B140	B140	C140	D150	E150	E190						
100,000	104	B100	B100	C120	C140	D150	E150	E190							
150,000	154	B120	B120	C140	D150	E150	E190								
220,000	224	C120	C120	D150	E150	E190									
330,000	334	D120	D120	E150	E190										
470,000	474	E140	E140	E190											
680,000	684	E170	E170												

Released ratings

Screw Terminal Aluminum Electrolytic Capacitors

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RATINGS & PART NUMBER REFERENCE

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	120Hz RMS Current (mA)/105°C
10V						
SWAA080333M010B	A080	33,000	10	5,000	65	4,700
SWAA100473M010B	A100	47,000	10	5,000	65	6,000
SWAB080683M010B	B080	68,000	10	5,000	90	6,500
SWAB100104M010B	B100	100,000	10	5,000	90	8,200
SWAE180104M010B	E180	100,000	10	5,000	240	17,500
SWAB120154M010B	B120	150,000	10	5,000	90	10,200
SWAC120224M010B	C120	220,000	10	5,000	20	13,000
SWAD120334M010B	D120	330,000	10	5,000	200	15,200
SWAE140474M010B	E140	470,000	10	5,000	240	16,000
SWAE170684M010B	E170	680,000	10	5,000	240	18,000
16V						
SWAA080333M016B	A080	33,000	16	5,000	45	4,800
SWAA100473M016B	A100	47,000	16	5,000	45	6,000
SWAB080683M016B	B080	68,000	16	5,000	60	6,500
SWAB100104M016B	B100	100,000	16	5,000	60	9,000
SWAE190104M016B	E190	100,000	16	5,000	200	18,500
SWAB120154M016B	B120	150,000	16	5,000	60	11,400
SWAC120224M016B	C120	220,000	16	5,000	80	14,500
SWAD120334M016B	D120	330,000	16	5,000	120	17,000
SWAE140474M016B	E140	470,000	16	5,000	200	20,200
SWAE170684M016B	E170	680,000	16	5,000	200	22,000
25V						
SWAA100223M025B	A100	22,000	25	5,000	40	4,400
SWAA120333M025B	A120	33,000	25	5,000	40	6,000
SWAB100473M025B	B100	47,000	25	5,000	50	8,000
SWAB140683M025B	B140	68,000	25	5,000	50	10,000
SWAC120104M025B	C120	100,000	25	5,000	70	11,000
SWAC140154M025B	C140	150,000	25	5,000	70	13,500
SWAD150224M025B	D150	220,000	25	5,000	90	16,500
SWAE150334M025B	E150	330,000	25	5,000	150	20,200
SWAE190474M025B	E190	470,000	25	5,000	150	22,000
35V						
SWAA100103M035B	A100	10,000	35	5,000	30	4,300
SWAA100153M035B	A100	15,000	35	5,000	30	5,000
SWAA120223M035B	A120	22,000	35	5,000	30	5,200
SWAA140333M035B	A140	33,000	35	5,000	30	7,000
SWAB120473M035B	B120	47,000	35	5,000	40	8,000
SWAB140683M035B	B140	68,000	35	5,000	40	12,000
SWAC140104M035B	C140	100,000	35	5,000	50	13,200
SWAD150154M035B	D150	150,000	35	5,000	70	15,000
SWAE150224M035B	E150	220,000	35	5,000	100	17,100
SWAE190334M035B	E190	330,000	35	5,000	100	21,000
50V						
SWAA100103M050B	A100	10,000	50	5,000	25	4,500
SWAA120153M050B	A120	15,000	50	5,000	25	5,200
SWAB100223M050B	B100	22,000	50	5,000	25	6,000
SWAB140333M050B	B140	33,000	50	5,000	25	7,500
SWAC120473M050B	C120	47,000	50	5,000	35	9,500
SWAC140683M050B	C140	68,000	50	5,000	35	12,500
SWAD150104M050B	D150	100,000	50	5,000	55	16,500
SWAE150154M050B	E150	150,000	50	5,000	75	19,500
SWAE190224M050B	E190	220,000	50	5,000	75	21,500
63V						
SWAA120103M063B	A120	10,000	63	5,000	25	4,500
SWAB100153M063B	B100	15,000	63	5,000	25	5,500
SWAB120223M063B	B120	22,000	63	5,000	25	6,500
SWAC120333M063B	C120	33,000	63	5,000	30	9,000
SWAC140473M063B	C140	47,000	63	5,000	30	11,000
SWAD150683M063B	D150	68,000	63	5,000	50	13,200
SWAE150104M063B	E150	100,000	63	5,000	60	17,300
SWAE190154M063B	E190	150,000	63	5,000	60	20,500

