

ZM 系列
SERIES

■ 特征 Features

低漏电、长寿命 Low leakage current, long life
高能量、大功率 High power, high energy density
可定制模组系统产品 Customized module system

应用 Application

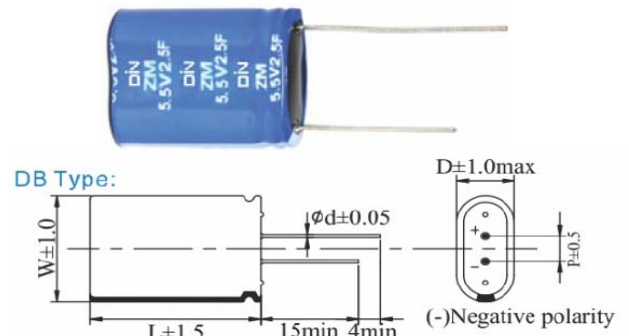
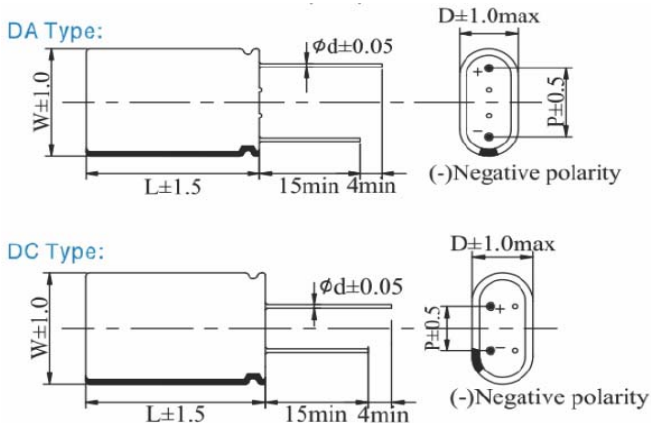
智能四表 Smart meter
风电储能 Wind power
电动汽车 Electric vehicle

■ 技术参数 Technical Specifications

项目 Items	性能要求 Characteristics
工作电压 Working Voltage	定制 Customized
容量范围 Nominal Cap. Range	定制 Customized
容量偏差 Capacitance Tolerance	-20%~+50%
工作温度 Operating Temperature	-40℃~+65℃

■ 热缩型 2 串模组 (5.5V)

2 series module with PET heat shrink tube



ΦD	W	P(mm)			Φd
		DA	DB	DC	
8	16	11.5	4.5	8.0	0.6
10	20	15.5	5.0	10.0	0.6
12.5	25	18.0	7.5	13.0	0.6

■ 标准品一览表 Standard size

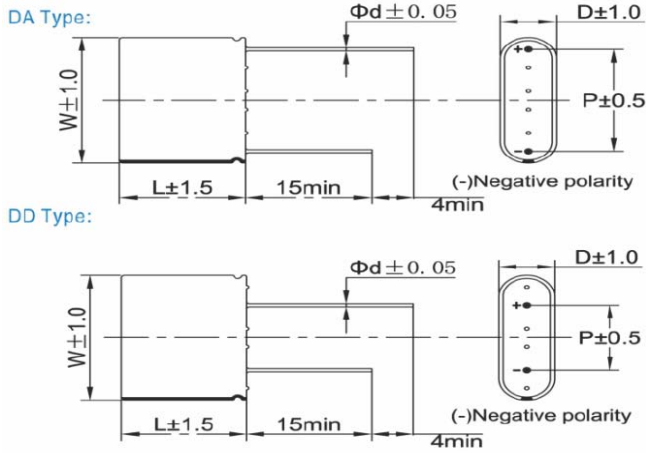
额定电压 Rated Voltage	静电容量 Cap(F)	尺寸 Dimensions (mm)			最大等值阻抗 Max. ESR		最大续航电流 Maximum Endurance Current (A)	最大峰值电流 Maximum Peak Current (A)	最大漏电流 Maximum Peak Current (A)	功率密度 Power Density (W/kg)	最大能量 Maximum Energy (W.h)	能量密度 Energy Density (Wh/kg)	编号 Part No.
		W	D	L	ESR _{AC} (1kHz /mΩ)	ESR _{DC} (mΩ)							
5.5V.DC	0.47	16	8	14	300	600	0.38	0.99	0.002	3184	0.0020	1.0	ZM474S05R5DAA0
									0.006				ZM474S05R5DAB0
	1	16	8	18	250	500	0.49	1.73	0.006	3086	0.0042	1.8	ZM105S05R5DAA0
									0.010				ZM105S05R5DAB0
	1.5	16	8	22	200	400	0.56	2.40	0.010	3479	0.0063	2.4	ZM155S05R5DAA0
									0.015				ZM155S05R5DAB0
	2.5	20	10	22	180	360	0.79	3.65	0.020	2396	0.0105	2.5	ZM255S05R5DAA0
									0.025				ZM255S05R5DAB0
	3.5	20	10	27	160	320	0.93	4.61	0.023	2063	0.0147	2.7	ZM355S05R5DAA0
									0.028				ZM355S05R5DAB0
	5	25	12.5	22	120	200	1.35	7.71	0.025	2606	0.0210	3.0	ZM505S05R5DAA0
									0.030				ZM505S05R5DAB0
	7.5	25	12.5	32	100	160	1.80	10.66	0.065	2396	0.0315	3.3	ZM755S05R5DAA0
									0.070				ZM755S05R5DAB0
12.5	32	16	28	70	120	2.09	15.00	0.090	1952	0.0525	3.4	ZM125S05R5DAA0	
								0.095				ZM126S05R5DAB0	

