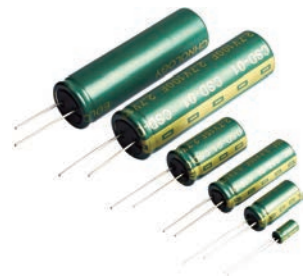




ELECTRIC DOUBLE-LAYER CAPACITOR
(SUPER CAPACITOR)

FEATURES

Rated voltage:2.7V 3.0V
Capacitance:0.1F~60F
Low ESR for high power density
Long cycle life
Suitable for quick charge and discharge
Accept customization



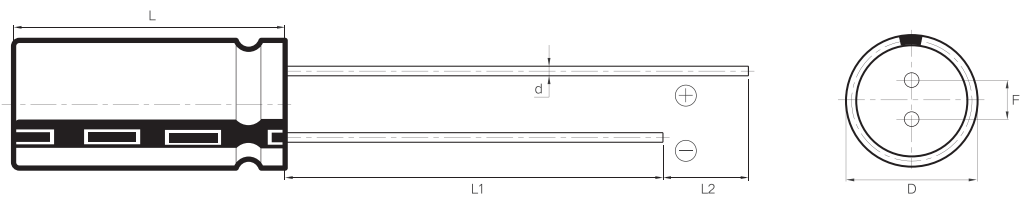
APPLICATIONS

Typical applications include hybrid battery packs, UPS & telecom systems, hold up power, high pulse current applications.

ORDERING INFORMATION

CSD01	MT	2R7	305	K	C05	Y	F
Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Termination Finish	Packaging
CSD01	LT:-55°C~+70°C MT(2.7V):-40°C~+70°C MT(3.0V):-40°C~+65°C HT:-40°C~+85°C	2R7:2.7V 3R0:3.0V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	K=±10% M=±20% N=±30% V=-20%~+80%	Refer to dimensions	Y=CP wire	F=Waffle

DIMENSIONS



Size Code	Case Size (mm)				Weight(g)
	L	D	F	d	
C02	7.50 ^{+0.80} _{-0.50}	5.00 ^{+0.40} _{-0.05}	1.85±0.25	0.45±0.05	0.30±0.10
C03	12.00 ^{+1.20} _{-0.50}	6.30 ^{+0.40} _{-0.15}	2.65±0.25	0.60±0.10	0.66±0.20
C04	12.00 ^{+1.20} _{-0.50}	8.00 ^{+0.40} _{-0.15}	3.30±0.25	0.60±0.10	0.90±0.35
C45	12.00 ^{+1.20} _{-0.50}	8.00 ^{+0.40} _{-0.15}	3.30±0.25	0.70±0.10	0.90±0.35
C05	17.00 ^{+1.80} _{-1.50}	8.00 ^{+0.40} _{-0.15}	3.50±0.25	0.60±0.10	1.35±0.30
C06	20.00 ^{+1.80} _{-1.50}	8.00 ^{+0.50} _{-0.15}	3.50±0.25	0.60±0.10	1.50±0.30
C07	20.00 ^{+1.80} _{-1.50}	10.00 ^{+0.50} _{-0.15}	4.75±0.25	0.60±0.10	2.25±0.50
C08	34.00 ^{+1.80} _{-1.50}	16.00 ^{+0.60} _{-0.20}	7.50±0.30	0.80±0.10	8.10±0.50
C09	26.00 ^{+1.80} _{-1.50}	10.00 ^{+0.50} _{-0.20}	5.00±0.30	0.60±0.10	3.00±0.80
C10	30.00 ^{+1.80} _{-1.50}	10.00 ^{+0.60} _{-0.20}	5.00±0.30	0.60±0.10	3.10±0.60
C11	26.00 ^{+1.80} _{-1.50}	16.00 ^{+0.60} _{-0.20}	7.50±0.30	0.80±0.10	7.80±1.50
C12	31.00 ^{+1.80} _{-1.50}	16.00 ^{+0.60} _{-0.20}	7.50±0.30	0.80±0.10	8.50±1.00
C14	42.00 ^{+1.80} _{-1.50}	18.00 ^{+0.60} _{-0.20}	7.50±0.30	0.80±0.10	13.00±1.50
C15	42.00 ^{+1.80} _{-1.50}	18.00 ^{+0.60} _{-0.20}	7.50±0.30	0.80±0.10	14.00±1.80
C19	21.00 ^{+1.80} _{-1.50}	12.50 ^{+0.50} _{-0.15}	5.00±0.30	0.60±0.10	3.50±0.80
C20	26.00 ^{+1.80} _{-1.50}	12.50 ^{+0.50} _{-0.15}	5.00±0.30	0.60±0.10	4.05±0.80
C21	25.00 ^{+1.80} _{-1.50}	10.00 ^{+0.50} _{-0.20}	5.00±0.30	0.60±0.10	3.00±0.80
C25	25.00 ^{+1.80} _{-1.50}	8.00 ^{+0.50} _{-0.15}	3.50±0.25	0.60±0.10	2.00±0.40
C34	30.00 ^{+1.80} _{-1.50}	12.50 ^{+0.50} _{-0.15}	5.00±0.30	0.60±0.10	5.20±0.80
C36	47.00 ^{+1.80} _{-1.50}	12.50 ^{+0.50} _{-0.15}	5.00±0.30	0.60±0.10	7.50±1.20
C38	40.00 ^{+1.80} _{-1.50}	16.00 ^{+0.60} _{-0.20}	7.50±0.30	0.80±0.10	11.5±1.50
C39	37.00 ^{+1.80} _{-1.50}	18.00 ^{+0.60} _{-0.20}	7.50±0.30	0.80±0.10	12.7±1.50