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SWA Series

Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	120Hz RMS Current (mA)/105°C
80V						
SWAA100472M080B	A100	4,700	80	5,000	20	3,100
SWAA120682M080B	A120	6,800	80	5,000	20	3,400
SWAB100103M080B	B100	10,000	80	5,000	20	5,000
SWAB120153M080B	B120	15,000	80	5,000	20	6,000
SWAC120223M080B	C120	22,000	80	5,000	25	8,000
SWAD120333M080B	D120	33,000	80	5,000	35	9,500
SWAD150473M080B	D150	47,000	80	5,000	35	13,000
SWAE150683M080B	E150	68,000	80	5,000	40	16,500
SWAE190104M080B	E150	100,000	80	5,000	40	18,200
100V						
SWAA100222M100B	A100	2,200	100	4,400	12	2,000
SWAA100332M100B	A100	3,300	100	5,000	12	3,000
SWAA120472M100B	A120	4,700	100	5,000	12	3,400
SWAB100682M100B	B100	6,800	100	5,000	15	5,000
SWAB120103M100B	B120	10,000	100	5,000	15	6,200
SWAC120153M100B	C120	15,000	100	5,000	20	7,400
SWAD120223M100B	D120	22,000	100	5,000	30	9,500
SWAD150333M100B	D150	33,000	100	5,000	30	12,300
SWAE150473M100B	E150	47,000	100	5,000	30	16,500
SWAE190683M100B	E190	68,000	100	5,000	30	18,000
160V						
SWAA100102M160B	A100	1,000	160	3,200	15	1,600
SWAA100152M160B	A100	1,500	160	4,800	15	2,100
SWAA120222M160B	A120	2,200	160	5,000	15	2,700
SWAB100332M160B	B100	3,300	160	5,000	15	3,800
SWAB120472M160B	B120	4,700	160	5,000	15	4,500
SWAC120682M160B	C120	6,800	160	5,000	20	6,800
SWAC150103M160B	C150	10,000	160	5,000	20	7,800
SWAD150153M160B	D150	15,000	160	5,000	20	9,800
SWAD150223M160B	D150	22,000	160	5,000	20	12,500
SWAE150333M160B	E150	33,000	160	5,000	25	13,400
200V						
SWAA100102M200B	A100	1,000	200	4,000	15	1,700
SWAA120152M200B	A120	1,500	200	5,000	15	2,300
SWAB100222M200B	B100	2,200	200	5,000	15	2,900
SWAB120332M200B	B120	3,300	200	5,000	15	3,900
SWAC120472M200B	C120	4,700	200	5,000	20	5,100
SWAC140682M200B	C140	6,800	200	5,000	20	7,000
SWAD150103M200B	D150	10,000	200	5,000	20	8,200
SWAD150153M200B	D150	15,000	200	5,000	20	10,400
SWAE150223M200B	E150	22,000	200	5,000	25	15,100
250V						
SWAA100681M250B	A100	680	250	3,400	15	1,400
SWAA120102M250B	A120	1,000	250	5,000	15	1,900
SWAB100152M250B	B100	1,500	250	5,000	15	2,400
SWAB120222M250B	B120	2,200	250	5,000	15	3,200
SWAC120332M250B	C120	3,300	250	5,000	20	4,300
SWAC140472M250B	C140	4,700	250	5,000	20	5,900
SWAD150682M250B	D150	6,800	250	5,000	20	7,100
SWAE150103M250B	E150	10,000	250	5,000	25	9,600
SWAE190153M250B	E190	15,000	250	5,000	25	12,700
350V						
SWAA100331M350B	A100	330	350	2,310	20	2,000
SWAA100471M350B	A100	470	350	3,290	20	2,400
SWAB100681M350B	B100	680	350	4,760	20	4,000
SWAB100102M350B	B100	1,000	350	5,000	20	6,200
SWAB120152M350B	B120	1,500	350	5,000	20	8,200
SWAB140222M350B	B140	2,200	350	5,000	20	10,600
SWAC120272M350B	C120	2,700	350	5,000	20	12,200
SWAC120332M350B	C120	3,300	350	5,000	20	14,000
SWAC140392M350B	C140	3,900	350	5,000	20	16,400
SWAC170472M350B	C170	4,700	350	5,000	20	19,400
SWAD150472M350B	D150	4,700	350	5,000	20	19,300
SWAD150562M350B	D150	5,600	350	5,000	20	22,000

