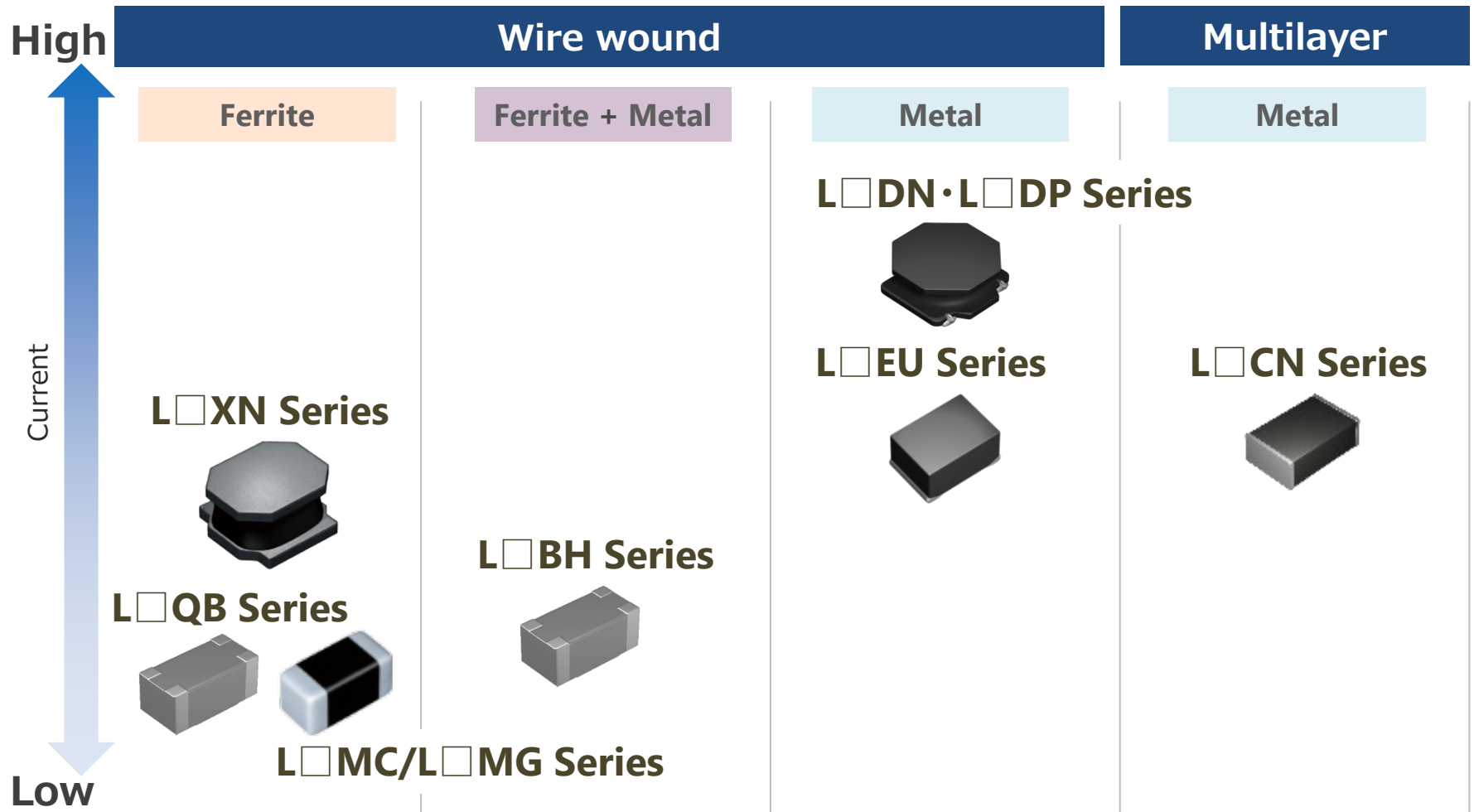


# Inductors

## Unique TAIYO YUDEN Inductor Series

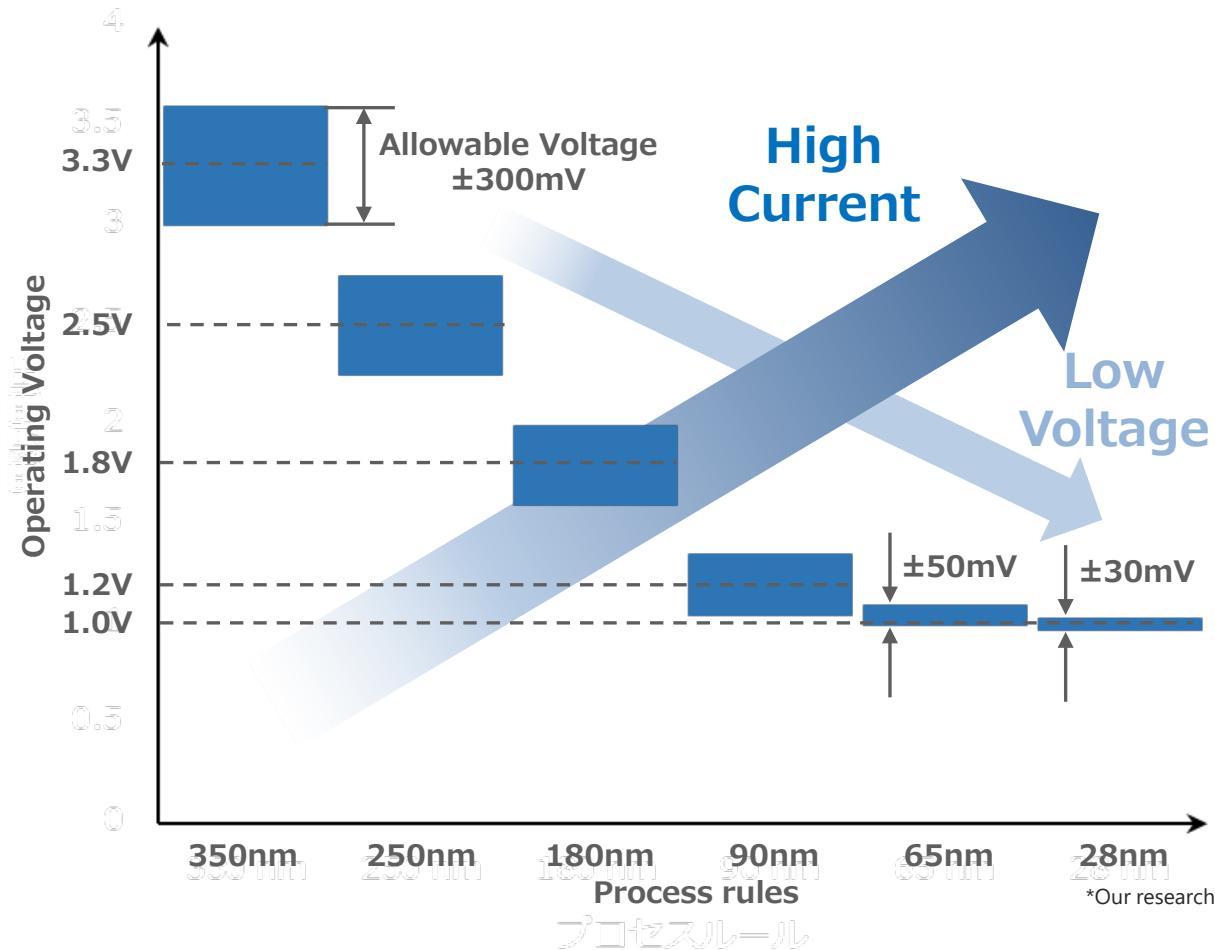


※The characters before "Series" are extracted from the product number and used for representing the classification (e.g., type, characteristics) of the product.  
The second letter of the product series name indicates equipment category.  
(e.g. General Electronic Equipment for Consumer = S)

# Inductors

## 2 Power Inductor Trends

### Transition of Semiconductor Power Supply Voltage



Miniaturization of Semiconductor Process Rules

Compact, Multifunctional and High-Performance

Semiconductor power supply requires **high current** and **low voltage**.

