ELNA

Company Profile

ELNA

Capacitors division

Profile

Company Name	ELNA Co.,Ltd.
Address	3-8-11 Shin-Yokohama, Kouhoku Yokohama 222-0033, JAPAN
Established	May 25, 1937
Capital	JPY 3.59 billion
Turnover	JPY 26.4 billion (2009) JPY 29.9 billion (2010)
Employees	3,000 (world wide)
Listed in 2nd section of Tokyo Stock Market(code 6972)	
Major Stockholder	Mizuho Financial Gr/Japan Industrial Partners

ELNA

History

1937 Founded
1937 Started the manufacturing of Electrolytic Capacitors
1960 Started the manufacturing of Printed Circuit Boards
1961 Started the manufacturing of Tantalum Solid Electrolytic Capacitors
1970 Company name changed to ELNA CO.,LTD.
1977 Founded ELNA AMERICA INC. in the U.S.A.
1979 Founded ELNA ELECTRONICS SINGAPORE Pte. Ltd.inSingapore
1980 Founded TANIN ELNA CO., LTD. in Thailand
1987 Developed Electric Double Layer Capacitors
1994 Founded ELNA SONIC SDN. BHD. in Malaysia
1994 Founded ELNA PCB(M) SDN. BHD. in Malaysia
1996 Founded ELNA EUROPE LTD. in the U.K.
2001 Founded ELNA HONG KONG CO.,LTD. in Hong Kong
2002 Founded ELNA SHANGHAI CO.,LTD. In China
2002 Developed Aluminum Polymer Capacitors
2002 Developed Automotive New Aluminum Capacitors
2007 Developed Electric Double Layer Capacitor Coin type 414
2010 Developed Aluminum Capacitor (Pencil-Type) for F-TV

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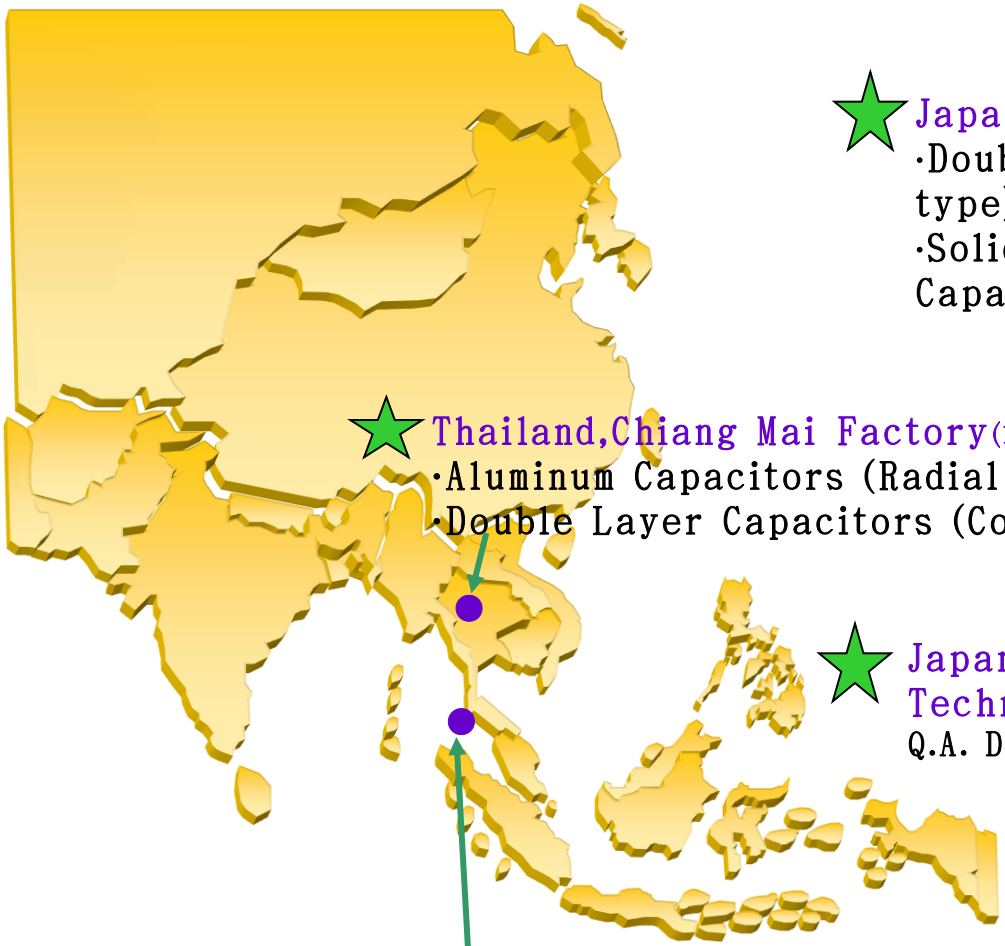
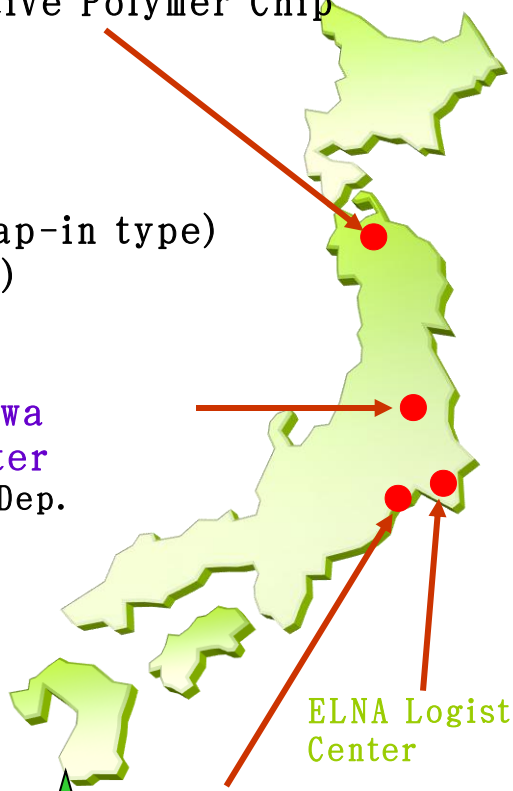
roduction Sites for Capacitors





Japan, Aomori factory(1979)
- Double Layer Capacitors (Coin type)
- Solid Conductive Polymer Chip Capacitors

Thailand,Chiang Mai Factory(1980)
- Aluminum Capacitors (Radial type, Snap-in type)
- Double Layer Capacitors (Coiled type)

Japan Shirakawa Technical Center
Q.A. Dep. & R&D Dep.

Malaysia Penang factory.(1995)
- Aluminum Electrolytic Capacitors (Radial type, Chip type)

ELNA Logistic Center

ELNA HQ

Environmental Capacitors

Our Environmental Friendly Capacitors are not using "Lead" and "Polyvinyl chloride". The following are objectives and descriptions of legislation and regulations.

EU2000/53/EC ELV Directive

End-of-Life Vehicle Directive

EU2002/95/EC RoHS Directive

Restriction of the Use of Certain Hazardous Substances In Electrical and Electronic Equipment

"Directive which places a ban on the use of hazardous substances" in relation to waste electrical and electronic equipment.

