Standard Power PBU Overview

July 18, 2022

CH Yeam

Pulse

a YAGEO company

Agenda

- Product Overview of Standard Power PBU
  - Mini Molded
  - Large Molded
- Application Examples
  - Mobile Phones
  - Laptop, Notebook PCs

Pulse – Standard Power PBU

Pulse a YAGEO company

Standard Power

High Volume Standard Magnetic Components for Commercial and Automotive Markets

Mini Molded Inductors

Large Molded Inductors

Resin Shielded Inductors

Drum Core Inductors

RF, Multilayer and Thin Film Inductors

Specialized Power

Design and manufacture specialized power magnetics, coils for AC/DC & DC/DC switch-mode power systems

Power Inductors

Power Transformers

Isolation Transformers

Common Mode Chokes

Current Sense Magnetics

Ignition Coils

Cable Systems

Motor Coils

Solenoids, Actuators & Power Supplies

Wired Comm

Ethernet Magnetics & Connector Modules, Automotive Ethernet CMC & CO Splitters, Filters and Connectors

Ethernet Discrete

Ethernet Modules (ICMs)

Connectors

Telecom

Signal CM Chokes

Wireless Comm

Design, engineering and production of antennas & antenna modules for wireless devices

Embedded

3D Antennas

Internal

External

Outdoor

IPD RF Components (LTCC)

Vehicular

Cables & Mounts

Inductor Manufacturing Processes

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Molded
(Soft Saturation, High Power Density)

Large Molded

- SMT, DIP
- 0303~3030 size, t>1.0 mm
- Upto 100A
- Fully Shielded
- For Automotive, Notebook DCDC

Mini-Molded

- SMT Miniature type
- From 1412 size, t: 0.6mm
- G2 process for high performances
- For Handset, wearable, IoT, DDR5

Wire Wound
(High Inductance, Galvanic Isolation)

Ferrite Inductor

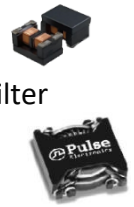
- SMT, DIP
- Flat wire, Round Wire
- Power bead
- For Automotive, Server, Telecom, Industrial

Transformer

- SMT, DIP
- Power Transformer
- Isolation Transformer
- Current Sense Transformer
- For Automotive, SMPS
- SiC/GAN Gate Driver,

Common Mode Choke

- SMT, DIP
- 1210~4532 size
- Power & Signal Lines Noise filter
- For Automotive, SMPS, PoC
- CAN, USB, HDMI



Multi-Layer
(Small Size, Low Cost)

Power Multi-Layer

- SMT
- 0.24uH~4.7uH, upto 4A
- 1608~2520 size, t:>0.6mm
- For handset ,Ultrabook

Thin Film
(Small Size, Thin Profile)

Power Thin-Film

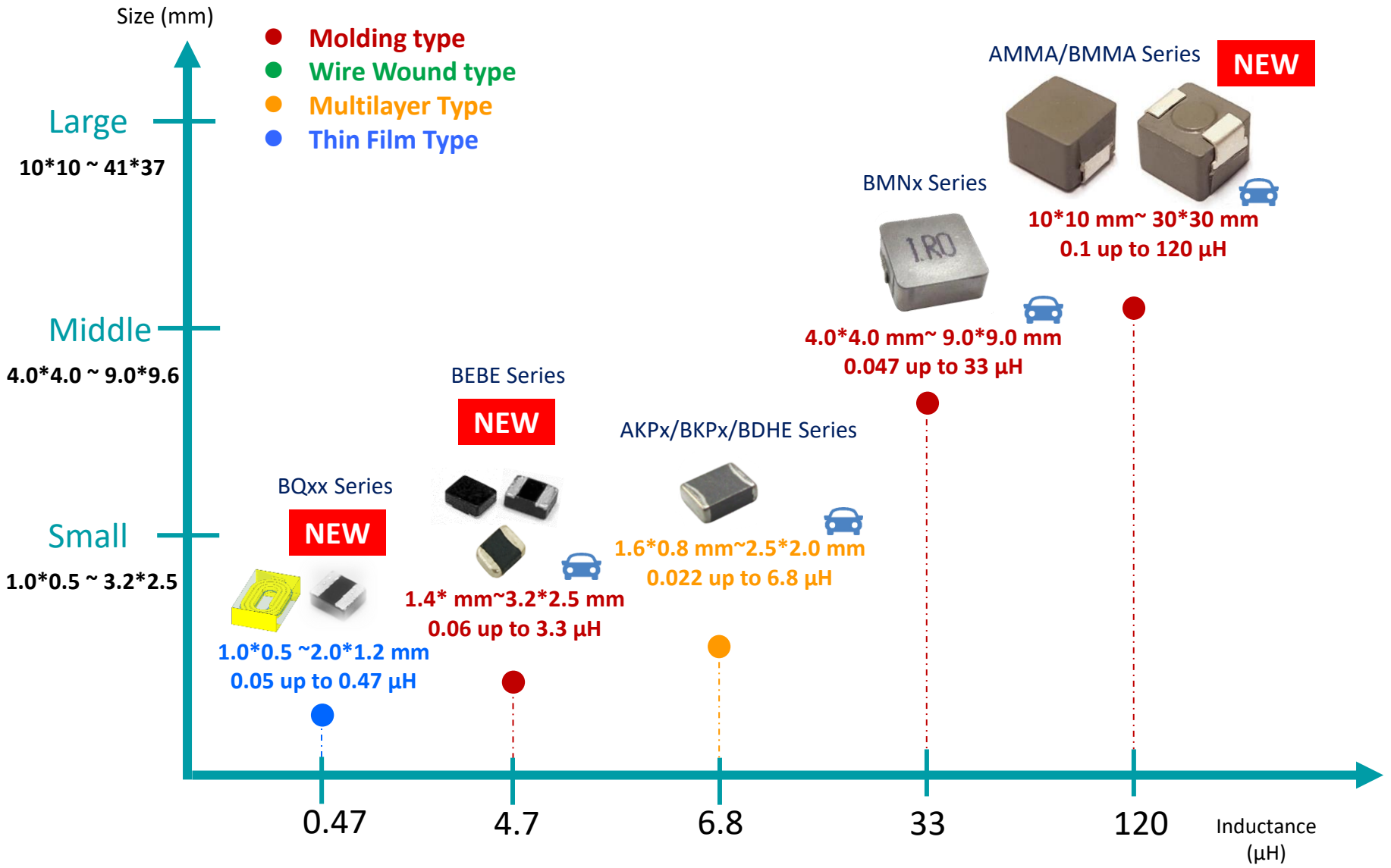
- SMT
- 110nH~470nH, upto 9A
- 1005~2012 size, t:>0.5mm
- New G3 process
- For handset ,Ultrabook DCDC, IoT