**Compact** and **high current** power inductors are required.

# Inductors

## 3 Issues / Solutions from the current situation

### Issues

High-Performance Compact Electronic Devices.  
⇒ Small size and high current power inductors are required.

### Challenges

- High Current ⇒ Land patterns need to be changed for bigger case sizes.
- Small Size ⇒ Insufficient inductance or saturation current.



### Solution

**Select metal inductors with small size and high current capabilities.**

Next slide..

## 3 Solution

Are you satisfied  
with your inductor ?

Replace ferrite with metal power inductors for better performance.  
Choose the best inductor for your purpose.



POINT.1

Increase Current

x **1.5**  
about

POINT.2

Reduce DCR

- **30%**  
about

POINT.3

Reduce Volume

- **65%**  
about

## 3 Solution

### Option.1

With the Same 4mm Square Size

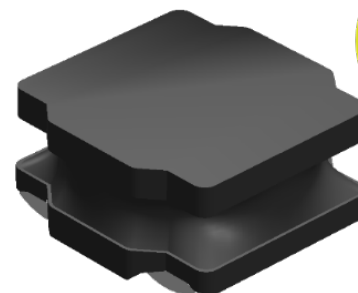
## High Current and Low DCR



### L□XN Series

Ferrite Power Inductor

Isat (max) **3 A** / Rdc (max) **50.4 mΩ**



### L□DP Series

Metal Power Inductor

Isat (typ) **4.5 A** / Rdc (typ) **34 mΩ**

Increase Current

**x1.5**  
about

Reduce DCR

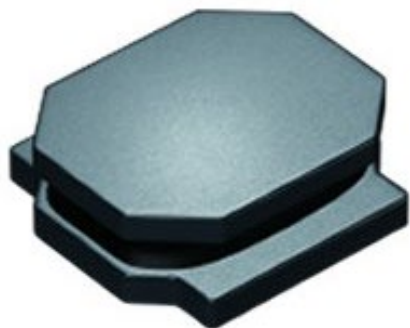
**-30%**  
about

## 3 Solution

### Option.2

With the Same Inductance and Isat

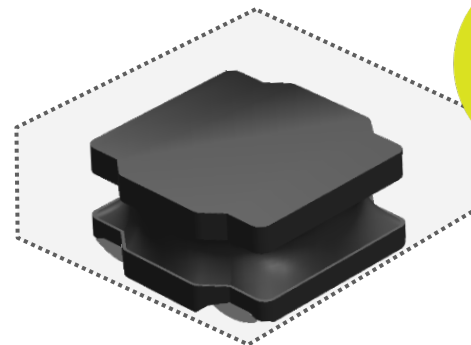
## Miniaturization with Same Spec



**L□XN Series**

Ferrite Power Inductor

Case Size **5.0×5.0×4.1** (mm)



**L□DP Series**

Metal Power Inductor

Case Size **4.0×4.0×2.0** (mm)