EU2002/96/EC WEEE Directive

Waste Electrical and Electronic Equipment

Directive to recycle waste electrical and electronic equipment in accordance with the RoHS directive shown above

EU91/338/EEC Restriction of the Use of Cadmium in Plastics

EU94/62/EC Packaging and Waste Packaging Directive

Environmental Policies

1. We will accurately assess the impact of our business upon the environment, and engage continuously in activities to prevent environmental pollution and reduce environmental impact.
2. We will not only strictly observe all related laws and regulations but also engage in voluntary activities to maintain and improve the environment.
3. We will give full consideration to environmental preservation in the provision of our products.
4. We will work to reduce the environmental impact of our manufacturing processes by reducing energy requirements and waste, etc.
5. We will work with local and other related government agencies and contribute to activities to preserve and improve the environment.
6. We will implement environmental education, aiming to increase the awareness of environmental issues.

ELNA

Certification

Confidential

		TS 16949	(QS9000)	ISO9001	ISO14001
JAPAN	FUKUSHIMA Factory			RCJ-96M-16	RCJ-MES04031
JAPAN	AOMORI Factory		SGS-US05-1038	SGS-JQ1327	JQA-EM2918
THAILAND Factory		TÜV-44111060686	TÜV-041019506	TÜV-0410019990506E5	TÜV-0410419990506
MALAYSIA Factory		IATF0038084	SGS-GB03/58518	SGS-QSP 20012	SGS-GB03/60718
CHINA Factory				BSi-FM68865	SGS-GB03/59853

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ALUMINUM ELECTROLYTIC CAPACITORS for AUTOMOBILE APPLICATION

Recommendation Series for Automobile Application

Power Steering

High Ripple Current, Low-ESR,
High Temperature resistance
RKD, RK, RJD, RJ4, RVZ

Airbag Electronic Control Unit

Large Capacitance,
Low-ESR, Long- life
RJE, RJD, RJH, RJ4, RVJ,
RVZ

Audio Video Navigation

Low-profile, Bi-polar, Sound
R2A, R3A, ROB, RBD, RVO

Engine control

High Temperature resistance,
High Ripple Current, Low-ESR,
RPK, RKA, RYA, RYK, RJD,
RVD, RVZ

Auto Temperature Control

High Ripple Current,
Long-life, Low-ESR
RJF, RJL, RJH, RJB, RVZ,
RVD

Parking Assist System

Miniaturization, Long-life
RJD, RJH, RJB, RJ4,
RVJ, RVZ

Body Control Module

Vibration resistance High
Temperature resistance,
Low-ESR
RPK, RKD, RYK, RJD,
RVD, RVZ

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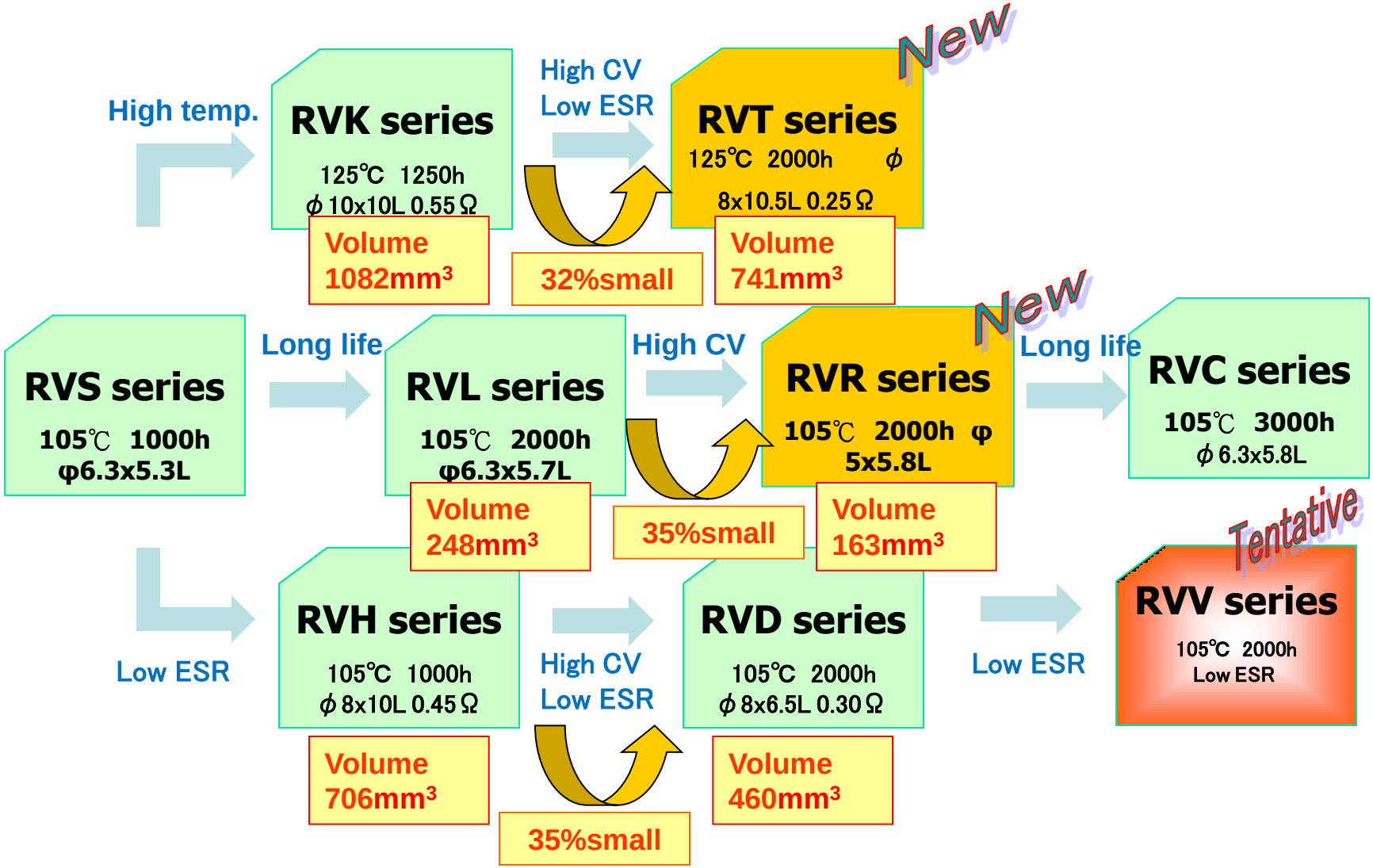
Chip type Development Roadmap (Chip type , over 105degC)