In House Material team

Type	Composition	Advantages
Iron	>99% iron	High saturation current
Iron based alloy	FeSiAl FeSi FeSiCr FeNi Amorphous Nano-crystalline	Low DCR Low Core losses High Temp Stability

- Better Quality & Logistic controls

Molded Inductor Line-up



Automotive/Industrial

- PHY (CMM)
- 48V mild
- ECU
- Lighting
- Infotainment
- …

Networking/Datacenter

- V-core
- Memory (DDR5)
- NB-IOT
- 5G
- Connected Car

Handheld/Wearable

- 5G phone
- Watch
- Tablet
- Smart Speaker
- TWS
- Wireless Charging
- …

Mini-Molded Inductors

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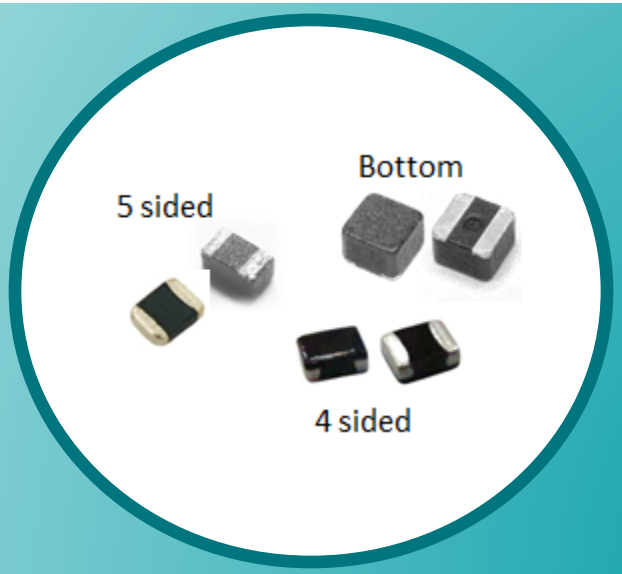
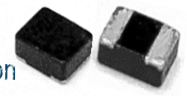
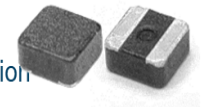
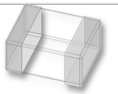
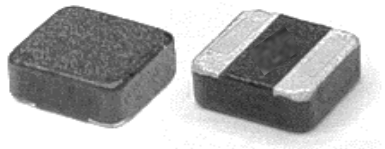


Features:

Size : Standard 1.6 x 0.8 – 3.2 x 2.5 mm
Bottom Terminal 1.4x1.2- 3.2x2.5 mm
Height: 0.6 – 1.2mm
Inductance: 0.1 – 2.2µH
Max. rating current: 10A
Max. saturation current: 14A
~1,600 part numbers available

Series	Feature	Chip Size	Termination	Application
BEBE	• Low resistance • High saturation current • High Irms	• 1412, t=0.65-0.8mm • 2012- 3225, t=0.8-1.2mm	Bottom Termination 	• DC-DC Buck • Smartphone • Notebook • Portable devices • SSD • Server
BESP	• High efficiency • Low core loss • Low resistance	• 4040, t=2.0mm • 3225, 2520, t=1.2mm	Bottom Termination 	
BDQQ	• Low resistance • High saturation current	• 1412, t=0.65-0.8mm	Bottom Termination 	
BDCC	• Half L-Shaped termination • Low resistance • High saturation current	• 2012-2520, t=0.8-1.2mm	L – Shaped Termination 	
BDHH	• High saturation current • Low resistance	• 2012-2520, t=0.8-1.0mm	Five-sided Termination 	
BDHE	• Lower resistance	• 1608-3225, t=0.8-2.5mm	Five-sided Termination 	
BDHL	• Four-Sided termination (Non-termination on the top surface)	• 2016-2520, t=0.8-1.2mm	Four-sided Termination 	

Gen2 Molding Power Inductor



Bottom Terminal

	Higher Performance Inductor					DDR5 Inductor		
Chip Size (mm)	3.2*2.5	2.5*2.0	2.0*1.6	2.0*1.2	1.4*1.2	4.0*4.0	3.2*2.5	2.5*2.0
Chip Height (mm)	0.8	0.8	0.8	0.8	0.65	1.5	1.2	1.2
	1.0	1.0	1.0	1.0	0.8	2.0		
	1.2	1.2						
	1.5							
Inductance (µH)	0.08~2.2	0.22~2.2	0.1~2.2	0.11~1.0	0.11~1.0	0.47~1.2	0.47~0.68	1.0~1.5

