



The List of RJD's Products

www.routejd.com

2010.07

Context

I. PowerDisc

II. FLPB

III. Appendix



PowerDisc™

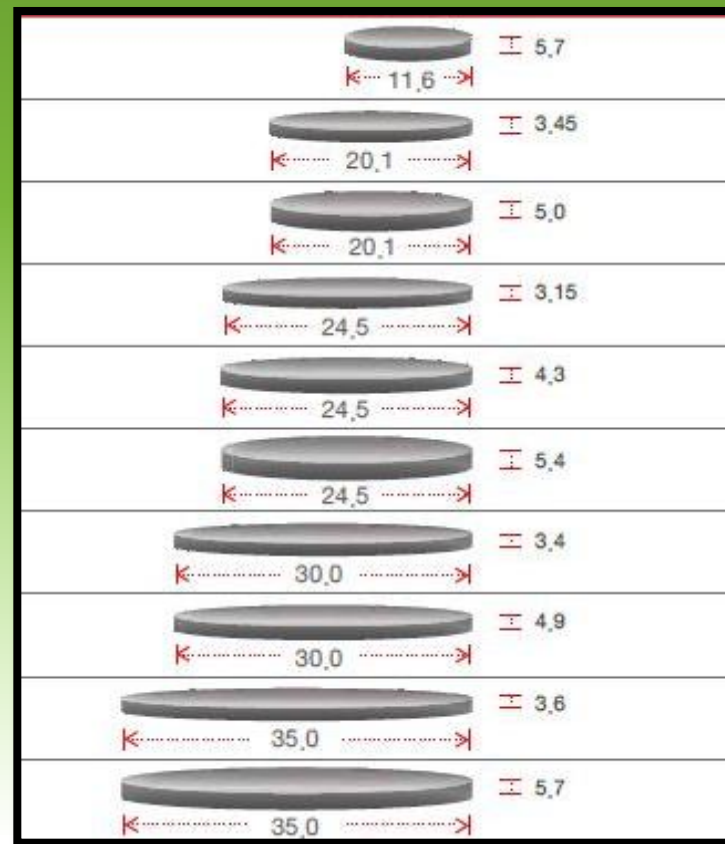
PowerDisc™

1-1. PowerDisc™ current *Line-Up*



Model	Capacity	Dimension (mm)		Voltage	Max. Discharge Current
		Diameter	Thickness		
PD1255	38mAh	11.6	5.7	3.7V	2C
PD2032	75mAh	20.1	3.45		
PD2048	120mAh	20.1	5.0		
PD2430	100mAh	24.5	3.15		
PD2440	150mAh	24.5	4.3		
PD2450	200mAh	24.5	5.4		
PD3032	180mAh	30.0	3.4		
PD3048	300mAh	30.0	4.9		
PD3535	320mAh	35.0	3.6		
PD3555	500mAh	35.0	5.7		

Dimension (mm)



1-2. High Energy *Line-Up*

Current

2nd Gen.

3rd Gen.

4th Gen.

Nominal Size (dia. x thick., mm)	Product Name	Nominal Capacity (mAh)								
		2010				2011				2012
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
8 x 3.6	PD0836	-	-	7	7	10	10	10	12	13
12 x 5.5	PD1255	38	38	38	40	40	40	40	42	45
20 x 3.2	PD2032	75	75	75	80	80	80	80	85	90
20 x 4.8	PD2048	120	120	120	125	125	125	125	130	150
24 x 3.0	PD2430	100	100	100	105	105	105	105	110	125
24 x 4.0	PD2440	150	150	150	155	155	155	155	165	190
24 x 5.0	PD2450	200	200	200	210	210	210	210	220	250
30 x 3.2	PD3032	180	200	200	200	200	200	200	220	240
30 x 4.8	PD3048	300	300	300	315	315	315	315	330	380
35 x 3.5	PD3535	320	320	320	345	345	345	345	360	410
35 x 5.5	PD3555	500	500	500	550	550	550	550	580	650

- Nominal Voltage : 3.7V
- Standard Charge Current: 0.5C
- Standard Discharge Current : 0.2C
- Maximum Discharge Current: 2C
- Cycle Life: 80% @ 500th cycle (under standard charge / discharge)



PowerDisc™ *High Energy*

1-3. High Power *Line-Up*

Current

2nd Gen.

