

# TITAN<sup>®</sup> 2.85@65°C 60mm Axial Cells

## FEATURES

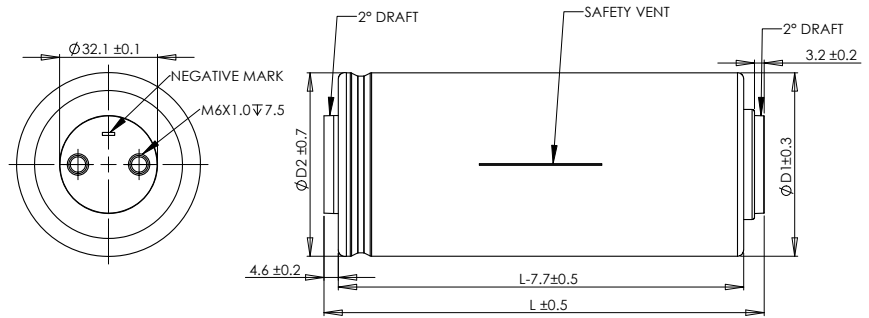
- Made in USA
- Weldable screw terminals
- Highest power available
- RoHS compliant
- Long life
- Wide temperature operating range
- 2.85V Operation

## APPLICATIONS

- High power
- High rate cycling
- High cycle life (>1,000,000 cycles)
- System prototyping/testing with available integration kit (iKIT60MM2V7A2S)

## MARKETS

- Automotive subsystem
- Engine starting
- Regen energy capture
- Backup power
- Grid/power correction
- UPS/ride through power



## MARKINGS

Products are marked with the following: Rated capacitance, rated voltage, product number, name of manufacturer, positive and negative terminal marking, maximum energy content.

## MOUNTING RECOMMENDATION

Do not reverse polarize. Install following recommendations in *Notes on Using Ultracapacitors*, available at [www.ioxus.com](http://www.ioxus.com). Contact your Ioxus representative for ordering and application information regarding sizing and to purchase integration kits

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# PRODUCT SPECIFICATIONS

ELECTRICAL/PART NUMBER	iRD1200K270CT	iRD2000K270CT	iRD3000K270CT
Capacitance (F) [Min/Nom]	1152/ <b>1200</b>	1920/ <b>2000</b>	2880/ <b>3000</b>
Voltage (Rated/Surge) [ $V_R/V_S$ ]	<b>2.85</b> /3.0	<b>2.85</b> /3.0	<b>2.85</b> /3.0
DC ESR 10ms (m $\Omega$ ) [Nom/Max]	<b>0.27</b> /0.32	<b>0.22</b> /0.30	<b>0.20</b> /0.28
IEC DC ESR (m $\Omega$ ) [Nom/Max]	<b>0.42</b> /0.51	<b>0.29</b> /0.35	<b>0.25</b> /0.31
AC ESR(m $\Omega$ 1kHz) [Nom/Max]	<b>0.26</b> /0.32	<b>0.22</b> /0.28	<b>0.20</b> /0.26
Inductance (nH) Reference Only	60	60	60
72hr Leakage $\leq$ (mA) <b>2.7V</b> /2.85V	1.7	3.7	4.5
<b>CYCLING</b> (Calculated from nominal values)			
Current, Peak [1s] (A)	1300	2000	2700
Continuous Current (A) [20° Rise]	112	122	134
Current, Short Circuit (A)	10,500	12,900	14,200
<b>THERMAL</b> (Reference)			
<b>Operational</b> / Storage Range ( $^{\circ}$ C)	<b>-40 to 65<math>^{\circ}</math>C</b> / -40 to 70 $^{\circ}$ C		
Resistance, Thermal ( $^{\circ}$ C/W) [ $R_{TH}$ ]	5	4.5	4
<b>ENERGY/POWER</b> (Reference / Calculated using nominal values)			
$E_{MAX}$ (Whr) [Min/Nom]	1.30/ <b>1.35</b>	2.17/ <b>2.26</b>	3.25/ <b>3.38</b>
$E_{MAX}$ (Whr/kg)	4.6	5.8	6.6
$E_{MAX}$ (Whr/L)	5.9	7.3	8.3
$P_{MAX}$ Impedance Matched Power (kW/kg)	26	24	20
$P_{MAX}$ Impedance Matched Power (kW/L)	34	30	25
Usable $P_d$ (kW/kg)	12	11.4	9.6
<b>PHYSICAL</b> (Nominal Values)			
D1 (mm) (+/- 0.3)		60.2	
D2 (mm) (+/- 0.7)		60.7	
L (mm) (+/- 0.5)	80	108.1	144
Mass (kg)	0.295	0.390	0.510
Volume (L) (CALCULATED)	0.228	0.308	0.410
<b>Terminal Fastener Size</b> / Max Torque	<b>M6X1</b> / 5Nm (44in/lbs)		
<b>LIFE</b> (EOL Criteria) [ <b>Capacitance</b> /IEC DC ESR] *Life is a provisional value			
DC (10 Yr, 25 $^{\circ}$ C, @ $V_R$ ) [ <b>F</b> /m $\Omega$ ]	> <b>920</b> / $<1.0$	> <b>1530</b> / $<0.70$	> <b>2300</b> / $<0.62$
Endurance ( <b>2000</b> hr, 65 $^{\circ}$ C, @2.85V) [ <b>F</b> /m $\Omega$ ]	> <b>920</b> / $<1.0$	> <b>1530</b> / $<0.70$	> <b>2300</b> / $<0.62$
Storage (4 yr, 25 $^{\circ}$ C, @ 0V) [ <b>F</b> /m $\Omega$ ]	> <b>1030</b> / $<0.77$	> <b>1720</b> / $<0.53$	> <b>2590</b> / $<0.47$
Cycle (1M Cyc, 25 $^{\circ}$ C, @ $V_R-V_R/2$ ) [ <b>F</b> /m $\Omega$ ]	> <b>920</b> / $<1.0$	> <b>1530</b> / $<0.70$	> <b>2300</b> / $<0.62$
<b>STANDARDS COMPLIANCE</b> ( <u>UNDERLINED ITEMS ARE PENDING</u> )			
Safety/Environmental	RoHS, UL810a, Chinese RoHS, IEC 60068-2-14, SAE J2464		
Shock	IEC 60068-2-27		
Vibration	SAE J2380, ISO 16750-3 (Table 14), IEC 60068-2-6		

## ADDITIONAL TECHNICAL INFORMATION

Product specification test and calculation methods are available in *Ioxus Notes on Datasheet Specifications*