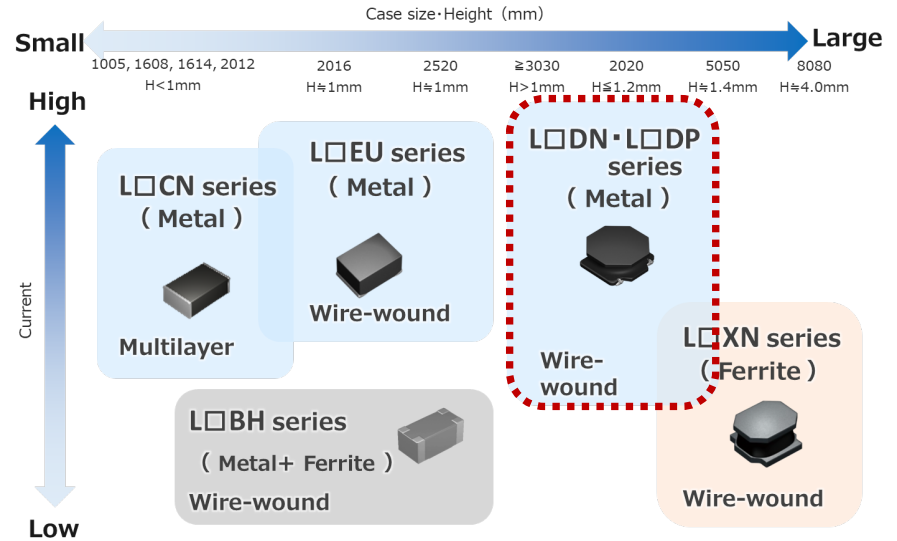
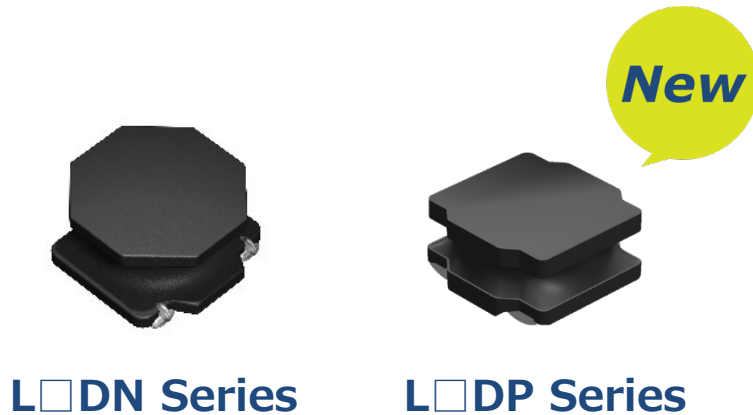
Reduce Volume

about **-65%**

## 3 Solution

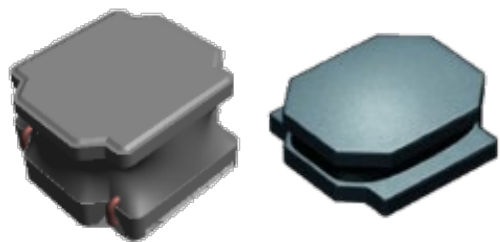
### Wire-Wound Metal Power Inductors L□DN/L□DP Series

L□DN/L□DP series are characterized by high current, small case size, and low profile, with the new magnetic materials that were developed to dramatically improve DC bias characteristics while the existing process of LSXN series power inductors can be used.



Laptop, Tablet, HDD·SDD, TV, Various Electronic Devices / Choke Coils for DC Converter, Filter Circuits.

## 3 Solution



### L□XN Series

Wire-Wound Ferrite Power Inductors



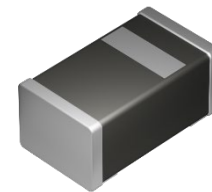
**Compact  
High Current  
Energy Saving**