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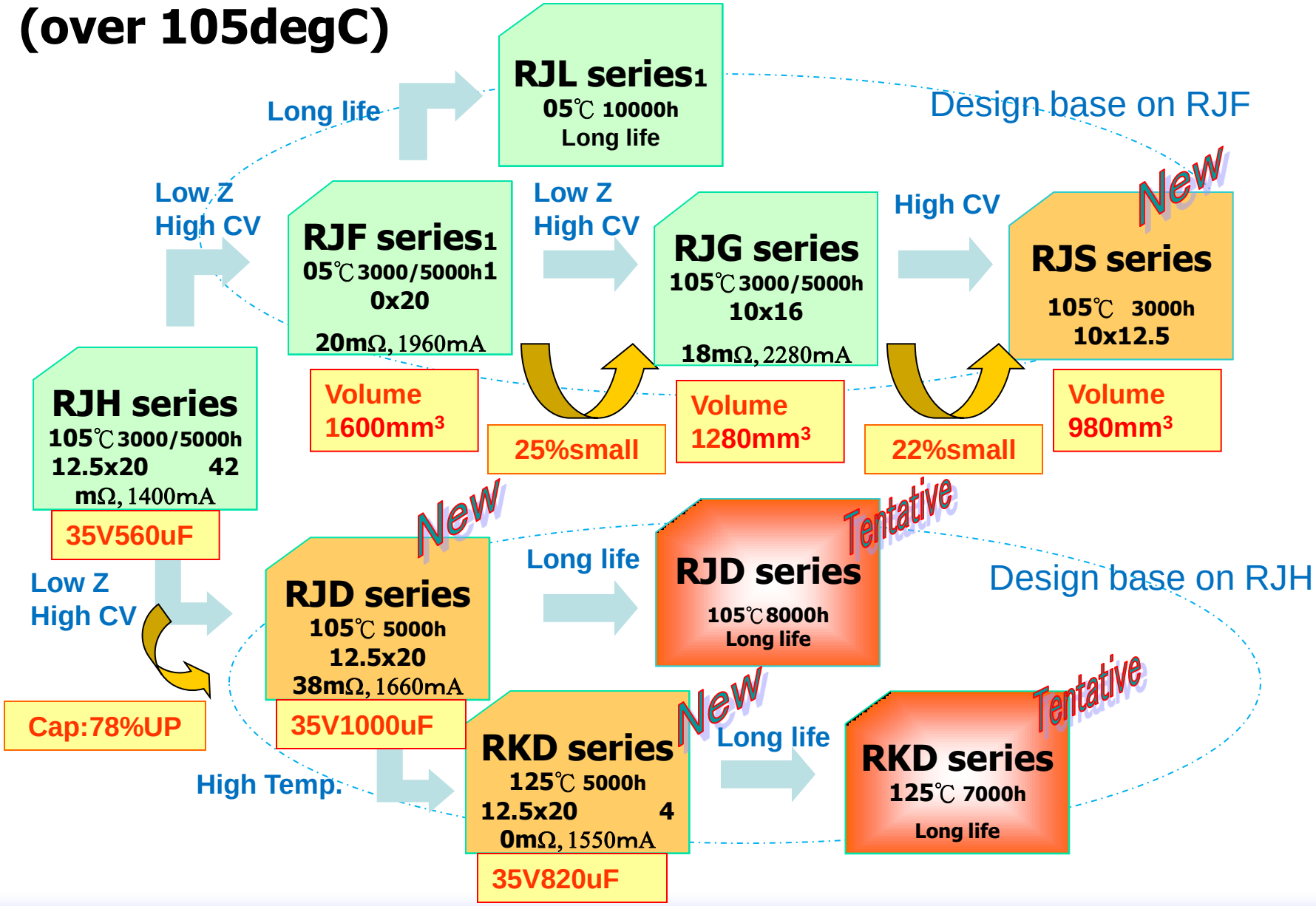
Radial type Development Roadmap (over 105degC)



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Road Map of Aluminum Electrolytic Capacitors

2011

Automotive
: Lead type,Low Z
125℃5000h(RKD)

Low Impedance
: High CV,Low Z
105℃5000h(RJD)

Long Life
: Low Z
105℃5000h(RJD)
: SMD 5.5L
105℃2000h(RVR)

For Audio
: SMD Chip type
SILMIC(RVF)

2012

Automotive
: Lead type,Low Z
125℃10000h(RKD)
: 100V,Low Z
125℃2000h(RKD)
: SMD ,Low Z
125℃3000h(RVT)

Low Impedance
: High CV,Low Z
105℃8000h(RJD)
: SMD Super Low Z(RVV)

Long Life
: Low Z
105℃8000h(RJD)

For Audio
: for Power supply
High Grade(ROT)
: SMD
High Grade(RVW ver.3)

2013

Automotive
: Lead type,Low Z
135℃3000h(RKB)
: 100V,Low Z
125℃5000h(RKD)

Low Impedance
: Super Low Z,Long Life
105℃10000h(RJZ)

Long Life
: Super Low Z,Long Life
105℃10000h (RJZ)

For Audio
: SMD SILMIC(RVF ver.2)
: SMD High Grade(RVW ver.4)

2014

Automotive
: Lead type,Low Z
135℃5000h(RKC)

Low Impedance
: Miniature. Long Life
Low Z
105℃10000h(RJZ-2)

Long Life
: Miniature. Long Life
Low Z
105℃10000h(RJZ-2)

For Audio
: SMD
SILMIC(RVF ver.3)
: SMD
High Grade(RVW ver.5)

2015

Automotive
: Lead type
150℃3000h (RQB)

Low Impedance
: SMD Super Low Z(RVV-3)

Long Life
: SMD, Miniature.
105℃10000h(RVU-2)

For Audio
: Large Cap SMD
: New For Audio type by New Material

For Audio
Anti-Vibration
High Temp.
Long Life
Low ESR,Z

ELNA

Vibration Resistance Technology

特殊横形構造で高い耐振動性を実現

High vibration resistance is realized with original horizontal form structure.

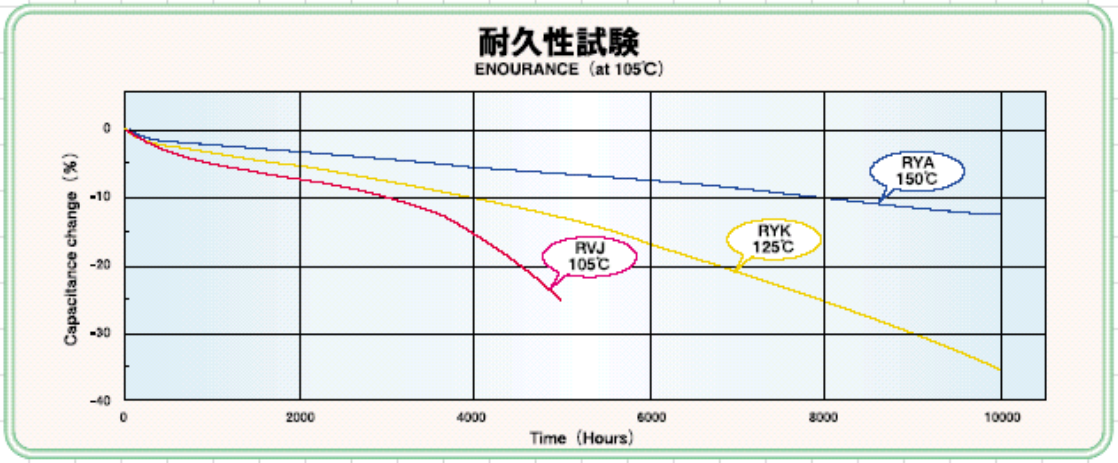
NEW

RYA Series (150℃)
RYK Series (125℃)
Horizontal type

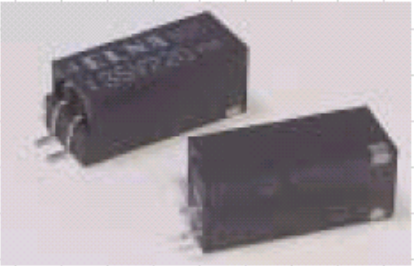
世界初　SMDで150℃を保証
First in the world
This series is guaranteed 150℃ by SMD.

新開発材料とエルナー独自のユニークな構造で、表面実装部品で始めて150℃保証を可能にしました。

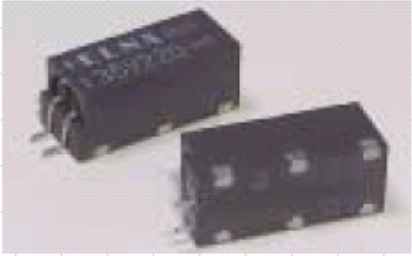
With newly developed material and original structure, this begin by the surface mounted device and 150 degree-C guarantee is attained.