CAPACITANCE AND RATED VOLTAGE RANGE

Part NO.	Rated Voltage(V)	Capacitance (F)	Capacitance Tolerance	Max ESR (mΩ) AC(at 1kHz)	Max ESR (mΩ) DC	Leakage Current Max. (μA,72hr)	Voltage Holding Characteristics Min. (V,24hr)	Maximum Peak Current ¹ (A)
CSD01MT2R7104□C02YF	2.7	0.1	M,N,V	1500	5000	5	2.1	0.09
CSD01MT2R7154□C02YF	2.7	0.15	M,N,V	600	2500	5	2.1	0.15
CSD01MT2R7254□C02YF	2.7	0.25	M,N,V	400	1800	5	2.1	0.23
CSD01MT2R7504□C03YF	2.7	0.5	M,N,V	300	1000	5	2.2	0.45
CSD01MT2R7704□C03YF	2.7	0.7	M,N,V	250	800	5	2.2	0.61
CSD01MT2R7504□C04YF	2.7	0.5	M,N,V	300	1000	5	2.2	0.45
CSD01MT2R7105□C03YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01MT2R7105□C04YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01MT2R7105□C45YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01MT2R7205□C04YF	2.7	2	K,M,V	160	600	8	2.3	1.23
CSD01MT2R7305□C05YF	2.7	3	K,M,V	80	220	12	2.4	2.44
CSD01MT2R7335□C06YF	2.7	3.3	K,M,V	80	220	12	2.4	2.58
CSD01MT2R7505□C07YF	2.7	5	K,M,V	60	160	15	2.4	3.75
CSD01MT2R7505□C25YF	2.7	5	K,M,V	70	200	15	2.4	3.38
CSD01MT2R7705□C07YF	2.7	7	K,M,V	50	120	25	2.4	5.14
CSD01MT2R7805□C09YF	2.7	8	K,M,V	40	120	25	2.4	5.51
CSD01MT2R7106□C09YF	2.7	10	K,M,V	50	120	30	2.4	6.14
CSD01MT2R7106□C10YF	2.7	10	K,M,V	40	120	40	2.4	7.71
CSD01MT2R7106□C21YF	2.7	10	K,M,V	50	75	30	2.4	6.14
CSD01MT2R7106□C19YF	2.7	10	K,M,V	40	75	40	2.4	7.71
CSD01MT2R7126□C10YF	2.7	12	K,M,V	40	60	40	2.4	8.53
CSD01MT2R7156□C20YF	2.7	15	K,M,V	35	60	50	2.4	10.66
CSD01MT2R7206□C20YF	2.7	20	K,M	30	45	60	2.4	12.27
CSD01MT2R7206□C11YF	2.7	20	K,M	30	45	60	2.4	14.21
CSD01MT2R7206□C34YF	2.7	20	K,M	30	45	60	2.4	14.21
CSD01MT2R7256□C11YF	2.7	25	K,M	25	40	75	2.4	15.88
CSD01MT2R7306□C12YF	2.7	30	K,M	20	40	90	2.4	18.41
CSD01MT2R7356□C36YF	2.7	35	K,M	20	38	110	2.4	19.69
CSD01MT2R7356□C08YF	2.7	35	K,M	25	30	110	2.4	20.28
CSD01MT2R7406□C38YF	2.7	40	K,M	20	25	120	2.4	24.55
CSD01MT2R7506□C14YF	2.7	50	K,M	15	30	150	2.4	30.00
CSD01MT2R7606□C39YF	2.7	60	K,M	15	25	150	2.4	32.40
CSD01MT2R7606□C15YF	2.7	60	K,M	15	25	150	2.4	32.40
CSD01MT3R0254□C02YF	3.0	0.25	M,N,V	500	2500	5	2.2	0.23
CSD01MT3R0254□C23YF	3.0	0.25	M,N,V	600	2000	5	2.3	0.25
CSD01MT3R0105□C04YF	3.0	1	M,N,V	300	800	6	2.5	0.83
CSD01MT3R0205□C04YF	3.0	2	K,M,V	200	600	10	2.5	1.36
CSD01MT3R0205□C05YF	3.0	2	K,M,V	100	200	10	2.5	2.14
CSD01MT3R0305□C05YF	3.0	3.0	K,M,V	100	300	15	2.5	2.37
CSD01MT3R0335□C06YF	3.0	3.3	K,M,V	100	300	15	2.5	2.49
CSD01MT3R0505□C07YF	3.0	5	K,M,V	80	200	20	2.5	3.75
CSD01MT3R0505□C25YF	3.0	5	K,M,V	80	200	20	2.5	3.75
CSD01MT3R0705□C07YF	3.0	7	K,M,V	60	180	25	2.5	4.65
CSD01MT3R0805□C09YF	3.0	8	K,M,V	50	180	30	2.5	4.92
CSD01MT3R0106□C09YF	3.0	10	K,M,V	60	180	30	2.5	5.36
CSD01MT3R0106□C10YF	3.0	10	K,M,V	45	120	40	2.5	6.82
CSD01MT3R0106□C19YF	3.0	10	K,M,V	45	120	40	2.5	6.82