### L□EU Series

Wire-Wound Metal Power Inductors

**Ultra-Compact  
Low Profile  
Energy Saving**



### L□CN Series

Multilayer Metal Power Inductors



## 3 Solution

# Ultra Small Metal Power Inductor

for Miniaturization / Energy Saving



Case Size **0402inch**

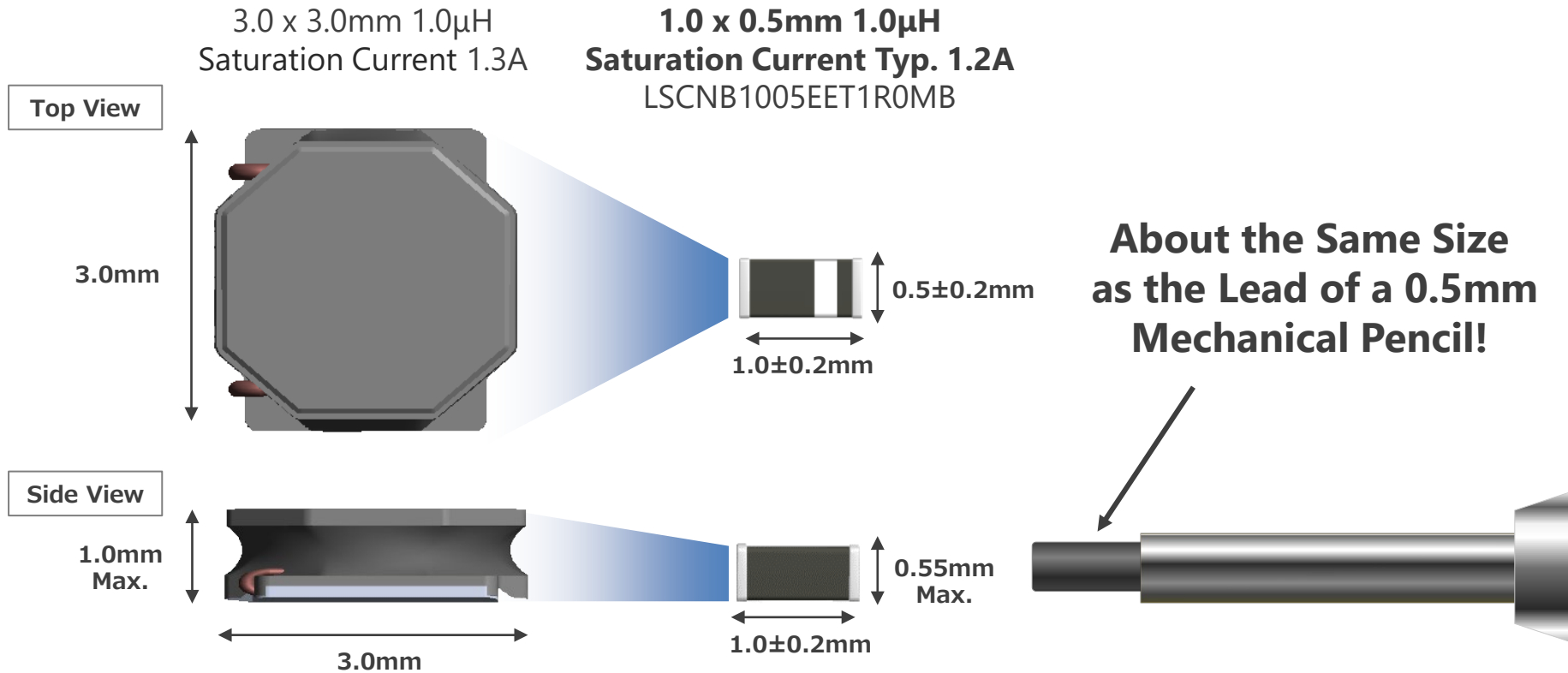
Inductance **1.0 $\mu$ H**

Saturation current **1.0A**