2019 – 2022 Bottom Terminal Products

Small footprint / Low profile/ Bottom Terminal

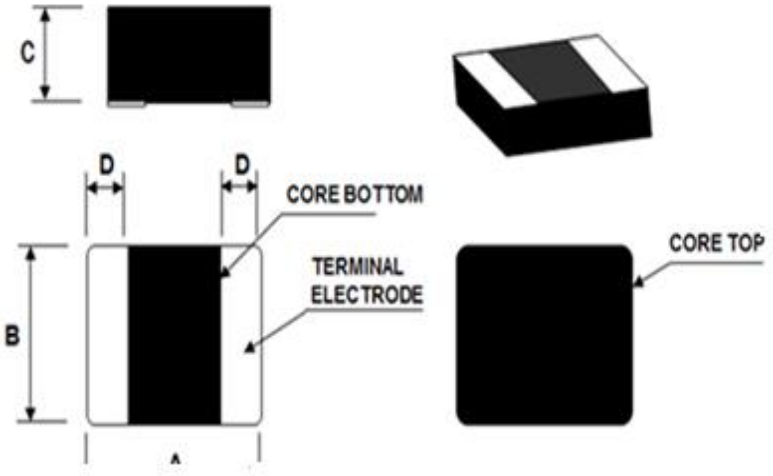
BEBE: Mini Molded with Bottom Terminals

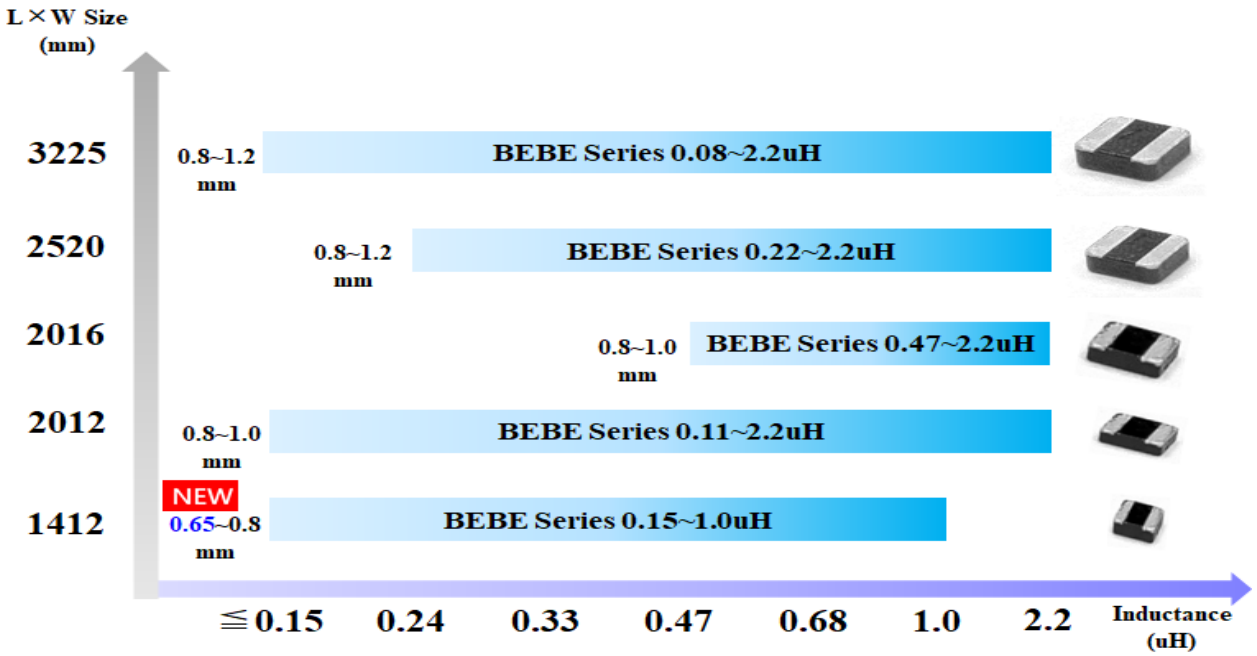
Features:

- Molded structure
- **Flat Wire Winding with low RDC**
- Inductance 0.11uH-2.2uH
- Saturation current upto 15A
- Low Profile, 0.65mm to 2mm
- DCR 13-75mOhms
- Available in 1412,2012,2016,2520,3225 sizes

Applications:

- Smartphone
- Pad, Notebook
- Wearable device
- IoT device
- Miniature DCDC





Bottom Terminals
Occupy Minimum PCB space

- BEBE1412 parts approved by Qualcomm in 2020 & 2022.
- BEBE1412 parts design in MTK in 2021.

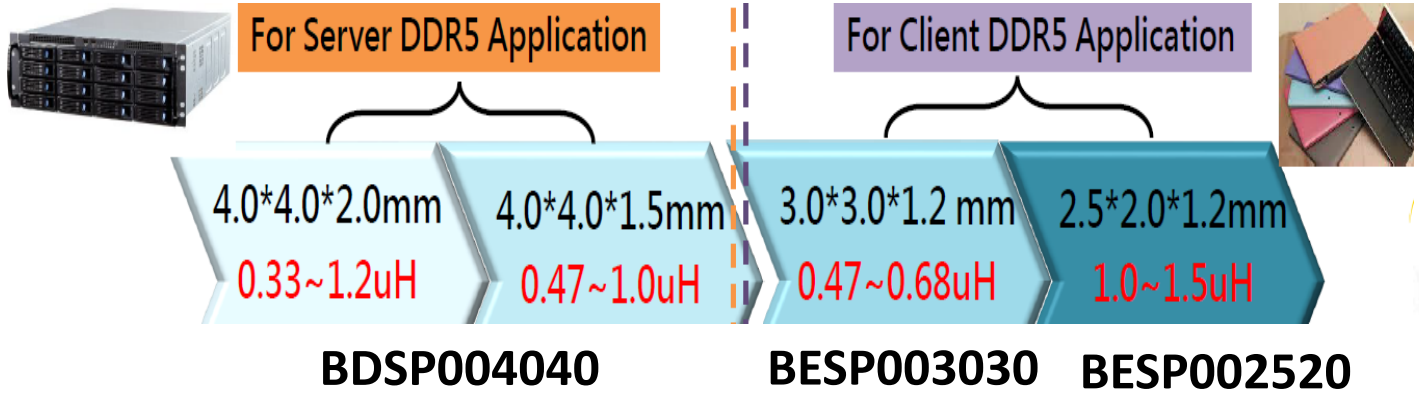
Parts Selection of BEBE Series

Series	thickness (mm)	Part No.	Inductance (uH)	Idc(A) Max(Typ)	Isat(A) Max(Typ)	DCR(mΩ) Max(Typ)
1412	0.65	BEBE001412F5R33MMA	0.33	3.0(3.3)	5.0(5.5)	32(26)
		BEBE001412F5R47MMA	0.47	2.6(2.9)	3.0(3.3)	42(35)
	0.8	BEBE00141208R24MMA	0.24	5.3(5.8)	6.5(7.1)	21.5(18.6)
		BEBE00141208R33MMA	0.33	4.0(4.5)	5.0(5.5)	25(23)
		BEBE00141208R33MMS	0.33	3.6(4.0)	5.5(6.0)	25(23)
		BEBE00141208R47MMA	0.47	3.3(3.6)	4.5(5.0)	29(27)
		BEBE00141208R47MMS	0.47	3.0(3.3)	4.8(5.0)	29(27)
		BEBE001412081R0MMA	1.0	2.3(2.6)	2.5(2.8)	75(70)
2012	0.8	BEBE00201208R11MMA	0.11	6.5(7.0)	8.6(9.1)	12(10)
		BEBE00201208R24MMA	0.24	6.0(6.5)	7.9(8.3)	20(17)
		BEBE00201208R33MMA	0.33	4.5(4.9)	5.3(5.5)	23(19)
		BEBE00201208R47MMA	0.47	4.0(4.4)	4.8(5.3)	25(20)
		BEBE002012081R0MMA	1.0	3.1(3.5)	3.3(3.8)	50(42)
	1.0	BEBE00201210R33MMA	0.33	4.7(5.3)	6.0(6.5)	20(18)
		BEBE00201210R47MMA	0.47	4.2(4.7)	5.0(5.5)	24(21)
2016	0.8	BEBE00201608R47MMA	0.47	4.5(4.9)	4.7(5.2)	24(21)
		BEBE002016081R0MMA	1.0	4.0 (4.5)	3.6 (4.1)	35 (30)
		BEBE002016082R2MMA	2.2	2.3 (2.6)	2.7 (3.0)	90 (80)
	1	BEBE00201610R47MMA	0.47	4.5(5.0)	5.7(6.1)	20(18)
		BEBE002016101R0MMA	1.0	4.1(4.5)	4.2(4.6)	43(35)