3rd Gen.

4th Gen.

Nominal Size (dia. x thick., mm)	Product Name	Nominal Capacity (mAh)								
		2010				2011				2012
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
20 x 3.2	PD2032P			55	55	55	55	55	60	65
20 x 4.8	PD2048P			85	85	85	85	85	100	105
24 x 3.0	PD2430P			75	75	75	75	75	85	90
24 x 4.0	PD2440P			110	110	110	110	110	125	135
24 x 5.0	PD2450P			150	150	150	150	150	170	175
30 x 3.2	PD3032P			150	150	150	150	150	170	175
30 x 4.8	PD3048P			220	220	220	220	220	250	265
35 x 3.5	PD3535P			240	240	240	240	240	270	290
35 x 5.5	PD3555P			380	380	380	380	380	430	460

- Nominal Voltage : 3.7V
- Standard Charge Current: 1C
- Standard Discharge Current : 3C
- Maximum Discharge Current: 5C
- Cycle Life: 80% @ 1000th cycle (under standard charge / discharge)



PowerDisc™ *High Power*

1-4. 3.0V Lithium Ion

Current

2nd Gen.

3rd Gen.

4th Gen.

Nominal Size (dia. x thick., mm)	Product Name	Nominal Capacity (mAh)								
		2010				2011				2012
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
8 x 3.6	PD0836E				7	7	7	7	8	9
12 x 5.5	PD1255E				28	28	28	28	29	32
20 x 3.2	PD2032E				55	55	55	55	60	65
20 x 4.8	PD2048E				85	85	85	85	90	105
24 x 3.0	PD2430E				75	75	75	75	80	85
24 x 4.0	PD2440E				110	110	110	110	115	135
24 x 5.0	PD2450E				150	150	150	150	155	175
30 x 3.2	PD3032E				140	140	140	140	155	170
30 x 4.8	PD3048E				220	220	220	220	230	265
35 x 3.5	PD3535E				240	240	240	240	250	285
35 x 5.5	PD3555E				380	380	380	380	400	455

- Nominal Voltage : 3.2V
- Standard Charge Current: 1C
- Standard Discharge Current : 1C
- Maximum Discharge Current: 5C
- Cycle Life: 80% @ 1000th cycle (under standard charge / discharge)

PowerDisc™ 3.0V Lithium Ion



FLPB™

FLPB™

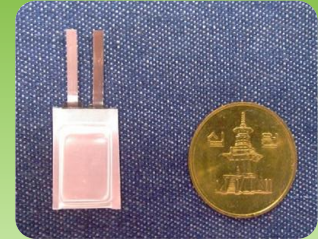
2-1. FLPB™ Line-Up

제품	Current / Ready Made FLPB		
	Nominal Capacity (mAh)	Nominal Voltage (V)	양산시점
D-48	48 mAh	3.7 V	양산
241019	25 mAh		양산
172525	60 ~ 70 mAh		10.4Q
501220	80 ~ 90 mAh		10.4Q
402325	160 ~ 170 mAh		10.4Q

FLPB D48



FLPB241019



FLPB402525



- Nominal Voltage : 3.7V
- Standard Charge Current: 0.5C
- Standard Discharge Current : 0.2C
- Maximum Discharge Current: 2C
- Cycle Life: 80% @ 500th cycle (under standard charge / discharge)