## 3 Solution

**-95% of the Area, -97% of the Volume\***

Compared to Equivalent Ferrite Power Inductors



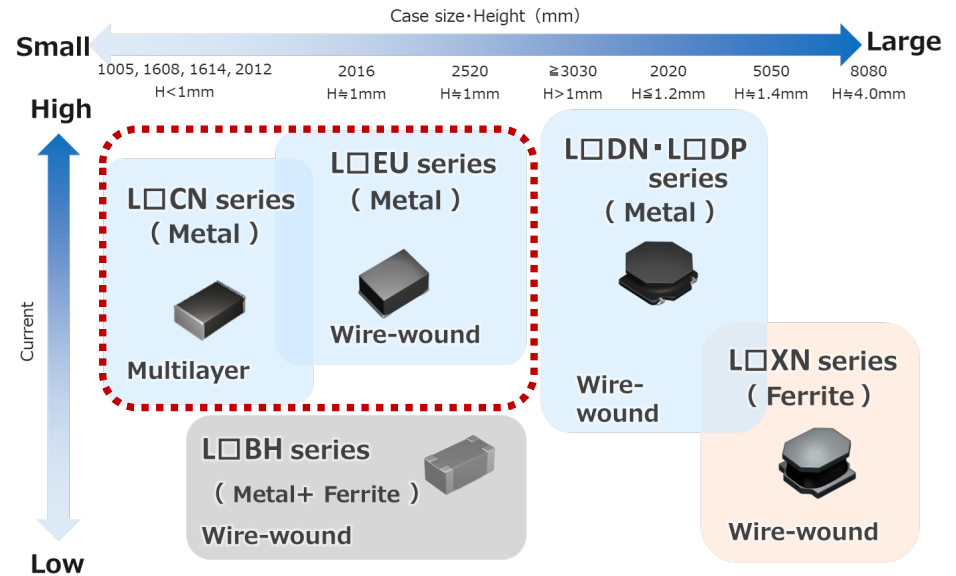
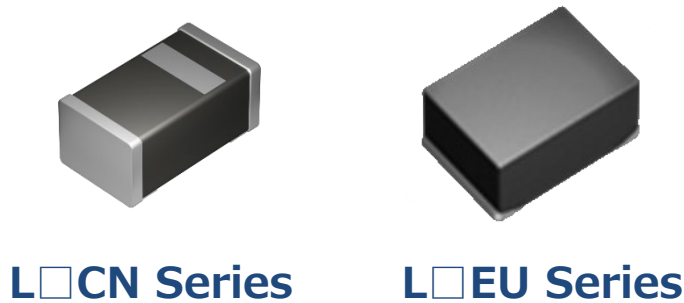
\*Compared to our company

## 3 Solution

### Metal Power Inductors L□CN(Multilayer) /L□EU(Wire-Wound) Series

L□CN series realized high-performance and miniaturization by combining magnetic materials and multilayer structure – the world first method