1:The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

CAPACITANCE AND RATED VOLTAGE RANGE

Part NO.	Rated Voltage(V)	Capacitance (F)	Capacitance Tolerance	Max ESR (mΩ) AC(at 1kHz)	Max ESR (mΩ) DC	Leakage Current Max. (μA,72hr)	Voltage Holding Characteristics Min. (V,24hr)	Maximum Peak Current ¹ (A)
CSD01HT2R7504□C03YF	2.7	0.5	M,N,V	400	1000	5	2.2	0.45
CSD01HT2R7704□C03YF	2.7	0.7	M,N,V	250	800	5	2.2	0.61
CSD01HT2R7504□C04YF	2.7	0.5	M,N,V	400	1000	5	2.2	0.45
CSD01HT2R7105□C03YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01HT2R7105□C04YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01HT2R7105□C45YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01HT2R7205□C04YF	2.7	2	K,M,V	160	600	8	2.3	1.23
CSD01HT2R7305□C05YF	2.7	3	K,M,V	80	220	12	2.4	1.23
CSD01HT2R7335□C06YF	2.7	3.3	K,M,V	80	220	12	2.4	1.23
CSD01HT2R7505□C07YF	2.7	5	K,M,V	60	160	15	2.4	1.23
CSD01HT2R7505□C25YF	2.7	5	K,M,V	70	200	15	2.4	3.38
CSD01HT2R7705□C07YF	2.7	7	K,M,V	50	120	25	2.4	5.14
CSD01HT2R7805□C09YF	2.7	8	K,M,V	40	120	25	2.4	5.51
CSD01HT2R7106□C09YF	2.7	10	K,M,V	50	120	30	2.4	6.14
CSD01HT2R7106□C10YF	2.7	10	K,M,V	40	75	40	2.4	7.71
CSD01HT2R7106□C21YF	2.7	10	K,M,V	50	120	30	2.4	6.14
CSD01HT2R7106□C19YF	2.7	10	K,M,V	40	75	40	2.4	7.71
CSD01LT2R7254□C02YF	2.7	0.25	M,N,V	500	2500	5	2.1	0.21
CSD01LT2R7504□C03YF	2.7	0.5	M,N,V	300	1000	5	2.2	0.39
CSD01LT2R7704□C03YF	2.7	0.7	M,N,V	250	800	5	2.2	0.61
CSD01LT2R7504□C04YF	2.7	0.5	M,N,V	300	1000	5	2.2	0.39
CSD01LT2R7105□C03YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01LT2R7105□C04YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01LT2R7105□C45YF	2.7	1	M,N,V	200	600	6	2.3	0.84
CSD01LT2R7205□C04YF	2.7	2	K,M,V	160	600	8	2.3	1.23
CSD01LT2R7305□C05YF	2.7	3	K,M,V	80	220	12	2.4	2.13
CSD01LT2R7335□C06YF	2.7	3.3	K,M,V	80	220	12	2.4	2.24
CSD01LT2R7505□C07YF	2.7	5	K,M,V	60	160	15	2.4	3.38
CSD01LT2R7505□C25YF	2.7	5	K,M,V	80	260	15	2.4	3.21
CSD01LT2R7705□C07YF	2.7	7	K,M,V	50	120	25	2.4	4.18
CSD01LT2R7805□C09YF	2.7	8	K,M,V	40	120	25	2.4	4.43
CSD01LT2R7106□C09YF	2.7	10	K,M,V	50	120	30	2.4	6.14
CSD01LT2R7106□C10YF	2.7	10	K,M,V	40	75	40	2.4	7.71
CSD01LT2R7106□C21YF	2.7	10	K,M,V	50	120	30	2.4	6.14
CSD01LT2R7106□C19YF	2.7	10	K,M,V	40	75	4	2.4	7.71

1:The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

FEATURES

Rated voltage:2.7V 3.0V
Capacitance:100F~900F
Low ESR for high power density
Suitable for quick charge and discharge
Accept customization



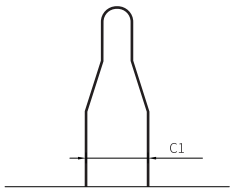
APPLICATIONS

Typical applications include hybrid battery packs, UPS & telecom systems, hold up power, high pulse current applications.

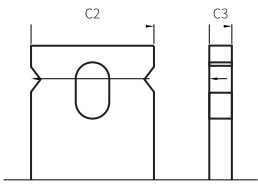
ORDERING INFORMATION

CSD02	MT	2R7	457	K	M08	W	T
Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Wire Form	Packaging
CSD02	LT:-55°C~+65°C MT:-40°C~+65°C	2R7:2.7V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	K=±10% M=±20%	Refer to dimensions	Form S Form L Form W Form T	T=Bulk

DIMENSIONS

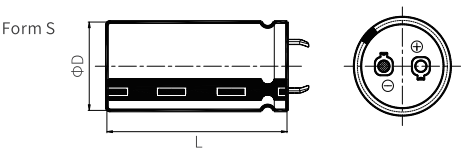


Pin type

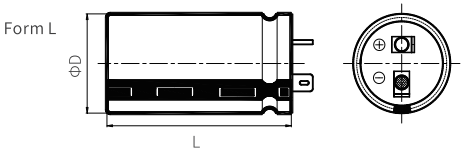


Chip type

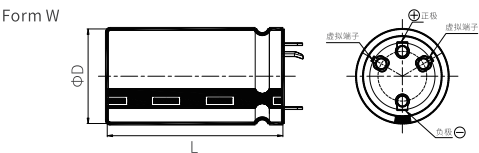
Pin Type Size Code	Chip Size Code		
Form S/L:C1	Form W:C2	Form L:C2	C3
1.60±0.10	5.20±0.20	7.50±0.50	1.00±0.10



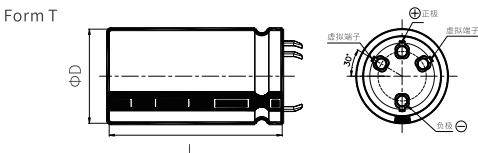
Two-pin CSD02 type capacitor/S



Two-tab CSD02 type capacitor/L



Two-pin, two-tab CSD02 type capacitor/W



Four-pin CSD02 type capacitor/T

Size Code	Case size(mm)		Weight(g)
	D	L	
M01	22.0±1.5	45.0±2.0	21.5±2.0
M02	22.0±1.5	50.0±2.0	23.0±2.0
M12	22.0±1.5	56.0±2.0	32.0±2.0
M03	25.0±1.5	50.0±2.0	30.0±2.0
M04	30.0±1.5	52.0±2.0	49.0±3.0
M05	30.0±1.5	50.0±2.0	38.0±4.0
M11	30.0±1.5	60.0±2.0	70.0±3.0
M06	35.0±1.5	62.0±2.0	76.0±5.0
M07	35.0±1.5	66.0±2.0	85.0±5.0
M08	35.0±1.5	68.0±2.0	85.0±5.0
M09	35.0±1.5	71.0±2.0	90.0±5.0
M10	35.0±1.5	78.0±2.0	96.0±6.0
M13	35.0±1.5	105.0±2.0	136.0±10.0
M14	35.0±1.5	52.0±2.0	66.0±5.0