◇ 备注：特殊需要可根据客户要求另行设计

◇ Note: Special requirements can be designed according to customer requirements.

■ 热缩型 3 串模组 (7.5V)

3 series module with PET heat shrink tube



ΦD	W	P(mm)		Φd
		DA	DB	
8	24	20.5	13.5	0.6

■ 标准品一览表 Standard size

额定电压 Rated Voltage	静电 容量 Cap(F)	尺寸 Dimensions (mm)			最大等值阻抗 Max.ESR		最大续 航电流 Maximum Endurance Current (A)	最大峰 值电流 Maximum Peak Current (A)	最大 漏电流 Maximum Peak Current (A)	功率 密度 Power Density (W/kg)	最大 能量 Maximum Energy (W.h)	能量 密度 Energy Density (Wh/kg)	编号 Part No.
		W	D	L	ESR _{AC} (1kHz /mΩ)	ESR _{DC} (mΩ)							
7.5V.DC	0.33	24	8	14	500	100	0.38	0.99	0.002	2455	0.0026	0.9	ZM334S07R5DAA0
									0.006				ZM334S07R5DAB0
	0.60	24	8	18	400	800	0.49	1.73	0.006	2446	0.0047	1.4	ZM604S07R5DAA0
									0.010				ZM604S07R5DAB0
	1.0	24	8	22	350	700	0.56	2.40	0.010	2505	0.0078	2.0	ZM105S07R5DAA0
									0.015				ZM105S07R5DAB0

◇ 备注：特殊需要可根据客户要求另行设

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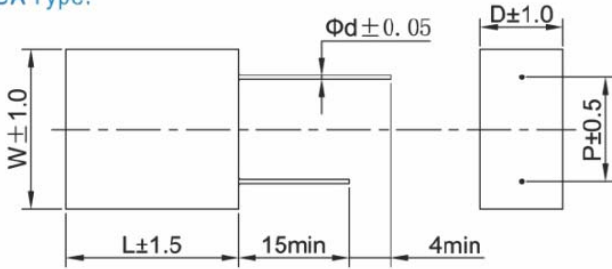
■ 应用实例 Application



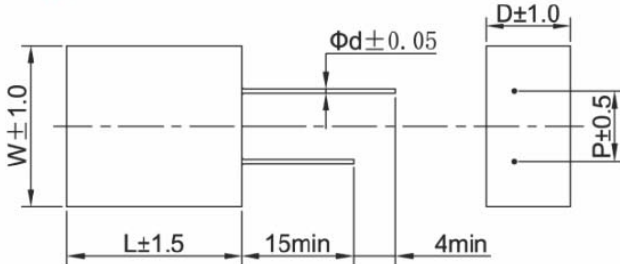
■ 灌胶型 2 串模组 (2.5V)

2 series module with plastic shell filled epoxy

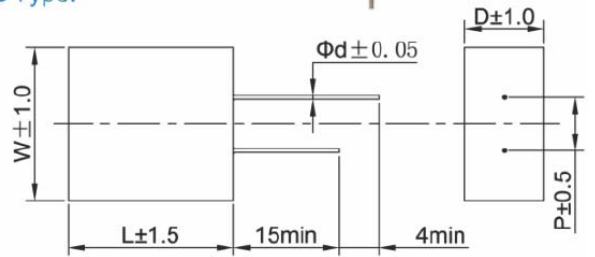
DA Type:



DC Type:



DB Type:



ΦD	W	P(mm)			Φd
		DA	DB	DC	
9	18	11.5	4.5	8.0	0.6
11	23	15.5	5.0	10.0	0.6

■ 标准品一览表 Standard size

额定电压 Rated Voltage	静电容量 Cap(F)	尺寸 Dimensions (mm)			最大等值阻抗 Max.ESR		最大续航电流 Maximum Endurance Current (A)	最大峰值电流 Maximum Peak Current (A)	最大漏电流 Maximum Peak Current (A)	功率密度 Power Density (W/kg)	最大能量 Maximum Energy (W.h)	能量密度 Energy Density (Wh/kg)	编号 Part No.
		W	D	L	ESR _{AC} (1kHz/mΩ)	ESR _{DC} (mΩ)							
5.5V.DC	0.47	18	9	16	300	600	0.38	0.99	0.002	1065	0.0020	0.3	ZM474S05R5DAA0*
									0.006				ZM474S05R5DAB0*
	1.0	18	9	20	250	500	0.49	1.73	0.006	1183	0.0042	0.7	ZM105S05R5DAA0*
									0.010				ZM105S05R5DAB0*
	1.5	18	9	24	200	400	0.56	2.40	0.010	1402	0.0063	1.0	ZM155S05R5DAA0*
									0.015				ZM155S05R5DAB0*
	2.5	23	11	25	180	360	0.79	3.65	0.020	1097	0.0105	1.1	ZM255S05R5DAA0*
									0.025				ZM255S05R5DAB0*
	3.5	23	11	30	160	320	0.93	4.61	0.023	1127	0.0147	1.5	ZM355S05R5DAA0*
									0.028				ZM355S05R5DAB0*

◇ 备注: ZM 系列小模组 (Φ18、3 串以下) 容量测试方法参照 IEC 标准, ESRDC 测试方法采用六步法。

◇ Note: Little module (Φ18、≤3 series) of ZM series test method of capacity refers to IEC; Test method of ESR_{DC} is six-steps

■ 模组设计案例

Designed module examples

- 金属外壳型模组 (2.7V360F 单体)
- Module with metal case (cell of 2.7v360F)

项目 (Item)	产品编号 (Code)	ZM905S0100SWE0	ZM965S0090SWG0	ZM226S0080SWH0
额定容量 Rated capacity		9F	9.6F	22F
额定电压 Rated voltage		100V	90V	80V
ESR _{DC}		≤200mΩ	≤180mΩ	≤60mΩ
最大峰值电流 Maximum peak current		200A	200A	450A
绝缘耐压特性 Dielectric voltage withstand	直流 DC: 1KV, 交流 AC:2.5KV			
工作温度范围 Operating temperature range	-40℃~+65℃			
储存温度范围 Storage temperature range	-40℃~+70℃			
防护等级 Protection level		IP20	IP30	IP20
均衡方式 Balancing mode	主动 active		主动+被动 active&passitive	
均衡开启电压 Balancing threshold voltage		2.65V	2.6~2.7V	2.65V
防反接功能 Anti-reversed		/	√	√
温度检测功能 Temperatyre detection		√	√	√
尺寸 Size		450*92*184mm	305*113*207mm	415*80*300mm
主要应用 Main application	主要应用于风电变桨、混合动力汽车及储能系统等 Mainly applied to Pitch System, Hybrid Electric Vehicle and energy storage systems and etc.			

◇ 备注：特殊需要可根据客户要求另行设

◇ Note: Special requirements can be designed according to customer requirements.



- 金属外壳型模组 (2.7V3000F 单体)
- Module with metal case (cell of 2.7v3000F)

项目 (Item)	产品编号 (Code)	ZM905S0100SWE0	ZM965S0090SWG0
额定容量 Rated capacity		166F	500F
额定电压 Rated voltage		48V	15v
ESR _{DC}		≤5.8mΩ	≤2.5mΩ
最大峰值电流 Maximum peak current		2165.7A	
绝缘耐压特性 Dielectric voltage withstand		直流 DC: 1KV, 交流 AC:2.5KV	
工作温度范围 Operating temperature range		-40℃~+65℃	
储存温度范围 Storage temperature range		-40℃~+70℃	
防护等级 Protection level		IP65	
均衡方式 Balancing mode		主动 active	
均衡开启电压 Balancing threshold voltage		2.7~2.75V	2.6~2.7V
防反接功能 Anti-reversed		/	√
温度检测功能 Temperatyre detection		√	/
尺寸 Size		425*197*185mm	384*74*208mm
主要应用 Main application		主要应用于风电变桨、轨道交通能量回收及储能系统等 Mainly applied to Pitch System,Rail transportation energy recovery and energy storage systems and etc.	主要应用于汽车怠速起停系统 Mainly applied to Auto lding Start-stop system

◇ 备注：特殊需要可根据客户要求另行设

◇ Note: Special requirements can be designed according to customer requirements.