4端子タイプ
4teminals
Max 40G



8端子タイプ
8teminals
Max 100G



Vibration Resistance Technology

多端子化と樹脂の固着で高い耐振動性を実現

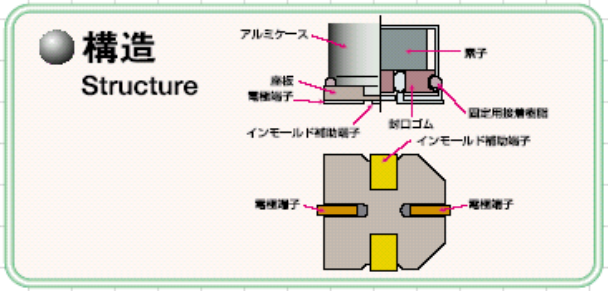
High vibration resistance is realized by fixing of the formation of multi terminal, and a resin.

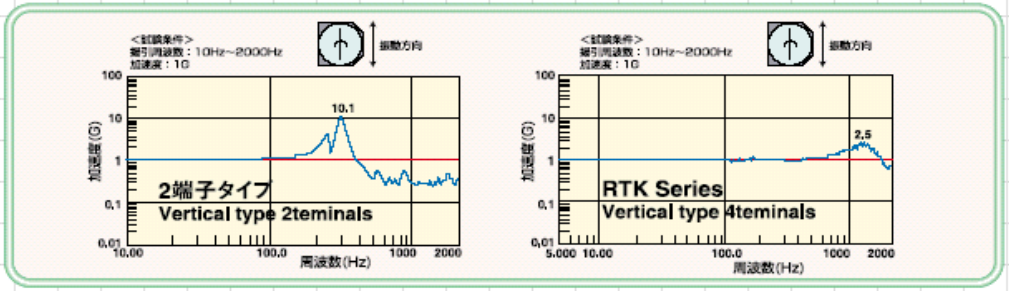
RTK Series
Vertical 4teminals

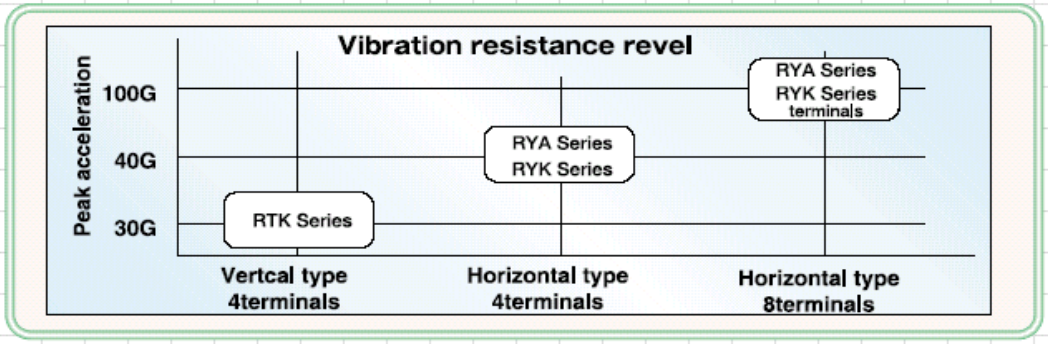
Max 30G

インモールドで形成した補助端子と接着樹脂で
コンデンサ本体を固定し、耐振動性を確保しました。

By the auxiliary terminal and adhesion resin which were formed by the in-mold, the main part of a capacitor was fixed and vibration resistance reservation was carried out.







For safety delivery for Customer

ELNA

New Tray Packing For D12.5x20L

Vertical direction
and
Horizontal direction
are possible.

Barcode labels on ESD tray

Tray size:350x260x25 (mm)
Q'ty:100pcs/tray
500pcs/inner box
(380x265x95)

High safety of the terminals in order to guarantee forceless hand assembly

For assembly

Polarity protection

	F49	F48
		
Diameter	D10 to D12.5	D16 to D18
Packing	Bulk & ESD tray & Polyurethane	Bulk & ESD tray

Long size capacitor(>25L) is THD.

High-Reliability Series

RQA series

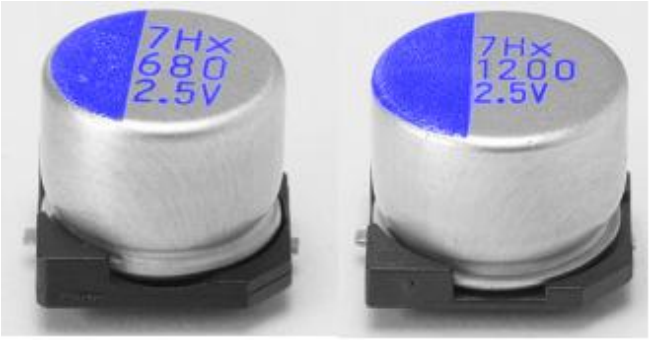
RKD 125degC5000h → *High temp. Long life* → RQA 150degC2000h

150 deg C & Long Life for Automotive

		Size (mm)	Impedance (Ohm)	Ripple current (Arms)	Life time (h)	Vibration resistance (3pin type)
35V 1000uF	RKD	18x20	0.029	2.32	125degC5000h	Available
	RQA	18x23	0.029	1.20	150degC2000h	Available

Characteristics

- Life time :150degC 1000 to 2000h
- Rated voltage : 10 to 35WV
- Capacitance :68 to 10000uF
- Temperature range: -40 to 150degC
- Size: 8x16 to 18x43