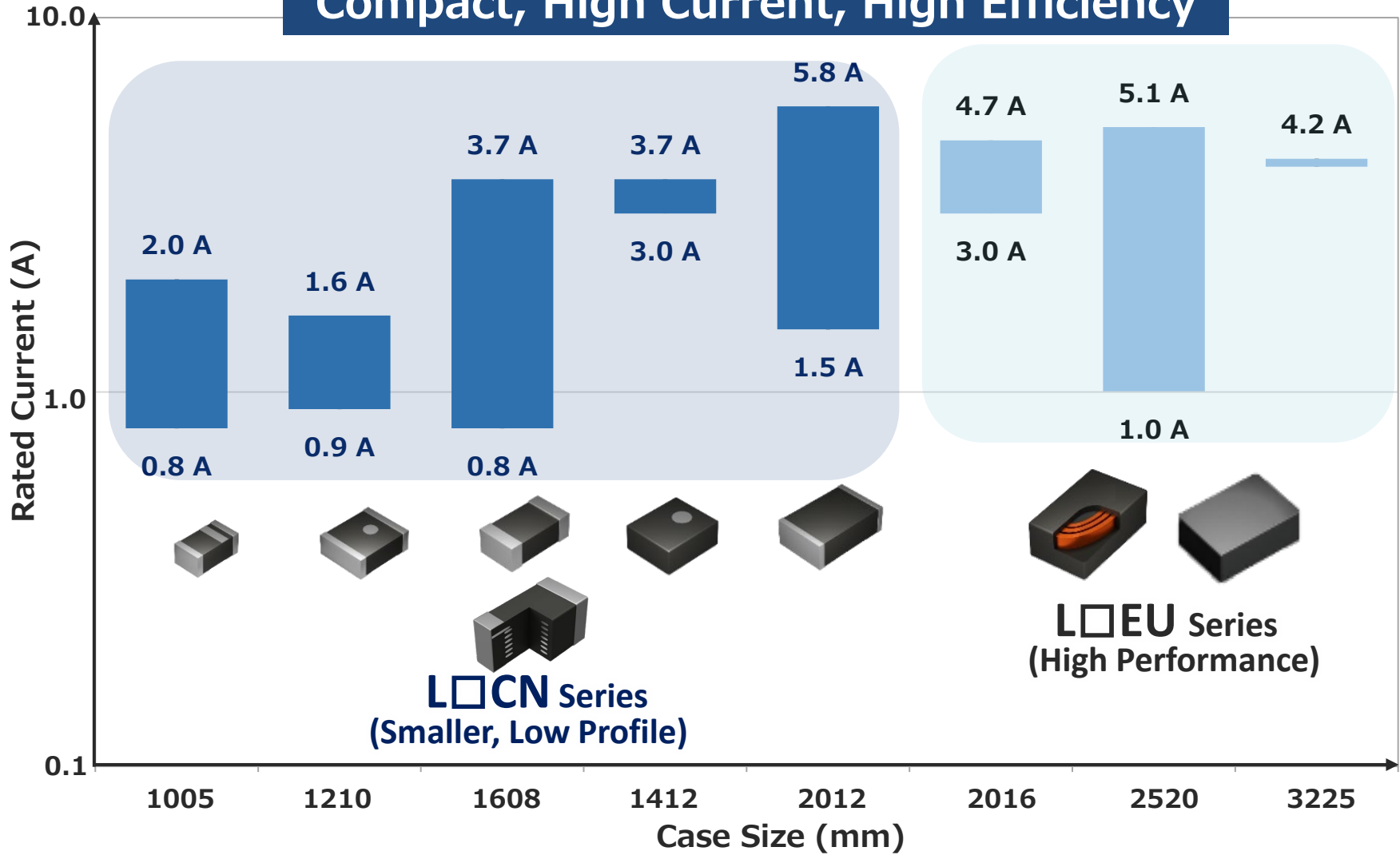
L□EU series realized high current and low DCR by improving metal materials in wire-wound structure



Smartphone, Smart Watch, Wireless Earbuds

## 3 Solution

### Compact, High Current, High Efficiency



# Inductors

## 4 Specifications

Item Number	Case Size (LxW mm)	Height (mm max)	Inductance [μH]	Inductance Tolerance [%]	Rated Current [A max.]		DC Resistance [Ω max.]	Operating Temp. Range [°C]
					Saturation Current [Idc1]	Temperature Rise Current [Idc2]		
L□CNB1005EETR10MB	1.0x0.5	0.55	0.1	± 20	2.0	2.0	0.050	-40 ~ +125
L□CNB1005EETR22MB			0.22	± 20	1.6	1.6	0.080	
L□CNB1005EETR47MB			0.47	± 20	1.2	1.2	0.140	
L□CNB1005EET1R0MB			1.0	± 20	1.0	0.8	0.300	
L□DPD4040WKT1R0MML	4.0x4.0	2.0	1.0	± 20	7.0	6.2	0.018	-40 ~ +125
L□DPD4040WKT1R5MML			1.5	± 20	6.2	4.6	0.031	
L□DPD4040WKT2R2MML			2.2	± 20	4.5	4.5	0.034	
L□DPD4040WKT3R3MML			3.3	± 20	3.6	3.6	0.055	
L□DPD4040WKT4R7MML			4.7	± 20	3.0	2.9	0.076	
L□DPD4040WKT6R8MML			6.8	± 20	2.5	2.4	0.115	
L□DPD4040WKT100MML			10	± 20	2.0	2.0	0.172	

※Idc1 : ΔL= -30% Idc2 : ΔT= +40°C

※Operating Temp. Range : Including-self-generated heat

※Spec will change without notice