Series	thickness (mm)	Part No.	Inductance (uH)	Idc(A) Max(Typ)	Isat(A) Max(Typ)	DCR(mΩ) Max(Typ)
2520	1.0	BEBE00252010R47MMA	0.47	5.9(6.5)	6.5(7.2)	15(13)
		BEBE00252010R68MMA	0.68	5.0(5.5)	5.5(6.0)	18.5(16.0)
		BEBE002520101R0MMA	1.0	5.2(5.7)	5.0(5.5)	25(18)
		BEBE002520102R2MMA	2.2	2.6(2.9)	2.5(3.0)	77(70)
	1.2	BEBE00252012R22MMB	0.22	8.0(8.5)	9.0(9.5)	13(10)
		BEBE00252012R47MMB	0.47	6.0(6.3)	5.9(6.5)	23(18)
		BEBE002520121R0MMB	1.0	4.2(5.0)	4.3(4.9)	32(27)
3225	0.8	BEBE0032250880NMMA	0.08	8.0(9.0)	14.5(15.5)	4.2(3.9)
	1.0	BEBE00322510R22MMA	0.22	7.0(7.5)	10(11)	12.5(10.5)
3030	1.2	BEBE003030121R0MMA	1.0	5.3(5.8)	6.3(6.8)	30.0(27.0)

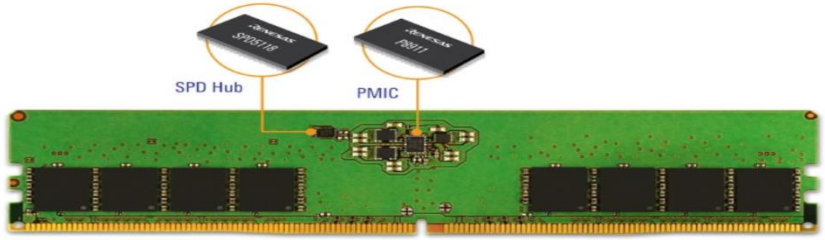
2022/03 Updated

Power Supply for DDR5

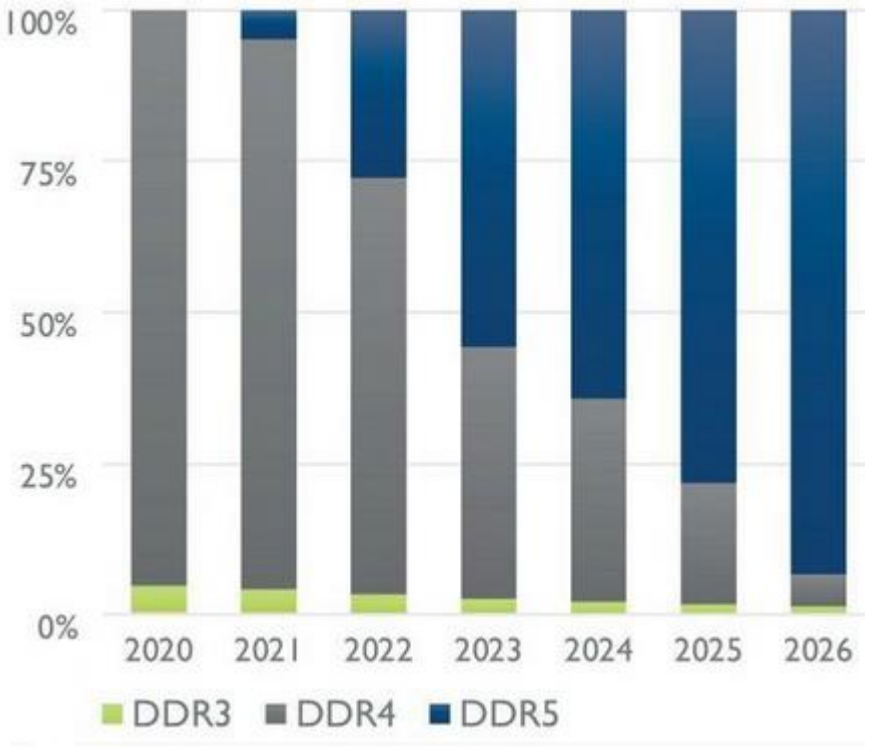


Chilisin's Benefits:

- Member of JEDEC DDR5 committee, which draft the specifications
- Products that provide extremely low RDC and core losses
- Full range Inductance , Saturation current products
- Support Server and Client Applications



Market Forecast: DDR5 will overtake DDR4 shipments by 2023



BDSP / BESP Series: DDR5 Inductors

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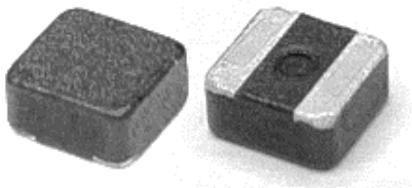
Features:

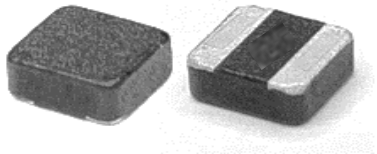
- Molded structure
- Inductance 0.47uH-1.5uH
- Saturation current 10A
- Low ACR for High efficiency at light load
- Low DCR for High efficiency at heavy load
  - 4.5-12mOhms for BDSP
  - 10-32mOhms for BESP
- Available in 4x4, 3.2x2.5, 2.5x2.0
- Compliance to Jedec specifications

Applications:

- Servers
- Smartphones
- Notebooks
- SSD Memory Modules



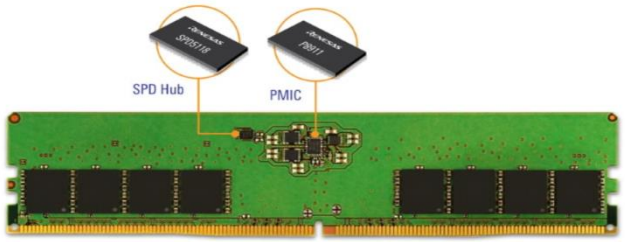
4.0x4.0x2.0 (Server DDR5)



2.5x2.0, 3.2x2.5 (Client DDR5)

Series	Size L x W (mm)	Inductance (µH)	Irms(A) Max.	Isat(A) Max.	DCR(mΩ) Max.
BDSP (Server DDR5)	4.0 x 4.0	0.47	10.5	9.2	4.5
		0.68	9.5	8.0	6.2
		1.0	8.3	6.0	9.5
		1.2	6.0	5.0	12.0
BESP (Client DDR5)	3.2 x 2.5	0.47	6.3	5.6	10.0
		0.68	5.8	4.2	11.5
	2.5 x 2.0	1.0	4.7	3.0	22.0
		1.5	3.9	2.4	32.0

JEDEC®

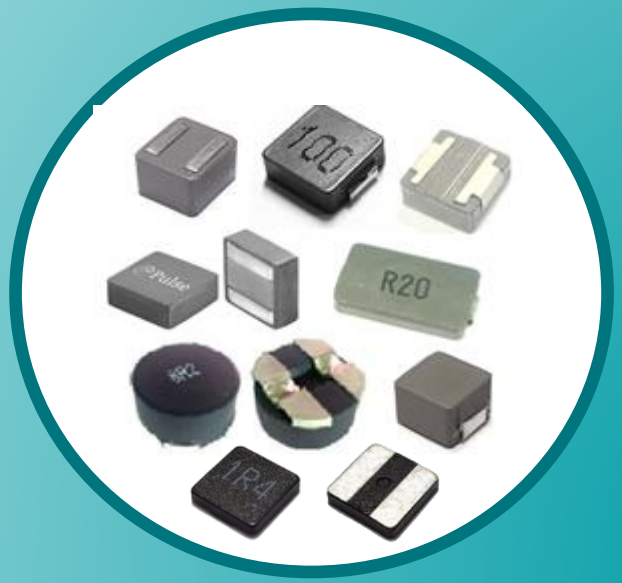


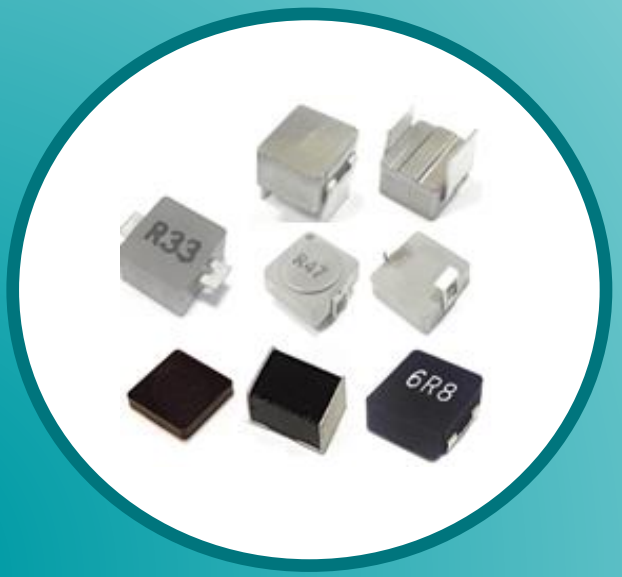
Mini-Molded Cross Reference

Pulse a YAGEO company

Type	Size (mm)	PULSE (Chilisin)	CYNTEC	TAIYO YUDEN	SEMCO
High Performance Inductor	1.4*1.2*0.80 1.4*1.2*0.65	BEBE BDBE	HTEL	MCFE	CIGT
	2.0*1.2*0.8 2.0*1.2*1.0	BEBE	HTQL	MEHK	CIGT
			HTQH	MEKK	
	2.0*1.6*0.8 2.0*1.6*1.0	BEBE	HTQL	MEHK	CIGT
			HTQH	MEKK	
	2.5*2.0*1.0 2.5*2.0*1.2	BEBE	HTQL	MEHK	CIGT
			HTQH	MEKK	
	3.2*2.5*0.8 3.2*2.5*1.0 3.2*2.5*1.2	BEBE	HTQP	MEHK	CIGT
DDR5 Inductor	2.5*2.0*1.2	BESP	HTTD	MEMK	CIGW
	3.2*2.5*1.2	BESP	HTTD	MEMK	CIGW
	4.0*4.0*2.0	BDSP	HTTD	MEMK	CIGW

Large Molded Inductors





Features:

- Size: 4x4mm - 30x30mm
- Height: 1 - 10mm
- Inductance: 0.047µH - 47µH
- Traditional & Bottom terminal type
- Rating current: up to 55A
- Saturation current: up to 118A
- >2,800 part numbers
- >400 automotive parts

Special Designs:

- Stilted package for space saving
  - 4*4mm -12*12mm
- Sunk Package for Low profile
  - 1mm-1.2mm
- Coating for Corrosive/Flame Resistance
  - UV94V0,
  - 4*4mm – 17*17mm
- Custom Designs

Special Packages

Pulse
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Stilted series

- Saving space
- Shrink product size
- 4x4mm - 12x12mm

Sunk series

- Saving height
- 4x4mm - 10x10mm

Bottom Terminal

- Saving PCB saving
- Low DCR

Functional coating

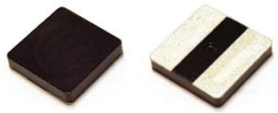
- UL94 V0
- Chemical resistant

Others

- High Power
- Higher Vibration withstand

Capability to customize such as form, fit and function.