ALUMINUM ELECTROLYTIC CAPACITORS

With CONDUCTIVE POLYMER SOLID ELECTROLYTE

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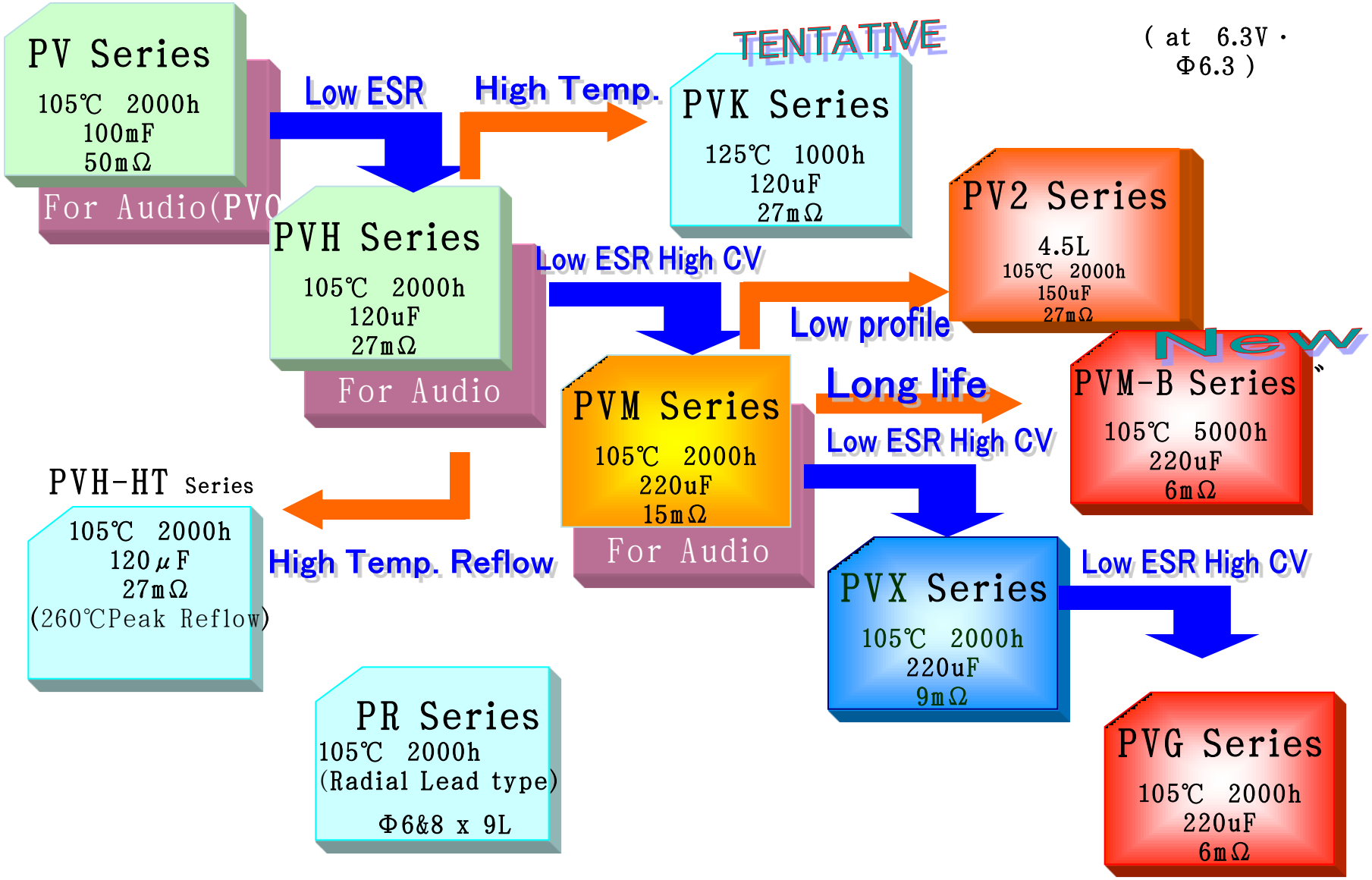
Systematized Classification



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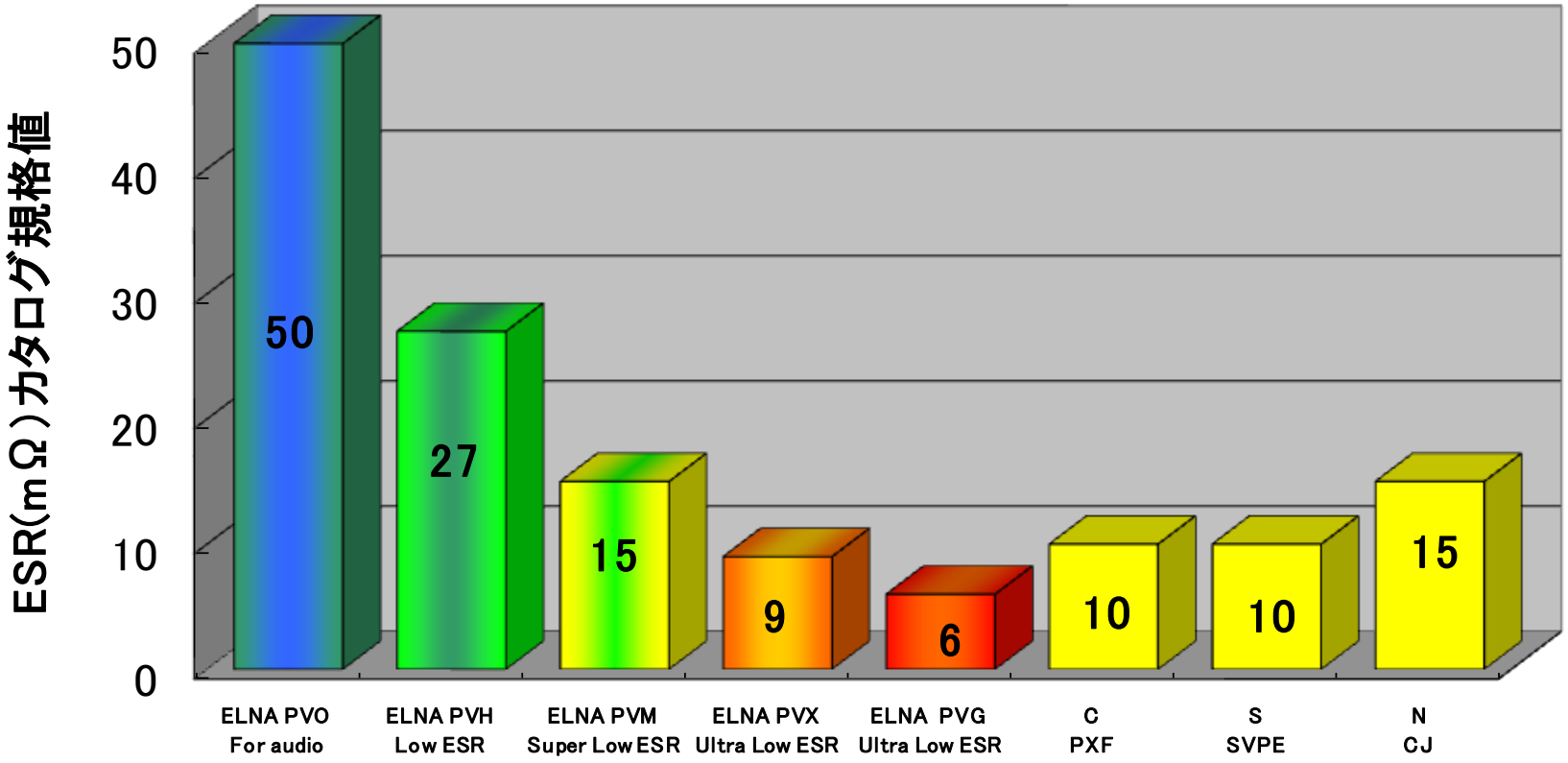
History and Future schedule of Reduction in ESR