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Part No.	Case Size	Capacitance (μF)	Rated Voltage (V)	DCL Max. (μA)	DF Max. (%)	120Hz RMS Current (mA)/105°C
SWAD170682M350B	D170	6,800	350	5,000	20	26,000
SWAD170822M350B	D170	8,200	350	5,000	20	30,000
SWAE150822M350B	E150	8,200	350	5,000	20	29,000
SWAE170103M350B	E170	10,000	350	5,000	20	32,000
400V						
SWAA100221M400B	A100	220	400	1,760	20	1,200
SWAA100331M400B	A100	330	400	2,640	20	2,000
SWAA120471M400B	A120	470	400	3,760	20	3,000
SWAB100681M400B	B100	680	400	5,000	20	4,000
SWAB100102M400B	B100	1,000	400	5,000	20	6,200
SWAB140152M400B	B140	1,500	400	5,000	20	9,000
SWAC120222M400B	C120	2,200	400	5,000	20	11,200
SWAC120272M400B	C120	2,700	400	5,000	20	13,000
SWAC140332M400B	C140	3,300	400	5,000	20	15,000
SWAC170392M400B	C170	3,900	400	5,000	20	17,500
SWAD120392M400B	D120	3,900	400	5,000	20	18,000
SWAC190472M400B	C190	4,700	400	5,000	20	20,300
SWAD150472M400B	D150	4,700	400	5,000	20	20,000
SWAD170562M400B	D170	5,600	400	5,000	20	23,300
SWAD190682M400B	D190	6,800	400	5,000	20	27,200
SWAE170682M400B	E170	6,800	400	5,000	20	26,500
SWAE190822M400B	E190	8,200	400	5,000	20	29,500
450V						
SWAA100221M450B	A100	220	450	1,980	20	1,400
SWAA120331M450B	A120	330	450	2,970	20	2,000
SWAB100471M450B	B100	470	450	4,230	20	3,000
SWAB120681M450B	B120	680	450	5,000	20	4,000
SWAB090102M450B	B090	1,000	450	5,000	20	4,500
SWAB120102M450B	B120	1,000	450	5,000	20	6,500
SWAB140152M450B	B140	1,500	450	5,000	20	9,000
SWAC120222M450B	C120	2,200	450	5,000	20	11,400
SWAC140272M450B	C140	2,700	450	5,000	20	13,400
SWAD120272M450B	D120	2,700	450	5,000	20	14,100
SWAC170332M450B	C170	3,300	450	5,000	20	16,200
SWAD150332M450B	D150	3,300	450	5,000	20	17,000
SWAC190392M450B	C190	3,900	450	5,000	20	18,000
SWAD170472M450B	D170	4,700	450	5,000	20	21,300
SWAD190562M450B	D190	5,600	450	5,000	20	26,000
SWAE170562M450B	E170	5,600	450	5,000	20	24,000
SWAE190682M450B	E190	6,800	450	5,000	20	28,000

FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

Rated Voltage (Vdc)	Frequency (Hz)				
	60Hz	120Hz	360Hz	1K	≥10K
10 - 100	0.90	1.00	1.08	1.15	1.15
160 - 250	0.88	1.00	1.08	1.15	1.20
315 - 450	0.82	1.00	1.20	1.35	1.40

QUALIFICATION TABLE

Test	SWA series (Temperature range -40°C to +105°C (10-100V), -25°C to +105°C (160-450V))			
	Condition	Characteristics		
Low Temperature Characteristics (Max. Impedance Ratio)	At 120Hz	Rated Voltage (V)	10 - 100	160 - 450
		Z(-25°C)/Z(+20°C)	-	8
		Z(-40°C)/Z(+20°C)	12	-
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 5000 hours (10-250V, 2000 hours) at 105°C.	ΔC/C	≤ ±20% of the initial limit	
		DF	≤ 300% of the initial specified limit	
		DCL	≤ initial specified limit	
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000hours 105°C without voltage applied. Before the measurement.	ΔC/C	≤ ±20% of the initial limit	
		DF	≤ 300% of the initial specified limit	
		DCL	≤ initial specified limit	
Standards	JIS C 5141 and JIS C 5102			

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SWA Series

STORAGE

1. It is recommended to keep capacitors between the ambient temperatures of 5°C to 35°C and a relative humidity of 75% or below.
2. Confirm that the environment does not have any of the following conditions:
 - a. Damp conditions such as water, saltwater spray, or oil spray or fumes. High humidity or humidity condensation situations.
 - b. In an atmosphere filled with toxic gasses (such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, etc.).
 - c. Being exposed to direct sunlight, ozone, ultraviolet ray, or radiation.
 - d. Exposed to acidic or alkaline solutions.
 - e. Under severe conditions where vibration and / or mechanical shock exceed the applicable ranges of the specification.
- 3.

Category	Description	Storage Life
Mid-High Voltage	160V and above	2yrs, after 1yr, needs to check characteristics, if NG, needs to do aging
Low Voltage	120V and below	2 yrs

PACKAGE TAPE DIMENSIONS units (mm)

Type of Product	Case Size	Dim. (DxL)	Quantity (pcs/Inner Box)	Layer Quantity	Total Quantity (pcs/Carton)	Size Inner Box (mm)	Size Out Box (mm)
Screw Terminal	A080	35x80	25	2 Layers (2 inner boxes per layer)	100	204x204x146	428x214x312
	A100	35x100	25	2 Layers (2 inner boxes per layer)	100		
	A120	35x120	25	2 Layers (2 inner boxes per layer)	100		
	B080	51x80	40 or 36	1	40 or 36	515x337x260	515x337x260
	B090	51x90		1			
	B100	51x100		1			
	B120	51x120		1			
	B140	51x140	1	24 or 20	24 or 20	515x337x260	515x337x260
	C120	64x120	1				
	C140	64x140	1				
	C170	64x170	1	16	16	515x337x310	515x337x310
	C190	64x190	1				
	D120	76x120	1				
	D150	76x150	15 or 12	1	15 or 12	515x337x260	515x337x260
	D170	76x170		1			
	D190	76x190	9	1	9	515x337x310	515x337x310
	E150	90x150	15 or 12	1	15 or 12	515x337x260	515x337x260
	E170	90x170		1			
E190	90x190	1					