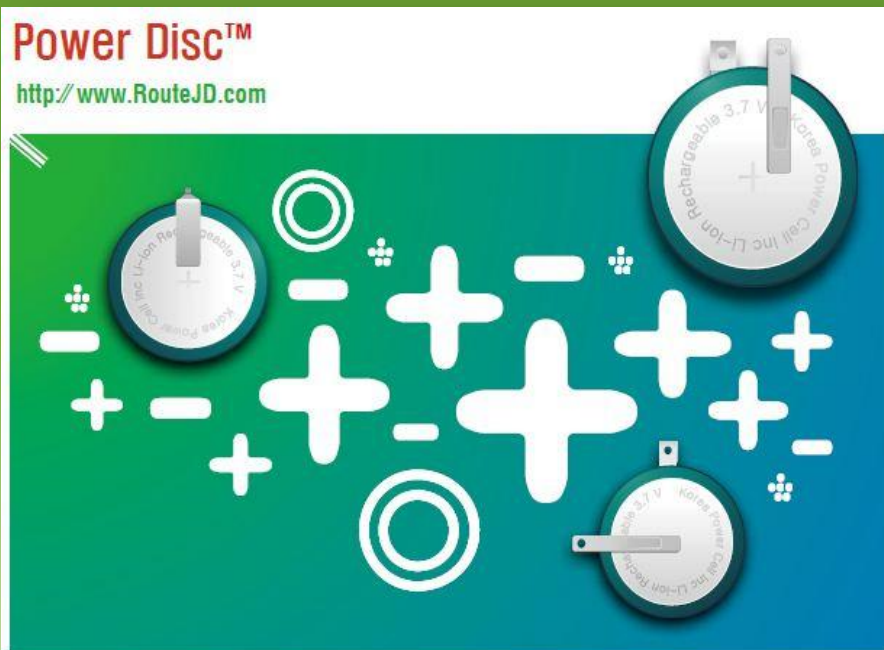
Model Number 473048 means,



2-2. FLPB™ Line-Up

1st Gen. 2nd Gen. 3rd Gen.

Model *	Nominal Capacity (Ah)								
	2010				2011				2012
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	
473048				660 mAh	660 mAh	660 mAh	660 mAh	690 mAh	730 mAh
803048				1.1	1.1	1.1	1.1	1.1	1.2
1203048				2.0	2.0	2.0	2.0	2.1	2.2
393459				930 mAh	930 mAh	930 mAh	930 mAh	980 mAh	1.0
533459				1.1	1.1	1.1	1.1	1.1	1.2
593459				1.2	1.2	1.2	1.2	1.3	1.3
563496				1.7	1.7	1.7	1.7	1.8	1.9
653496				2.0	2.0	2.0	2.0	2.1	2.2
803496				2.4	2.4	2.4	2.4	2.5	2.6
903496				2.8	2.8	2.8	2.8	2.9	3.0
1003496				3.1	3.1	3.1	3.1	3.3	3.5
603870				2.0	2.0	2.0	2.0	2.1	2.2
396495				2.6	2.6	2.6	2.6	2.8	2.9
526495				3.5	3.5	3.5	3.5	3.7	3.8
776495				5.6	5.6	5.6	5.6	5.9	6.2
554374				1.7	1.7	1.7	1.7	1.8	1.9
834374				2.6	2.6	2.6	2.6	2.8	2.9
5043128				3.2	3.2	3.2	3.2	3.3	3.5
8043128				4.2	4.2	4.2	4.2	4.4	4.6
8643128				4.7	4.7	4.7	4.7	5.0	5.2
8043140				4.2	4.2	4.2	4.2	4.4	4.7
8643140				4.7	4.7	4.7	4.7	5.0	5.2
9543140				5.3	5.3	5.3	5.3	5.5	5.8
10843140				5.9	5.9	5.9	5.9	6.2	6.5
11043140				6.3	6.3	6.3	6.3	6.6	7.0
11543140				6.6	6.6	6.6	6.6	6.9	7.2



Appendix

Appendix

Features & Advantages

1. Custom-made flexible design

Optimal design for your slim and compact devices

2. High Energy Density

Higher energy density than Ni-Cd, Ni-MH, and Li-polymer cells (>350wh/L, including safety circuit)

3. High Voltage

Three times higher voltage(3.7V/cell) than Ni-Cd and Ni-MH(1.2V/cell)

4. Long Cycle Life

Over 80% remaining capacity after 500 discharge cycles.