CAPACITANCE AND RATED VOLTAGE RANGE

Part NO.	Rated Voltage(V)	Capacitance (F)	Capacitance Tolerance	Dielectric	Terminal Form	Max ESR (mΩ) AC (at 1kHz)	Max ESR (mΩ) DC	Leakage Current Max. (μA, 72hr)	Voltage holding Characteristics Min.(V, 24hr)	Maximum Peak Current ¹ (A)
CSD02MT2R7107MM01□T	2.7	100	M	MT	S,L	8.0	12.0	0.26	2.4	61.36
CSD02MT2R7127MM01□T	2.7	120	M	MT	S,L	8.0	12.0	0.31	2.4	66.39
CSD02MT2R7157MM03□T	2.7	150	M	MT	S,L	7.0	11.0	0.39	2.4	76.42
CSD02MT2R7167MM12□T	2.7	160	M	MT	S,L	8.0	12.0	0.42	2.4	73.97
CSD02MT2R7207MM05□T	2.7	200	M	MT	S,L	6.0	10	0.52	2.4	90.00
CSD02MT2R7227MM05□T	2.7	220	M	MT	S,L	6.0	10	0.52	2.4	92.81
CSD02MT2R7247MM05□T	2.7	240	M	MT	S,L	5.0	9.0	0.60	2.4	102.5
CSD02MT2R7307MM04□T	2.7	300	M	MT	S,L	8.0	15	0.80	2.4	73.64
CSD02MT2R7367MM06□T	2.7	360	M	MT	L,T	3.0	3.5	0.94	2.4	215.0
CSD02MT2R7407MM06□T	2.7	400	M	MT	L	3.0	3.5	1.00	2.4	225.0
CSD02MT2R7477MM06□T	2.7	470	M	MT	L	3.0	3.5	1.10	2.4	239.9
CSD02MT2R7457MM08□T	2.7	450	M	MT	L,W	3.0	3.5	1.10	2.4	235.9
CSD02MT2R7507MM08□T	2.7	500	M	MT	L	3.0	3.5	1.20	2.4	245.5
CSD02MT2R7607MM09□T	2.7	600	M	MT	L	2.7	3.5	1.40	2.4	261.3
CSD02MT2R7907MM13□T	2.7	900	M	MT	L	2.0	2.5	2.50	2.4	373.9
CSD02MT3R0107MM01□T	3.0	100	M	MT	S,L	8.0	12.0	0.26	2.5	68.18
CSD02MT3R0127MM01□T	3.0	120	M	MT	S,L	8.0	12.0	0.31	2.5	73.77
CSD02MT3R0157MM03□T	3.0	150	M	MT	S,L	7.0	11.0	0.39	2.5	84.91
CSD02MT3R0167MM12□T	3.0	160	M	MT	S,L	8.0	12.0	0.42	2.5	82.19
CSD02MT3R0207MM05□T	3.0	200	M	MT	S,L	6.0	10.0	0.52	2.5	100.0
CSD02MT3R0227MM05□T	3.0	220	M	MT	S,L	7.0	11.0	0.60	2.5	96.49
CSD02MT3R0247MM05□T	3.0	240	M	MT	S,L	7.0	11.0	0.68	2.5	98.90
CSD02MT3R0367MM06□T	3.0	360	M	MT	L	3.1	3.6	1.00	2.5	235.2
CSD02MT3R0407MM06□T	3.0	400	M	MT	L	3.1	3.6	1.10	2.5	245.9
CSD02MT3R0477MM06□T	3.0	470	M	MT	L	3.1	3.6	1.20	2.5	261.9
CSD02MT3R0507MM08□T	3.0	500	M	MT	L	3.0	3.5	1.30	2.5	272.7
CSD02MT3R0607MM09□T	3.0	600	M	MT	L	2.7	3.5	1.50	2.5	290.3

1: The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

FEATURES

Rated voltage:2.7V 3.0V
 Capacitance:650F~3000F
 Low ESR for high power density
 Long cycle life
 Suitable for quick charge and discharge
 Accept customization



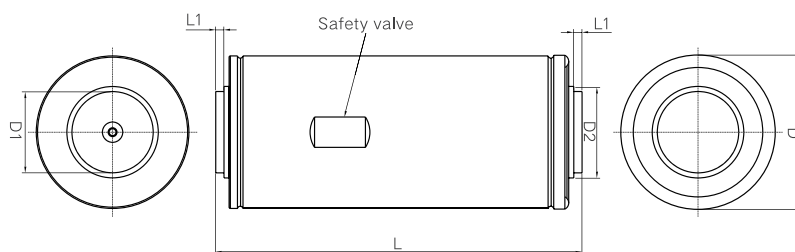
APPLICATIONS

Typical applications include wind turbine pitch control, energy regeneration and motor start in escalators, hybrid vehicles, rail, UPS & telecom systems.

ORDERING INFORMATION

CSD03	MT	2R7	308	K	C54	X	E
Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Wire Form	Packaging
CSD03	LT:-55°C~+65°C MT:-40°C~+65°C	2R7:2.7V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	K=±10% M=±20%	Refer to dimensions	Pole lead out (Aluminum)	Palletizing

DIMENSIONS



Unit:mm

Size Code	L	L1	L2	D	D1	D2	Weight(g)
C50	57.5±0.5	3.0±0.05	47.5±0.5	60.0±0.7	32.0±0.5	36.0±0.5	190±5
C51	80.0±0.5	3.0±0.05	70.0±0.5	60.0±0.7	32.0±0.5	36.0±0.5	260±5
C52	91.0±0.5	3.0±0.05	81.0±0.5	60.0±0.7	32.0±0.5	36.0±0.5	300±5
C53	108.0±0.5	3.0±0.05	98.0±0.5	60.0±0.7	32.0±0.5	36.0±0.5	370±10
C54	144.0±1.0	3.0±0.05	134.0±0.5	60.0±0.7	32.0±0.5	36.0±0.5	510±10