2010

φ6.3×5.7L



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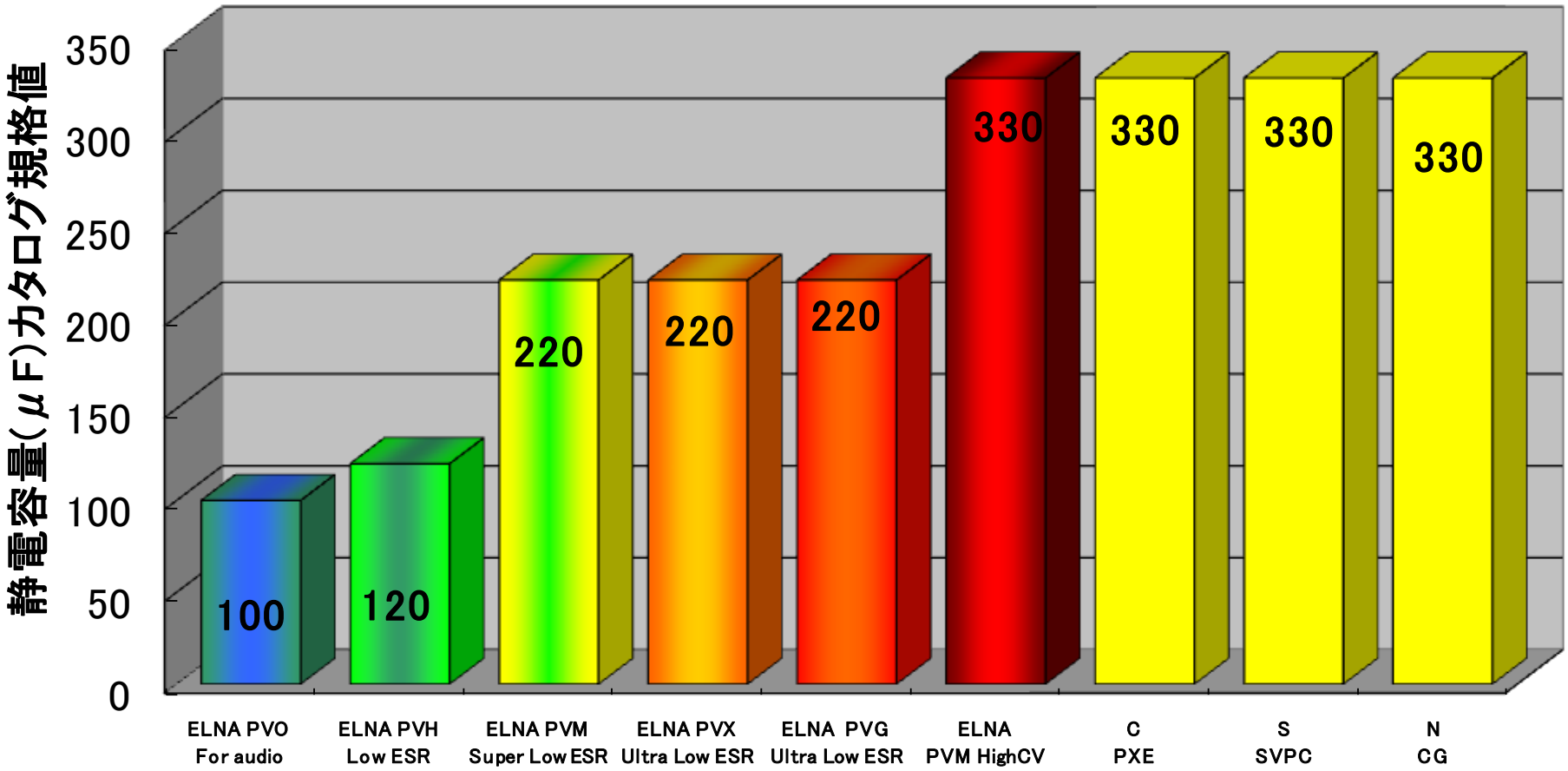
History and Future schedule of High Capacitance

2010

φ6.3×5.7L　6.3V



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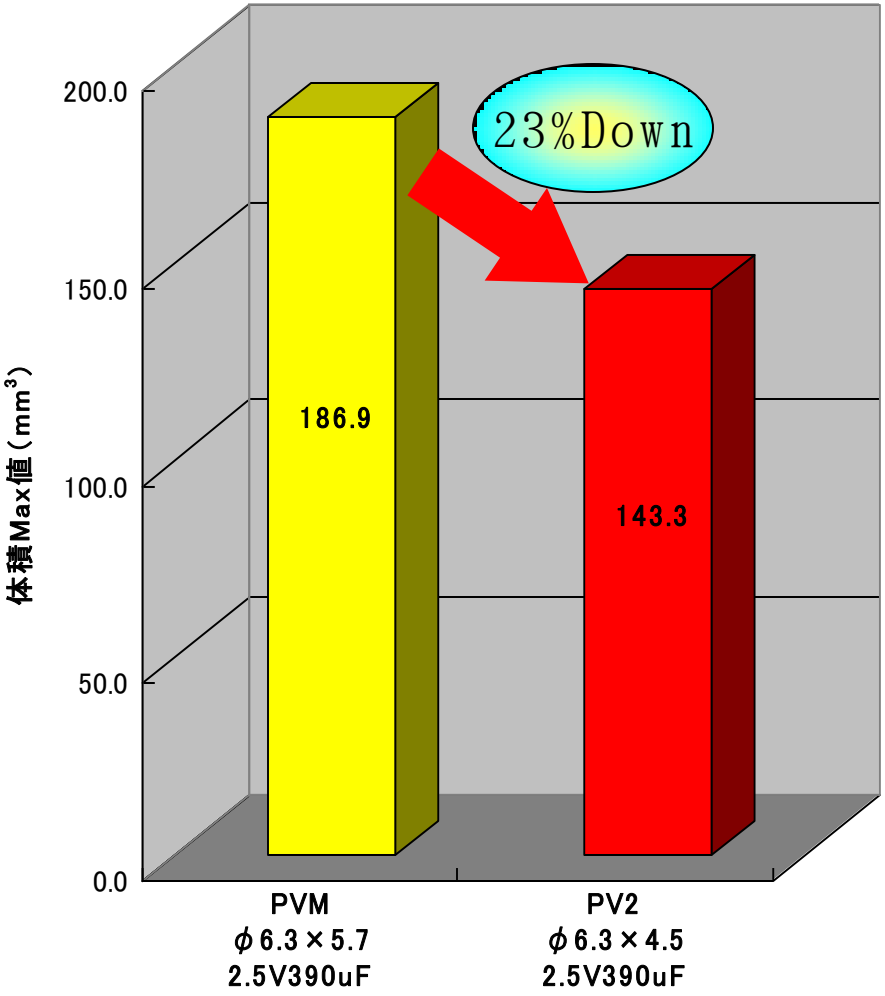
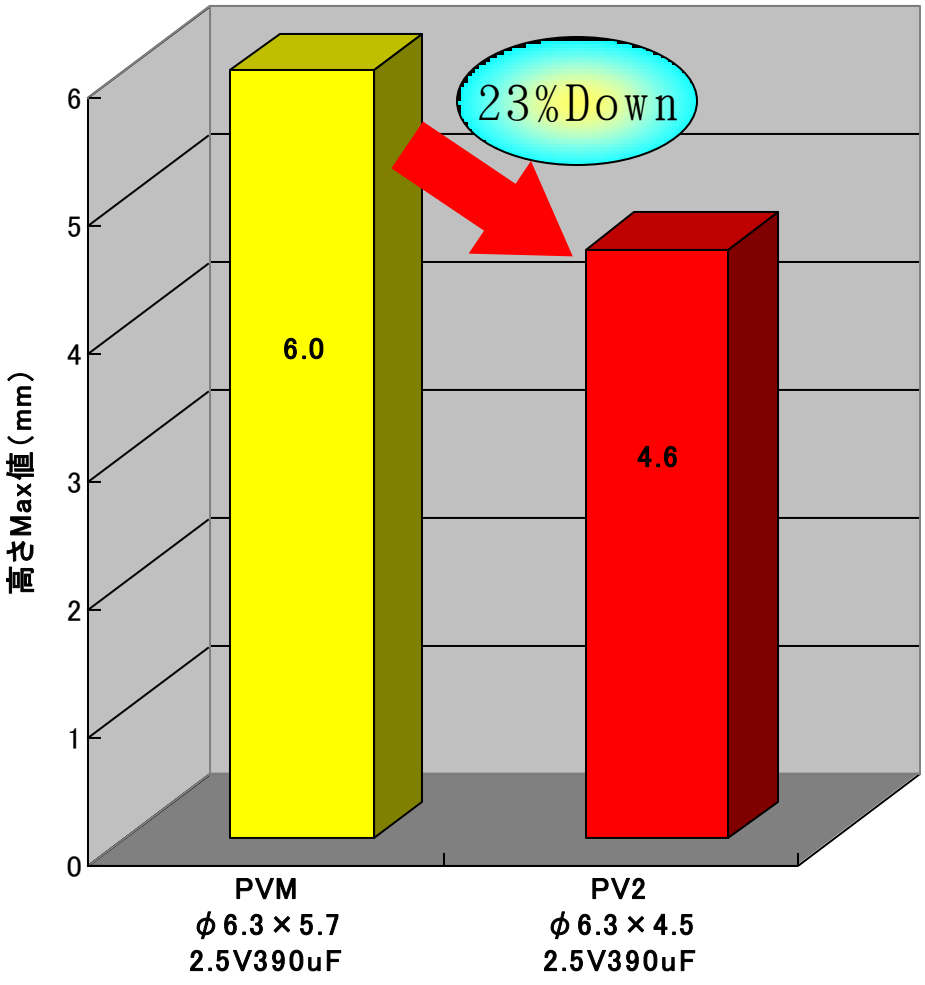
Miniaturized·Low profile