Parts Selection

Series	AMMA, BMMA	AMNI, BMNI AMME, BMME	AMII, BMII	AMBI, BMBI	AMHP AMHT
Photo					
Features	• Standard part • Most common application	• Lower DCR & higher current • Low profile, Boost converter of LED driver New Release	• Lower DCR and higher Isat • High current DC to DC converter New Release	• Bottom termination • Low profile • Lowest DCR New Release	• Up to 70V rating voltage • Up to 180°C operating temperature • For Automotive Applications

BMM_/BMN_ High Inductance Series

New Release

Description

Low profile & High inductance molded power inductor

Features

Inductance up to 10µH
1.0/1.2mm height

Available part

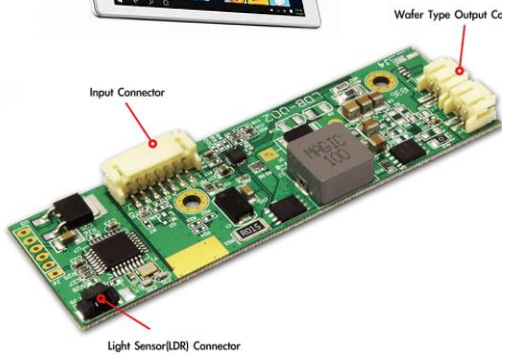
4 x 4 x **1**mm, 4 x 4 x **1.2**mm,
4.7µH-10µH

Part number	L*W(mm*mm)	H(mm)	L0(µH) ±20%	DCR(mΩ)		Irms(A)		Isat(A)	
				Typ	Max	Typ	Max	Typ	Max
BMNI000404104R7MQX	4.1*4.1	1.0	4.7	135	160	2.6	2.3	2.5	2.1
BMNI000404106R8MQX	4.1*4.1	1.0	6.8	210	255	2	1.8	2.3	1.85
BMNI00040410100MQX	4.1*4.1	1.0	10	280	336	1.75	1.5	1.85	1.65
BMNI000404124R7MEX	4.1*4.1	1.2	4.7	94	113	2.9	2.6	2.5	2.2
BMNI00040412100MEX	4.1*4.1	1.2	10	200	240	1.8	1.6	1.6	1.4
BMME000404124R7MEX	4.4*4.2	1.2	4.7	124	145	2.4	2.1	3.2	2.8
BMME000404126R8MEX	4.4*4.2	1.2	6.8	300	355	1.7	1.5	2.7	2.3

BMM_ BMN_

Application

- DC/DC converter for CPU in Notebook PC
- Thin type on-board power supply module for exchanger
- Voltage Regulator Module (VRM)
- Boost converter of LED driver



VRM

LED driver

AFSI Series – Low RDC Molded Inductor

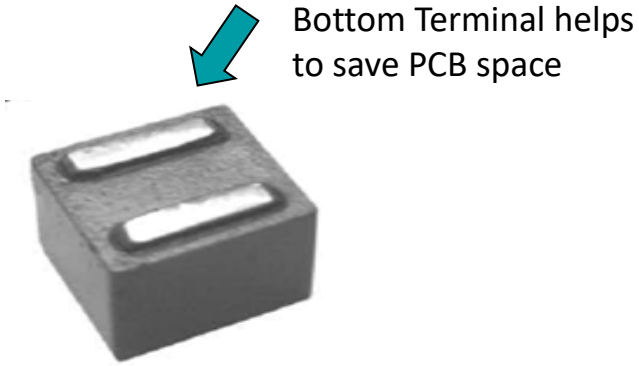
Pulse a YAGEO company

Features:

- Molded structure
- **Flat Wire Winding, extreme low RDC**
- Inductance 0.68uH-15uH
- Saturation current upto 65A
- Available in 9*9*8mm and 12*11*8.8mm
- High profile , occupy minimize PCB space
- **Operating Temp -40C to 155C**

Applications:

- LED Lighting
- Inverter, Motor Drive
- Noise Filter



Product Overview (partial list)

Part Number	Dimensions (mm)	L (uH) @100KHz	RDC(Max) (mOhm)	Isat(Typ) (A)	Irms(Typ) (A)
AFSI00090908R68M05	9.3*9.0*8.1	0.68	2	38	36
AFSI000909081R0M05	9.3*9.0*8.1	1.00	2.5	31	34
AFSI000909082R2M05	9.3*9.0*8.1	2.20	3.8	24	25
AFSI000909084R7M05	9.3*9.0*8.1	4.70	8.5	17.5	15
AFSI00090908100M05	9.3*9.0*8.1	10.00	15.5	11	10
AFSI00121109R47M05	12*11*8.8	0.47	1.5	65	50
AFSI00121109R47M05	12*11*8.8	1.00	2	45	40
AFSI001211092R2M05	12*11*8.8	2.20	2.4	30	30
AFSI001211094R7M05	12*11*8.8	4.70	6.2	23	20
AFSI00121109100M05	12*11*8.8	10.00	12	17.5	13

AMHP Series – High Voltage Molded Inductor

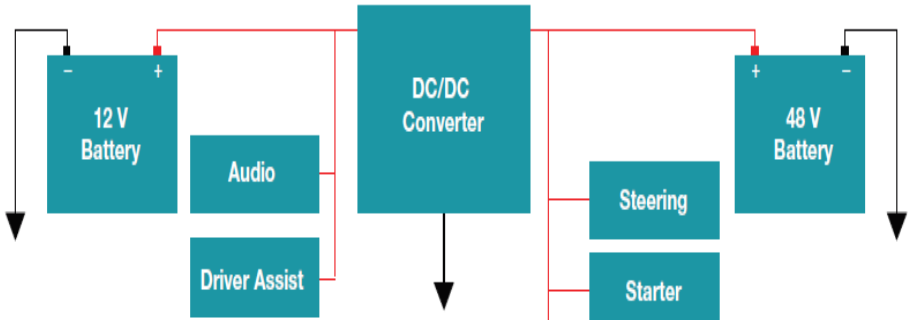
Features:

- Molded structure
- Inductance 0.68uH to 22uH
- High Saturation current
- 70V Withstand voltage
- Low DCR
- Available in 6*6mm, 10*10mm
- Compliant to AEC-Q200 Level 0

Applications:

- Automotive DCDC
- Automotive Lighting
- Battery Charger
- 48V Mild Hybrid System

Part number	L	DCR max	Irms	Isat
	(µH)	(mΩ)	(A)	(A)
AMHP00060630R68MM1	0.68	5.7	13.2	20.2
AMHP000606301R0MM1	1	6.82	12.1	16
AMHP000606301R5MM1	1.5	12.1	9.1	14.2
AMHP000606302R2MM1	2.2	16	7.9	12.8
AMHP000606303R3MM1	3.3	26.5	6.1	11.5
AMHP000606304R7MM1	4.7	31.9	5.6	9.8



48V/12V Bidirectional DCDC
Source: Texas Instruments

AP3Y Series – Ultra High Current Molded

Features:

- Molded structure
- Extremely Low RDC
- Inductance 1uH – 68uH
- **Saturation current upto 100A**
- Available in 15*15 mm and 30*30mm
- Operating Temp -40C to 125C
- THT version available