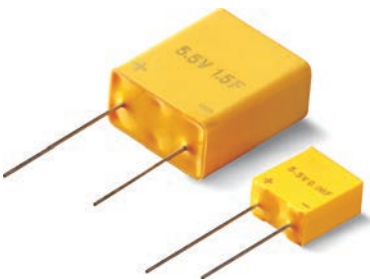
CAPACITANCE AND RATED VOLTAGE RANGE

Part NO.	Rated Voltage(V)	Capacitance (F)	Storage Energy (Wh)	Capacitance Tolerance	Dielectric	Max ESR (mΩ) DC	Max Mass Power Density (KW/Kg)	Maximum Peak Current ¹ (A)
CSD03□□2R7657□C50XE	2.7	650	0.658	K,M	MT,LT	0.78	12.30	582.3
CSD03□□2R7128□C51XE	2.7	1200	1.215	K,M	MT,LT	0.55	12.74	975.9
CSD03□□2R7158□C52XE	2.7	1500	1.518	K,M	MT,LT	0.45	13.50	1209
CSD03□□2R7208□C53XE	2.7	2000	2.025	K,M	MT,LT	0.32	15.39	1646
CSD03□□2R7308□C54XE	2.7	3000	3.037	K,M	MT,LT	0.25	14.29	2314
CSD03MT3R0657□C50XE	3.0	650	0.813	K,M	MT	0.78	15.18	647.0
CSD03MT3R0128□C51XE	3.0	1200	1.500	K,M	MT	0.55	15.73	1084
CSD03MT3R0158□C52XE	3.0	1500	1.875	K,M	MT	0.45	16.67	1343
CSD03MT3R0208□C53XE	3.0	2000	2.500	K,M	MT	0.32	19.00	1829
CSD03MT3R0308□C54XE	3.0	3000	3.750	K,M	MT	0.25	17.65	2571

1:The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

FEATURES

Operating temperature: -40°C~70°C
Store more energy
Low ESR for high power density
Long cycle life
Accept customization



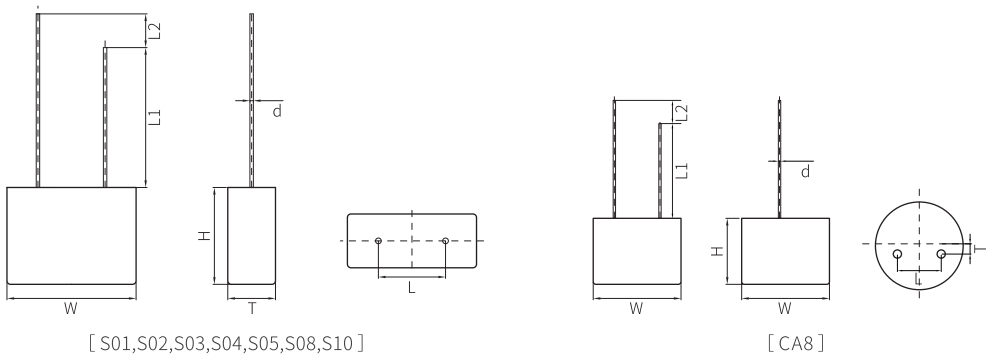
APPLICATIONS

Used as pulse power output power supply, starting power supply, emergency backup power supply and UTC power supply.

ORDERING INFORMATION

CSM01	RP	5R5	104	M	S02	Y	F
Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Wire Form	Packaging
CSM01	RP (Resin package) SC (Special customized)	5R5:5.5V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	K=±10% M=±20% N=±30% Q=-20%~50% V=-20%~80%	Refer to dimensions	C: Socket and plug type lead out X: Bolt type lead out Y: Welding pin lead out Z: Terminal post lead out W: Wire type lead out	F=Waffle T=Bulk

DIMENSIONS



Size Code	Case Size(mm)						
	L	L1	L2	W	H	T	d
S01	7.5±0.5	≥15	≥4	12.0±0.5	13.5±0.5	6.6±0.5	0.5±0.1
S02	7.0±0.5	≥15	≥4	13.0±0.5	12.5±0.5	6.3±0.5	0.4±0.1
S04	12.0±0.5	≥15	≥4	18.5±0.5	16.5±0.5	10.0±0.5	0.6±0.1
S05	12.0±0.5	≥15	≥4	18.5±0.5	21.0±0.5	10.0±0.5	0.6±0.1
S08	36.9±0.5	≥15	≥4	46.3±0.5	17.4±0.5	10.3±0.5	0.6±0.1
S10	15.5±0.5	≥15	≥4	22.8±0.5	25.0±0.5	12.4±0.5	0.6±0.1
CA8	5.0±0.5	≥15	≥4	12.0±0.5	9.3±0.5	0.6±0.5	0.4±0.1

ELECTRICAL CHARACTERISTICS

Part NO.	Rated Voltage	Capacitance (F)	Max ESR(mΩ) AC(at 1kHz)	Max ESR(mΩ) DC	Voltage Holding Characteristics Min. (V,24hr)	Maximum Peak Current ¹ (A)
CSM01RP5R5473□S02YF	5.5	0.047	M,Q,V	11000	4.2	0.086
CSM01SC5R5473□CA8YF	5.5	0.047	M,Q,V	20000	4.2	0.10
CSM01RP5R5104□S01YF	5.5	0.1	M,Q,V	4000	4.0	0.20
CSM01RP5R5104□S02YF	5.5	0.1	M,Q,V	3800	4.2	0.20
CSM01RP5R5504□S04YF	5.5	0.5	M,Q,V	1500	4.5	0.78
CSM01RP5R5105□S04YF	5.5	1.0	K,M,Q	800	4.5	1.53
CSM01RP5R5155□S05YF	5.5	1.5	K,M	600	4.6	2.44
CSM01RP5R5255□S10YF	5.5	2.5	K,M,Q	270	4.7	4.10
CSM01RP5R5355□S10YF	5.5	3.5	K,M,Q	200	4.7	5.67
CSM01SC8R1333□CA8YF	8.1	0.033	M,Q,V	22000	6.3	0.077
CSM01RP8R1333□CA8YF	8.1	0.033	M,Q,V	15000	6.3	0.077
CSM01SC8R1473□CA8YF	8.1	0.047	M,Q,V	20000	6.3	0.10
CSM01RP8R1473□CA8YF	8.1	0.047	M,Q,V	6000	6.3	0.17
CSM01RP8R1603□CA8YF	8.1	0.06	M,Q,V	6000	6.3	0.18
CSM01RP13R204□S08YF	13.5	0.2	M,Q,V	1000	11.5	1.35