2.5V 390uF





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Road Map of Polymer Aluminum Capacitors

2011

Low ESR
: PVG
6.3X5.7 6mohm

Long Life
: PVM-B
105℃5000h

High Temp.
: PVK
125℃100h

High Voltage
: 2.5～35V

Miniaturization
: PV2
5X4.5 6.3X4.5

2012

Low ESR
: 6.3X5.7 5mohm

Long Life
: 105℃10000h

High Temp.
: 135℃1000h

High Voltage
: 50V ,63V,100V

Miniaturization
: height:3.5mm

2013

Low ESR
: 6.3X5.7 4mohm

Long Life
: 105℃10000h

High Temp.
: 135℃2000h

High Voltage
: 2.5V ～100V

Miniaturization
: height:3.0mm

2014

Low ESR
: 6.3X5.7 4mohm

Long Life
: 105℃20000h

High Temp.
: 150℃1000h

High Voltage
: 120V

Miniaturization
: height:2.0mm

2015

Low ESR
: 6.3X5.7 3mohm

Long Life
: 105℃20000h

High Temp.
: 150℃2000h

High Voltage
: 2.5V ～ 120V

Miniaturization
: height:2.0mm

Low ESR

Long Life

High Temp.

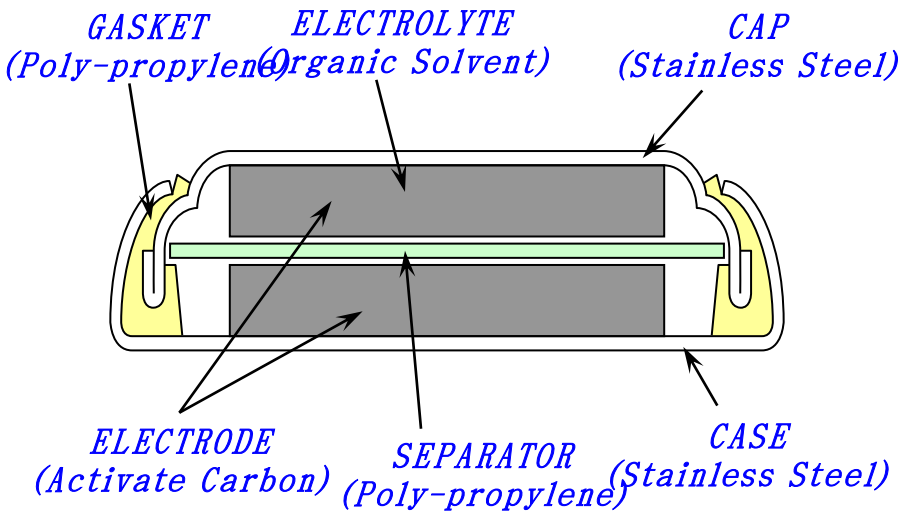
High Voltage

Miniaturization

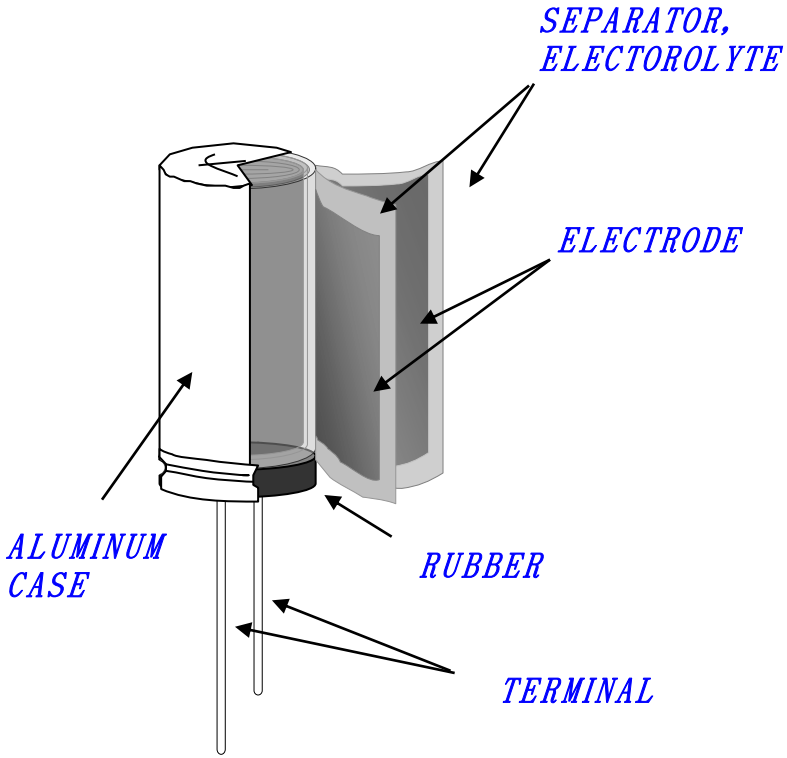
Electric Double Layer Capacitors "DYNACAP"

CONSTRUCTION of DYNACAP

Coin Cell Type



Cylinder Type



DYNACAP SYSTEMIZED CLASSIFICATION

Miniaturized standard
70℃ 1000h
5.5V 0.047F～0.33F
Series **DX**

5mm pitch standard
70℃ 1000h
5.5V 0.047F～1.0F
Series **DB**

High voltage
70℃ 1000h
6.3V 0.047F～1.0F
Series **DK**

High Voltage

High Temperature

High temperature

Low resistance

Coin cell

High temperature
85℃ 1000h
5.5V 0.047F～0.33F
Series **DXJ**

High temperature
85℃ 1000h
5.5V 0.047F～1.0F
Series **DBJ**

Low Resistance
70℃ 1000h
5.5V 0.047F
Series **DBN**

Miniaturized Coin cell
70℃ 1000h
2.5V 0.22F φ6.8×2.1ᵗmm
Series **DC**

High Voltage

High temperature
85℃ 1000h
5.5V 0.047F～1.0F
Series **DH**

High voltage Coin cell
60℃ 1000h
3.3V 0.22F φ6.8×2.1ᵗmm
Series **DCK**

High capacitance

Reflow soldering

Miniaturized

For power
60～70℃
1000～2000h
2.5～2.7V
1F～300F
Series
DZ、DZN、DZH

Reflow Coin cell
New
φ4.8×1.4ᵗmm
3.3V 0.07F Series **DSK**

Reflow Coin cell
φ6.8×2.1ᵗmm 2.5V 0.22F 3.3V 0.22F
φ6.8×1.4ᵗmm 2.5V 0.2F 3.3V 0.2F
Series **DS、DSK**

