

DESIGN KIT – ULTRACAPACITORS AND HYBRID CAPACITORS

APPLICATIONS:

- Bread-boarding designs
- Circuit Layout
- Development

CONTAINS:

- 1 x 2000F, 2.7V Ultracapacitor
- 1 x 600F, 2.7V Ultracapacitor
- 1 x 400F, 2.7V Ultracapacitor
- 2 x 100F, 2.7V Ultracapacitors
- 2 x 220F, 2.3V Hybrid Capacitor



Ioxus Part Number: MT-60001

ULTRACAPACITOR SPECIFICATIONS:

Operating Temperature Range	-40°C to +70°C	Storage Temp. Range	-40°C to +70°C
Rated Voltage, VR	2.7 V DC	Capacitance Tolerance	±10%
Cycle Life (25°, VR)	After 500,000 cycles between rated voltage and half rated voltage under constant current at 25°C ΔC < 30% decrease, ESR < 200% increase		
Life Time*	After 10 years at rated voltage and 25°C ΔC < 30% decrease, ESR < 200% increase		
Endurance: 1000 hours of 2.5V @ 70°C	Capacitance Change	Within 20% of initial specified value	
	Internal Resistance (ESR)	Within 100% of initial specified value	
Endurance: 1000 hours of 2.7V @ 65°C	Capacitance Change	Within 20% of initial specified value	
	Internal Resistance (ESR)	Within 100% of initial specified value	
Shelf Life	After 1000 hours storage at 70°C without load (0 V DC)		
	Capacitance Change	Within 20% of initial value	
	Internal Resistance (ESR)	Within 100% of initial value	

HYBRID CAPACITOR SPECIFICATIONS:

Operating Temperature Range	-25°C to +60°C	Storage Temp. Range	-30°C to +65°C
Rated Voltage, VR	2.7 V DC	Capacitance Tolerance	±10%
Cycle Life (25°, VR)	After 20,000 cycles between rated voltage and half rated voltage under constant current at 25°C ΔC < 30% decrease, ESR < 200% increase		
Life Time*	After 10 years at rated voltage and 25°C ΔC < 30% decrease, ESR < 200% increase		
Endurance	After 1000 hours application of rated voltage at 60°C		
	Capacitance Change	Within 30% of initial specified value	
	Internal Resistance (ESR)	Within 200% of initial specified value	
Shelf Life	After 1000 hours storage at 65°C without load (0V DC)		
	Capacitance Change	Within 20% of initial value	
	Internal Resistance (ESR)	Within 200% of initial value	

*Life time is a provisional value



PRODUCT DETAILS:

Part Number	Unit	RSC2R7107SR	RSC2R7407SR	RSC2R7607SR	RSC2R7208SP	RHE2R3227SR
Capacitance	F	100	400	600	2000	220
Capacitance Tolerance	%	±10	±10	±10	-5 to +20	±10
Rated Voltage	V	2.7	2.7	2.7	2.7	2.3
Surge Voltage	V	2.85	2.85	2.85	2.85	2.5
Impedance (AC 1kHz)	mΩ	≤3.6	≤3.0	≤3.0	≤0.40	≤15
ESR (DC)	mΩ	≤4.2	≤3.2	≤3.2	≤0.50	≤45
Max Stored Energy	Wh	0.101	0.405	0.608	2.025	0.162
Specific Energy	Wh/kg	5.06	5.26	6.33	5.47	
	Wh/L	5.92	6.19	7.18	5.86	9.54
Power Density	kW/kg	10.17	7.89	6.33	12.31	2.65
Constant Current	A	13	24	28	90	5
Max Current (1 sec)	A	84	237	277	1350	26
Operating Temp	°C	-40 to +65	-40 to +65	-40 to +65	-40 to +65	-25 to +60
Stored Temp	°C	-40 to +70	-40 to +70	-40 to +70	-40 to +70	-30 to +65
Diameter (Ø)	mm	22	35	35	64	22
Height	mm	45	68	88	150	45
Thickness	mm	n/a	n/a	n/a	36	
Volume	ml	17	65	85	346	18
Weight	g	20	77	96	370	25
Max Leakage Current	mA	0.27 (72 hr)	1.2 (72 hr)	1.5 (72 hr)	4.0 (72 hr)	0.27 (72 hr)
Life time	years	10	10	10	10	10
Cycle life	cycles	500,000+	500,000+	500,000+	500,000+	20,000+

**All specifications subject to change without notification; please contact ioxus for the latest information, or visit <http://www.ioxus.com> for individual datasheets and company information.