1:The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

FEATURES

Operating temperature:-40℃~70℃
Store more energy
Low ESR for high power density
Long cycle life
Accept customization

APPLICATIONS

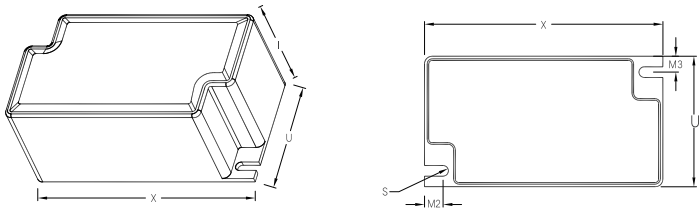
Equipment starting power supply, explosive power supply, instantaneous large current output power supply, intelligent equipment backup power supply, emergency power supply, power supply for emergency storage of power failure data.



ORDERING INFORMATION

CSM01	GP	48R	164	M	ST1	W	T
Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Wire Form	Packaging
CSM01	GP (General product)	48R:4.8V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	K=±10% M=±20% N=±30% Q=-20%~50% V=-20%~80%	Refer to dimensions	C: Socket and plug type lead out X: Bolt type lead out Y: Welding pin lead out Z: Terminal post lead out W: Wire type lead out	F=Waffle T=Bulk

DIMENSIONS



Size Code	Case Size(mm)					
	W	T	H	L1	L2	R
ST1	70.2±0.5	36.8±0.5	27±0.5	5.5±0.5	3.8±0.5	2.0±0.2
ST2	84.5±0.5	43.9±0.5	36±0.5	7.5±0.5	6.0±0.5	2.0±0.2
ST3	92.8±0.5	52.2±0.5	42±0.5	7.5±0.5	6.0±0.5	2.0±0.2
ST4	100.8±0.5	58.7±0.5	52±0.5	10.5±0.5	6.0±0.5	2.0±0.2
ST5	100.8±0.5	58.7±0.5	72±0.5	10.5±0.5	6.0±0.5	2.0±0.2

ELECTRICAL CHARACTERISTICS

Part NO.	Rated Voltage (V)	Capacitance (F)	Capacitance Tolerance	Max ESR(mΩ) DC	Voltage Holding Characteristics Min. (V,24hr)	Maximum Peak Current ¹ (A)
CSM01GP13R605□ST3WT	13.5	6	K,M,Q	200	11.5	18.4
CSM01GP13R126□ST4WT	13.5	12	K,M,Q	90	11.5	38.5
CSM01GP13R206□ST5WT	13.5	20	K,M,Q	75	11.5	54
CSM01GP16R505□ST3WT	16	5	K,M,Q	240	13.8	18.4
CSM01GP16R106□ST4WT	16	10	K,M,Q	108	13.8	38.5
CSM01GP16R166□ST5WT	16	16.7	K,M,Q	90	13.8	54
CSM01GP24R335□ST3WT	24	3.3	K,M,Q	360	20.7	18.4
CSM01GP24R665□ST4WT	24	6.6	K,M,Q	162	20.7	38.5
CSM01GP24R116□ST5WT	24	11	K,M,Q	135	20.7	54
CSM01GP32R255□ST3WT	32	2.5	K,M,Q	480	27.6	18.4
CSM01GP32R505□ST4WT	32	5.0	K,M,Q	216	27.6	38.5
CSM01GP32R835□ST5WT	32	8.3	K,M,Q	180	27.6	54
CSM01GP48R164□ST1WT	48	0.16	K,M,Q	3960	40.5	2.44
CSM01GP48R444□ST2WT	48	0.44	K,M,Q	1800	41.4	6.0
CSM01GP51R164□ST1WT	51	0.16	K,M,Q	4180	43.4	2.44
CSM01GP51R424□ST2WT	51	0.42	K,M,Q	1900	43.4	6.0
CSM01GP65R124□ST1WT	65	0.12	K,M,Q	5280	54.0	2.44
CSM01GP65R334□ST2WT	65	0.33	K,M,Q	2400	55.2	6.0

a: The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

FEATURES

Operating temperature:-40℃~65℃
Large capacitance for high energy density
Internal with high reliable single voltage monitoring chip
High efficiency single overvoltage protection circuit
Accept customization



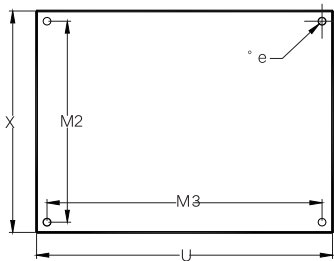
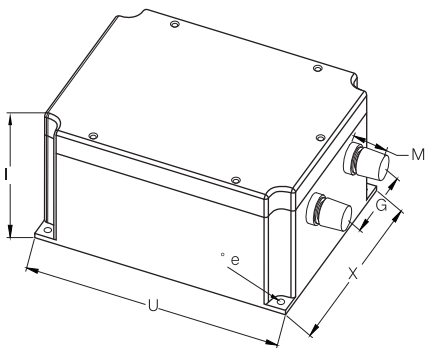
APPLICATIONS

Typical applications include hybrid battery packs,UPS& telecom systems, hold up power, high pulse current applications.