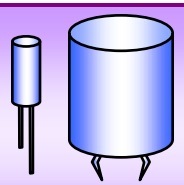
ELNA

ENERGY/POWER CYLINDRICAL SERIES

DYNACAP

DZ

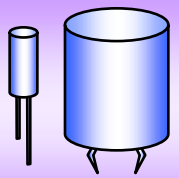
70℃ 1000h
2.5V 1F～200F
φ8×22L～φ35×50L
(300mΩ～20mΩ)
Medium capacitance / Standard



Low Resistance

DZN

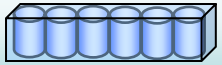
70℃ 1000h
2.5～2.7V 0.7F～120F
φ8×15L～φ35×50L
(200mΩ～10mΩ)
Medium capacitance Low resistance



Packaged Item

DZP

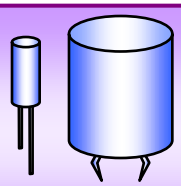
Series-parallel connection



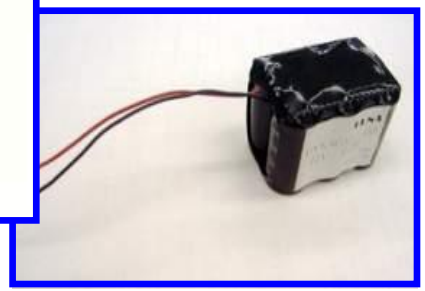
High capacitance

DZ

60℃ 2000h
2.5V 50F～300F
φ18×40L～φ35×50L
(30mΩ～20mΩ)
Large capacitance



Package type



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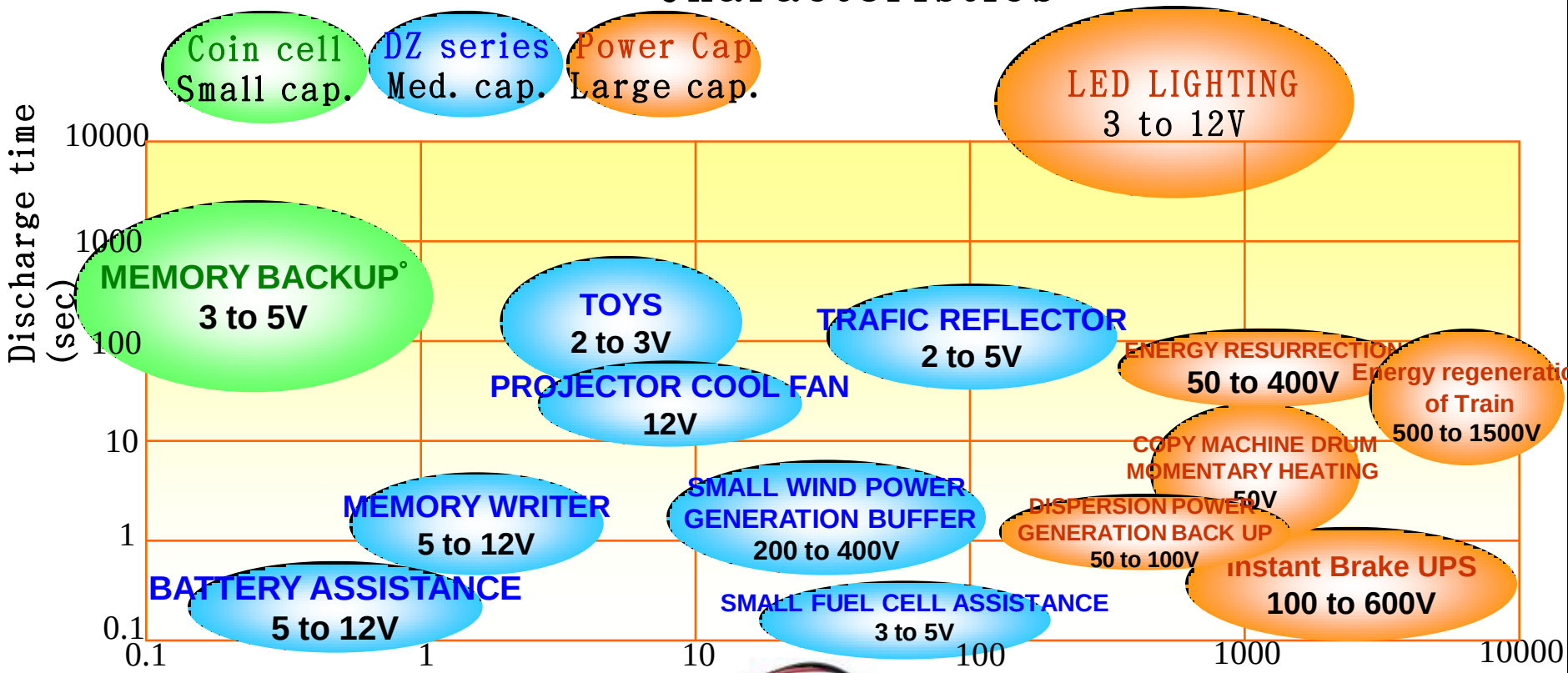
Applications of DLC and the Range of Characteristics



2.5～6.3V
0.047～1F

5.5V 1F

12V 2F

15V 8F

2.5V
450F

2.5V
2.2F

2.5V 10F

2.5V
100F

ELNA

Road Map of Electric Double Layer Capacitors

2011

High capacitance
: Coin Cell, 621
3.3V0.40F(DCK)
: Cylindrical（DZ）,
Miniaturization
φ6.3 2.7V1F

Low ESR
: Multilayer Coin,
-40℃,Low ESR(DHL)
: Cylindrical, Low ESR
0.5ΩF(DZN)

Long Life
: Multilayer Coin, 3.6V85℃2000h

2012

High capacitance
: Multilayer Coin,
85℃1000h 5.5V1.5F(DXJ)
: Cylindrical,
Miniaturization φ5

Low ESR
: Flat type, Low ESR
Laminate type
: Cylindrical,
Super Low ESR 0.2ΩF

Long Life
: Multilayer Coin, 5.5V85℃2000h

2013

High capacitance
: Miniaturization,
Chip Type , SMD
: Cylindrical,
Miniaturization φ4
: Lug terminal, 1000F＜

Low ESR
: Cylindrical, Low ESR
High capacitor（DDN）
: Cylindrical, Miniaturization
Low ESR φ5 0.05ΩF

Long Life
: Multilayer Coin, 5.5V105℃1000h

2014

High capacitance
: DB series,
5.5V1.5F→5.5V2F
: DZ series,
2.5V300F→2.7V400F

Low ESR
: Cylindrical, Low ESR
High capacitor（DDN-2）
: Cylindrical, Miniaturization
Low ESR φ5 0.01ΩF

Long Life
: Multilayer Coin, 5.5V105℃1000h
: Cylindrical, 3V 70℃1000h

2015

High capacitance
: SMD Coin
φ6.3 : 3.3V 0.40F→4.2V0.6F
: DZ series,
2.7V400F → 4V 600F

Low ESR
: Lead type, Low ESR
High capacitor（DDN-3）
: Lead type, Miniaturization
Low ESR φ5 0.005ΩF

Long Life
: Multilayer Coin,
7.2V105℃1000h
: Lead type, 3V 85℃1000h

Long Life
High Voltage
Miniaturization
High Capacitance
Low ESR

ELNA

ありがとうございます！

감사합니다

***T*ak for det ！**

***Grazie molto*！**

***Vielen Dank*！**

***Merci beaucoup*！**

Thank you ！