5. High Safety and Reliability

No leakage or explosion even in high temperature.
No swelling as like polymer battery.

6. Fast Charging

The coin-type cell can be fully charged in only 1.2hours using CC/CV at 1CmA.

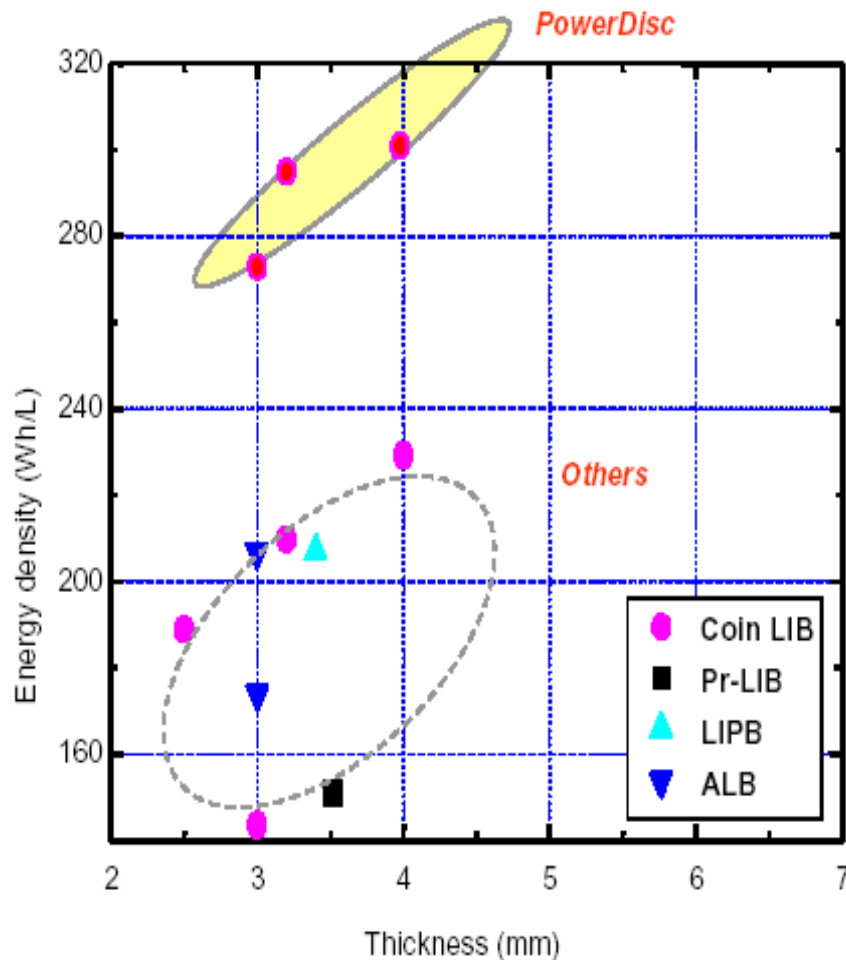
7. Superior Storage Performance (Low Self-Discharge)

Experience the Power of Design Freedom



Our patented "free-stacking" technology provides the improvement of energy density and the enhancement of design flexibility. Today, the Route JD rechargeable battery is available in various cell size and shape (rectangular, circle, oval, etc...). Yes, we are customizable to almost any size and shape designed around the available space in the product, instead of the product being designed to accommodate the size and shape of the battery

Competitive Advantage of PowerDisc

The World's Highest Volumetric Energy Density!!!