ORDERING INFORMATION

CSM02	GP	32R	386	M	SK1	Z	T
Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Wire Form	Packaging
CSM02	GP (General product)	32R:32V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	K=±10% M=±20% N=±30% Q=-20%~50% V=-20%~80%	Refer to dimensions	C:Socket and plug X:Stud type Y:Solder pin Z:Terminal post W:Flying lead	T=Bulk

DIMENSIONS



Type GP

Size Code	Case Size(mm)							
	W	T	H	F	L	L1	L2	d
SK1	130.0±3.0	170.0±3.0	80.0±3.0	53.0±1.0	23.0±3.0	118.0±2.0	158.0±2.0	5.0±0.3
SK2	130.0±3.0	170.0±3.0	91.0±3.0	53.0±1.0	23.0±3.0	118.0±2.0	158.0±2.0	5.0±0.3

ELECTRICAL CHARACTERISTICS

Part NO.	Rated Voltage (V)	Capacitance (F)	Capacitance Tolerance	Max ESR(mΩ) DC	Voltage Holding Characteristics Min. (V,24hr)	Maximum Peak Current ¹ (A)
CSM02GP24R506□SK1ZT	24	50	K,M	24.3	20.7	274
CSM02GP24R666□SK2ZT	24	66	K,M	22.5	20.7	324
CSM02GP32R386□SK1ZT	32	38	K,M	32.4	27.6	274
CSM02GP32R506□SK2ZT	32	50	K,M	30.0	27.6	324

a:The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

FEATURES

Working temperature range: -40 °C~+65 °C;
 The monomers formed have undergone strict screening, resulting in more stable performance;
 Internally equipped with efficient single unit overvoltage monitoring and protection circuit
 Equipped with overvoltage and overtemperature alarm signal output function;
 An inter module circuit balancer can be added to ensure voltage balance between modules;
 Add CAN communication function as needed.
 The structure is sealed and has certain waterproof and splash proof capabilities;
 Aluminum alloy shell, high thermal conductivity, optimal structural design;
 It has a pressure relief channel for the shell to enhance safety;
 This series of products can accept customization of size, working temperature, etc.



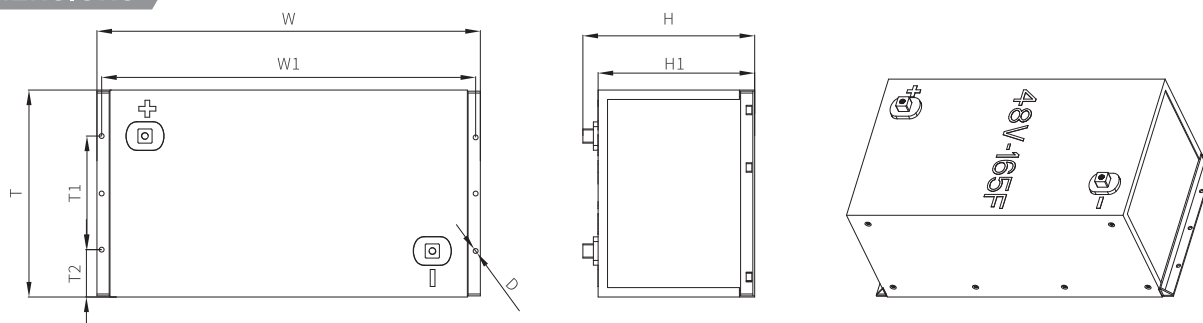
APPLICATIONS

It is commonly used for peak shifting and valley filling in wind and solar power generation, energy-saving elevators, smart grids, transportation, and rail power systems, or for high current charging and discharging, power-off delay, power compensation, low-temperature starting, etc. in military weapon equipment circuits with reliability requirements.

ORDERING INFORMATION

CSM03	GP	48R	167	M	BK9	Z	T
Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Wire Form	Packaging
CSM03	GP (General product) SC (Special customized)	48R:48V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	M=±20% N=±30% Q=-20%~50% V=-20%~80%	Refer to dimensions	C:Socket and plug X:Stud type Y:Solder pin Z:Terminal post W:Flying lead	T=Bulk

DIMENSIONS



Size Code	16V500F Case Size(mm)									
	W	T	H	H1	W1	T1	T2	D	Positive	Negative
BK9	407.0±1.0	220.0±1.0	166.0±1.0	183.0±1.0	397.0±1.0	120.0±1.0	50.0±1.0	5.2±0.2	M8	M10

ELECTRICAL CHARACTERISTICS

Part NO.	Rated Voltage (V)	Capacitance (F)	Capacitance Tolerance	Max ESR(mΩ) DC	Voltage Holding Characteristics Min. (V,24hr)	Maximum Peak Current ¹ (A)
CSM03GP48R167MBK9XT—M	48	165	M	9	43.2	1600

1:The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

FEATURES

Working temperature range: -40°C~+65°C;
 The monomers formed have undergone strict screening, resulting in more stable performance;
 Equal pressure protection extends the service life;
 Sealed structure with certain waterproof and splash proof capabilities;
 Metal casing, high thermal conductivity, optimal structural design;
 This series of products can accept customization of size, working temperature, etc.



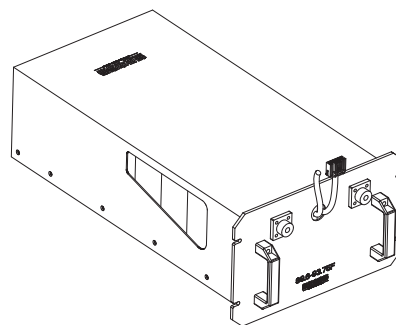
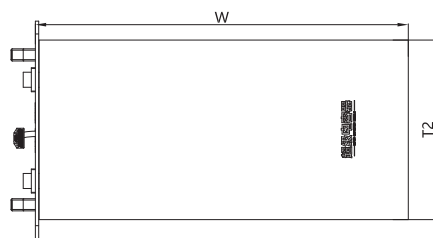
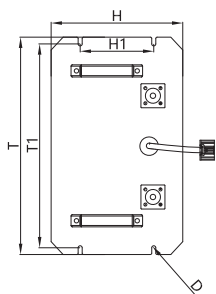
APPLICATIONS

It is commonly used for peak shifting and valley filling in wind and solar power generation, energy-saving elevators, smart grids, transportation, and rail power systems, or for high current charging and discharging, power-off delay, power compensation, low-temperature starting, etc. in military weapon equipment circuits with reliability requirements.