Applications:

- Automotive, OBC, Filter
- Inverter, Energy Storage
- Battery Charger

15.7*15.0mm

29.5*29.5mm

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
AP3Y001515101R0M00	1	100kHz,1V	1.8	100	44	20	1R0
AP3Y001515101R5M00	1.5	100kHz,1V	2.1	95	38	20	1R5
AP3Y001515102R2M00	2.2	100kHz,1V	2.7	70	36	20	2R2
AP3Y001515103R3M00	3.3	100kHz,1V	3.5	50	32	20	3R3
AP3Y001515104R7M00	4.7	100kHz,1V	5.2	45	28	20	4R7
AP3Y00151510100M00	10	100kHz,1V	8.5	32	21	20	100
AP3Y00151510150M00	15	100kHz,1V	11.5	30	18	20	150
AP3Y00151510220M00	22	100kHz,1V	16.8	24	14	20	220
AP3Y00151511330M00	33	100kHz,1V	28	19	10	20	330
AP3Y00151513470M00	47	100kHz,1V	38	17	9	20	470
AP3Y00151513680M00	68	100kHz,1V	61	16	7	20	680

Part No.	Inductance (uH)	Test Freq.	RDC (mΩ)Max	Isat (A)Typ.	Irms (A)Typ.	Tolerance (±%)	Marking
AP3Y002828168R2M00	8.2	100kHz,1V	4	85	40	20	8R2
AP3Y00282816100M00	10	100kHz,1V	5.5	62	37	20	100
AP3Y00282816150M00	15	100kHz,1V	7.5	55	32	20	150
AP3Y00282816220M00	22	100kHz,1V	11.5	46	25	20	220
AP3Y00282816330M00	33	100kHz,1V	16	44	20	20	330

BMBI XL Series

New

BMBI XL Competitor

Features

- Cross *GL series
- Same footprint & electrical specification
- 4x4 - 7x7mm
- Sample L/T 6 weeks (typ.)

Part number	Inductance (µH)	DCR (mΩ)	Isat (A)
Specification	1±20%	9.0 max.	<30%@8.8A
BMBILE0404211R0MXL	~1.057	~8.54	~22.3%
*GL4020-102**	~0.927	~8.40	~29.9%

Cross Reference: Large Molded Inductor

Pulse a YAGEO company

Size(mm)	PULSE (Chilisin)	CYNTEC	Vishay	Coilcraft	TAI-TEHC
4.x * 4.x	BMBx			XAL XEL XGL	TMPC
	BMNx				
	BMMx	PCMB	IHLP		
		PCME			
		CMLB			
		CMLE			
		CMLS			
5.x * 5.x	BMBx	HBTD		XAL XEL XGL	TMPC
	BMNx				
	BMMx	PCMB	IHLP		
		PCME			
		CMLB			
		CMLE			
		CMLS			
6.x * 6.x	BMBx			XAL XEL XGL	TMPC
	BMNx				
	BMMx	PCMB	IHLP		
		PCME			
		CMLB			
		CMLE			
		CMLS			

Size(mm)	PULSE (Chilisin)	CYNTEC	Vishay	Coilcraft	TAI-TEHC
8.x * 8.x	BMMx	PCMB	IHLP		
		PCME			
		CMLB			
		CMLE			
		CMLS			
10.x * 10.x	BMMx	PCMB	IHLP		
		PCME			
		CMLB			
		CMLE			
		CMLS			
12.x * 12.x	BMMx	PCMB	IHLP		
		PCME			
		CMLB			
		CMLE			
		CMLS			
16.x * 16.x	BMNx			XAL	
17.x * 17.x	BMMx		IHLP		

Note: Including all Bourn's, Wurth's inductors

Product Roadmap - Large Molded

System Design Trends:

- Low AC and DC losses → High efficiency, Shrink product size
- High withstand voltage → Meets EV design requirements
- High Operating Temperature → High stability under all operating conditions

	2021	2022	2023	2024
AC loss	-20%	-20%	-20%	-20%
DC loss	-5%	-5%	-5%	-5%
Rating voltage	70V	150V	200V	200V+
Operating temp.	180°C	190°C	200°C	200°C+

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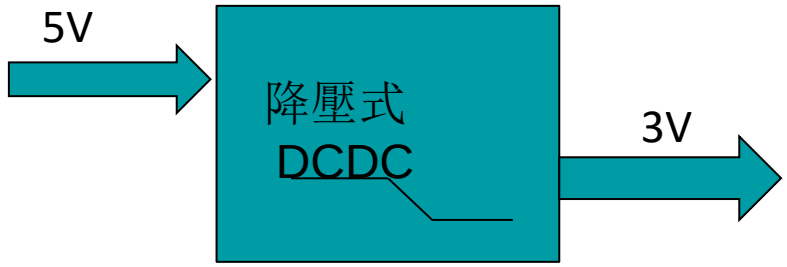
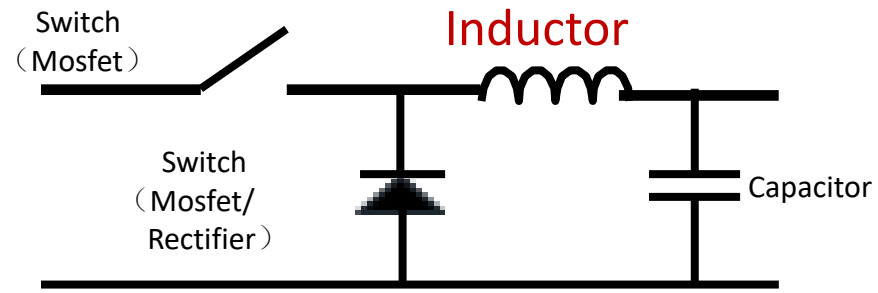
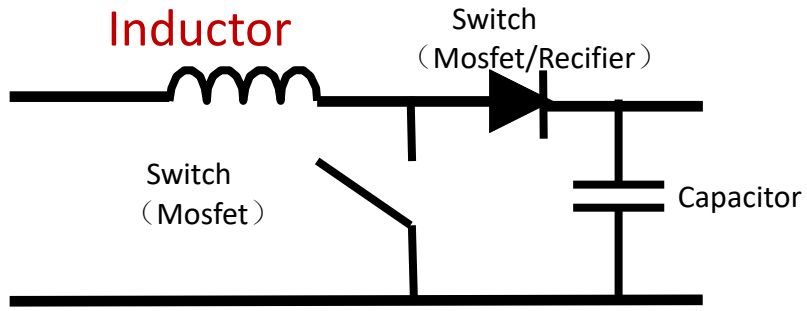
Application Examples

What is DC-DC ?