Model	mAh	Volumetric Energy Density
PD2430	100	270 Wh/L
China LIR2430	45	120 Wh/L
PD2440	150	300 Wh/L
Japan 342730	150	200 Wh/L
PD3032	180	290 Wh/L
Japan CR3032	130	210 Wh/L

PD2048	Pouch 042025	
		
20 * 4.8 (1.5cm ³)	20 * 25 * 4.0 (2.0cm ³)	30% ↓
120mAh (3.7V)	120mAh (3.7V)	Same
289Wh/L	222Wh/L	30% ↑



Updated News

Route JD to Supply Battery Production Technology to Dow Kokam

- Total production capacity by the line (turn key base production plant) is expected to be ~600MWh per year
- The demonstration for Jade's technology regarding this is also scheduled in June, in the Route JD's factory, in Korea

Factory Construction for New Line, PD line capacity increase started

- The construction started from Apr.
- PowerDisc's yearly max. production capacity will be increased up to 7M, by the end of this year

Exhibition/Business Trip

Visiting to EU

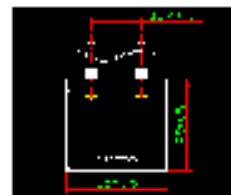
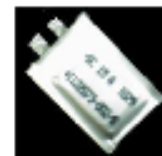
- Business meeting with customers in 3 EU countries (Sweden, Finland, Denmark) is due on 5/24~ 6/02

Visiting to Japan

- Business trip for market survey and customer meeting is scheduled in Japan, on 6/1~5

MD&M East, in USA

- Technical introduction for new FLPB targeting medical electric devices will be in the exhibition. (6/8~11)



Special Report - FLPB 'Ready Made' Line-up to be determined

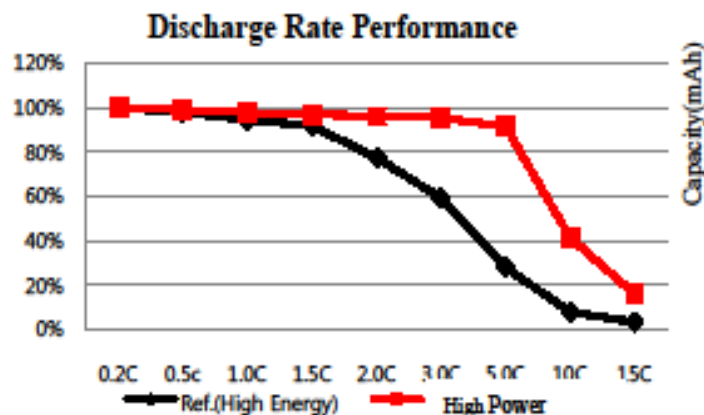
- New FLPB model will be added Jade's production line up (not the custom battery)
- More detail information will be updated soon

'Custom Battery' for special product

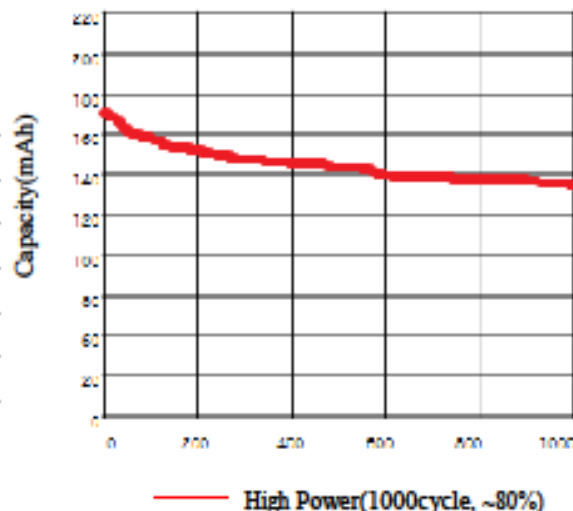
- One of the important medical device manufacturer to accept Route JD's "D-shape" custom battery
- A new project with one of the major electric company in Korea to be started