ORDERING INFORMATION

CSM	□□	SC	89R	936	M	K16	Z	T
Series	Series	Temperature Characteristics	Rated Voltage	Capacitance(μF)	Capacitance Tolerance	Size Code	Wire Form	Packaging
CSM	01: Lead type supercapacitor 02: Solder pin&solder pad type supercapacitor 03: Pole type supercapacitor	SC (Specialcustomized)	89R:89V	First two digits represent significant figures.Third digit specifies number of zeros. Example: 305=3000000μF=3.0F	M=±20% N=±30% Q=-20%~50% V=-20%~80%	Refer to dimensions	C:Socket and plug X:Stud type Y:Solder pin Z:Terminal post W:Flying lead	T=Bulk

DIMENSIONS



Size Code	Case Size(mm)						
	W	T	T1	T2	H	H1	D
K16	553.0±2.0	322.0±2.0	302.0±0.5	266.0±0.5	195.0±2.0	109.0±0.5	6.0±0.2

ELECTRICAL CHARACTERISTICS

Part NO.	Rated Voltage (V)	Capacitance (F)	Capacitance Tolerance	Max ESR(mΩ) DC	Voltage Holding Characteristics Min. (V,24hr)	Maximum Peak Current ¹ (A)
CSM03SC89R936MK16ZT-M	89	93	M	8	76.2	2168

1:The theoretical value of 1s discharge to half voltage is taken as the maximum instantaneous peak current allowed at room temperature.

ENERGY STORAGE PRINCIPLE

Electric Double-Layer Capacitor (EDLC), also referred to as supercapacitor, is an electrochemical energy-storage device operating on the principle of the electric double-layer phenomenon. As illustrated in Figure 1, during the charging process, ions within the electrolyte are adsorbed onto the surfaces of the electrodes, leading to charge separation. Specifically, the positive electrode adsorbs anions, while the negative electrode adsorbs cations, thereby establishing two charge layers(the "electric double layer"),hich facilitate the storage of electrical energy.

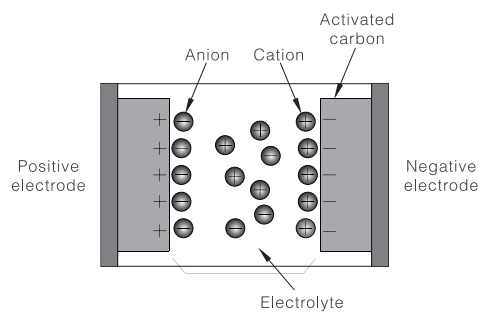


Figure 1. Schematic Diagram of EDLC in Charging State

CHARACTERISTICS

As an energy storage component, EDLCs have the following characteristics compared with batteries.

Characteristics	EDLC	Battery
Energy density	Lower	Higher
Power density	Significantly higher	Lower
Charge/discharge rate	Extremely fast(millisecond scale to minute)	Slower(minute to hour)
Cycle life	Long(Over 500,000 cycles)	Shorter(hundreds to thousands of cycles)
Operating temperature	Wide(-55 ~+85)	Narrow(-20 ~+60)
Safety	Significantly higher	Moderate

2.1 High and Low Temperature Characteristics

Test the change rate of capacitance and ESR at each temperature point of the same product within the range of upper and lower limits of operating temperature.

2.2 1000h High Temperature Load

During the process of applying a constant voltage of 2.7V to the product for 1000 hours at an ambient temperature of 70°C, test the change rate of product capacitance and ESR.

PRECAUTIONS

Positive and Negative Polarity

Supercapacitors manufactured have fixed polarity. Reversing the polarity of a supercapacitor will accelerate the failure of the supercapacitor's electrolyte and electrode materials, resulting in adverse effects such as capacity reduction and internal resistance increase. Therefore, when using a supercapacitor, please follow the polarity markings on the product for assembly and use.

Application Guidance for Super capacitor

Operating Voltage and Ambient Temperature

Use should be strictly in accordance with the requirements of the capacitor's rated operating voltage and operating temperature range to avoid accelerated degradation of the capacitor's performance due to overvoltage or overtemperature use.

Avoid direct contact with water/salt water/oil/acid or alkali

Since the electrolyte used in our company's supercapacitors is highly volatile, please do not disassemble the supercapacitors.

INSTALLATION METHODS

4.1 Welding methods for lead - type / pin - type / tab - type supercapacitors

(a) Manual welding: When manually welding, maintain the distance between the supercapacitor and the soldering iron tip, and the tip shall not touch any other part of the capacitor except the lead. Contact between parts of the lead - type supercapacitor (other than the lead) and the soldering iron can cause extensive damage to the capacitor and alter its electrical performance. It is recommended that the manual welding temperature be below 350°C, and the contact time should be limited to within 4s. Avoid excessive exposure of the capacitor leads to terminal heat during welding, which can transfer heat to the capacitor and potentially damage its electrical performance.

(b) Wave soldering / selective wave soldering: When using wave soldering or selective wave soldering for lead - type supercapacitors, the PCB board should be preheated only from the bottom, and the preheating time should be less than 60s. If the thickness of the PCB board is equal to or greater than 0.8mm, its preheating temperature should be set at 100°C or below. The soldering temperatures and times for wave soldering and selective wave soldering are shown in Table 1 and Table 2.

Table 1 Soldering Temperature and Time for Wave Soldering

Wave Soldering		
Soldering Temperature (°C)	Recommended Soldering Time (s)	Maximum Soldering Time (s)
220	7	9
240	7	9
250	5	7
260	3	5

Table 2 Soldering Temperature and Time for Selective Wave Soldering

Selective Wave Soldering		
Soldering Temperature (°C)	Recommended Soldering Time (s)	Maximum Soldering Time (s)
290	2	4

4.2 Welding method for post - type supercapacitors

All assembly connections of post - type monomers are achieved through busbars, and the forms of busbars include wires or metal connecting pieces of various specifications. In application design, it is necessary to select the appropriate size of wire diameter and thickness of metal connecting pieces according to the current range used. Busbar material selection needs to be considered in combination with the application environment to avoid galvanic corrosion, oxidation during use, and the application not meeting design requirements due to excessive resistance of the material itself.

According to the design of post - type monomers, the fixing method usually adopts laser welding of the busbar and post terminals. For specific welding process requirements, please consult our company's professional technical personnel.