1. New PowerDisc - "PowerDisc-P"serie, high power products

a. Rapid Charge/ Discharge



b. 1C/1C Cycling Performance



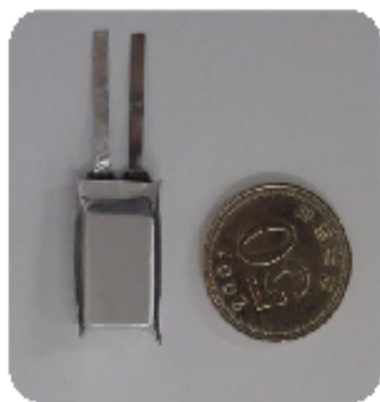
3. Latest News

The illegal distribution of Chinese Lithium Polymer Battery

2010.06.20- Seoul Customs Office in Korea (SCO) uncovered uncertified lithium polymer batteries which were imported from China. Already released batteries were calculated as approximately USD 45 million dollars. SCO cautioned that the illegal batteries could be a cause of manufactured device's explosion.

2. Recent releases : FLPB Models

- Model name: FLPB 501220
- Voltage : 3.7V
- Capacity: 95mAh
- MP start: Oct. 2010
- Target Market: Active 3D Glasses
Small IT devices, Bluetooth headset...



Product	Dimension	Capacity	Launching Time
500640	5(T) * 6(W) * 40(L) mm	90mAh	Oct. 10
172525	1.7(T) * 25(W) * 25(L) mm	60mAh	Sep. 10
XX2030	XX(T) * 20(W) * 30(L) mm	80~160mAh	4Q. 10
XX4060	XX(T) * 40(W) * 60(L) mm	500 ~ 1000mAh	4Q. 10

Updated News



Route JD participates in a project R&D team for developing “Flexible Solid Film Cells”.

RouteJD participates in a government R&D task for developing “Flexible solid film cells”. The R&D team is organized as Ulsan National Institute of Science and Technology, Route JD, LG Chemical, CIS, Corechips. This project will be funded about USD 21 million dollars for five years under government support (Ministry of Education, Science and Technology).

“Flexible solid film cells”

Market News: Exhibition

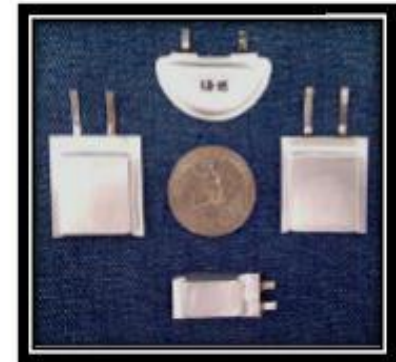
**2010 Renewable Energy
and EV Expo, Korea**
(2010 July 14~16)

2010 Renewable Energy and EV Expo was held in Coex exhibition centre, Seoul, Korea. In the exhibition, the next generation of battery industry, market and technology trend were discovered through Smart battery/Cell Forum. The Smart Battery/Cell Forum was organized by Charles Halasz in A&D Technology, Samsung SDI, LG Chemical, KT, KAIST, Korea Electronics Technology Institute, Korea Electrotechnology Research Institute, Korea Institute of Science and Technology and etc.



FLPB Line-Up News

Ready to be spread in the Market



Product	Dimension	Capacity	
501220	5(T) * 12(W) * 20(L) mm	95mAh	Ready
172525	1.7(T) * 25(W) * 25(L) mm	60mAh	Ready
402525	4(T) * 25(W) * 25(L) mm	170mAh	Ready

Three of “Ready Made” FLPB batteries are waiting for being spread in the Market. These batteries are specially made for 3D glasses and small Bluetooth devices.

For more detailed information, please contact us.