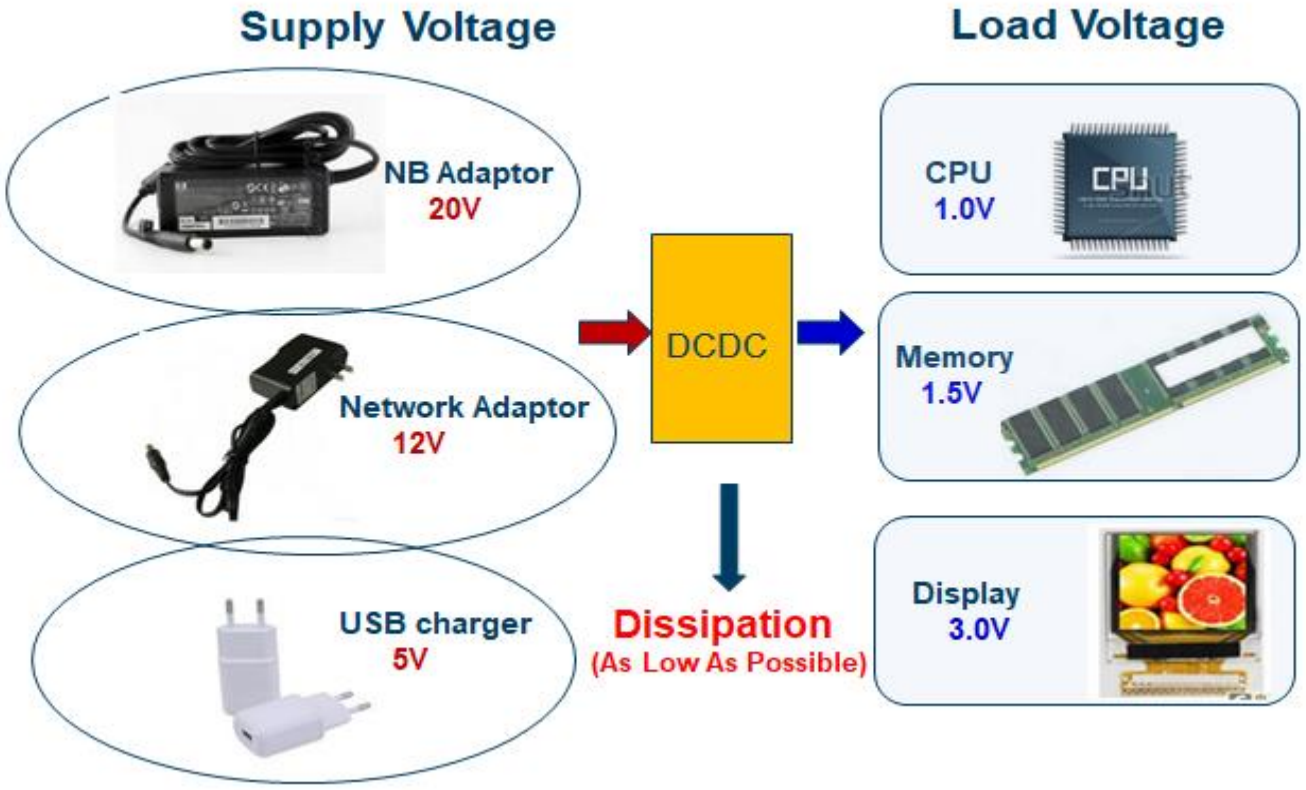
- DCDC converts one DC voltage to another
- Types of DCDC
  - Buck (Step down, Vout < Vin)
  - Boost (Step up, Vout > Vin)

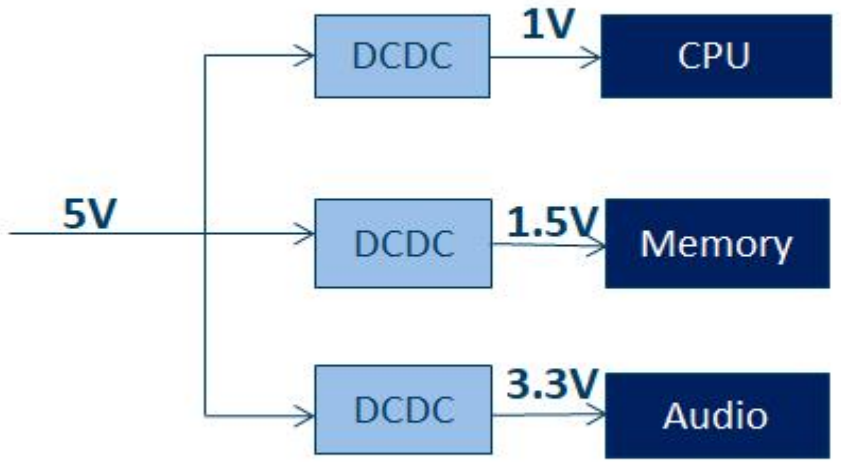




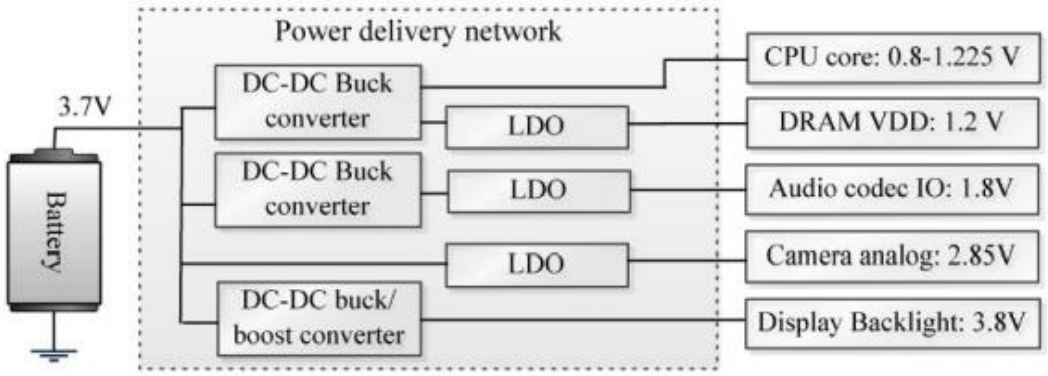


DCDC Applications





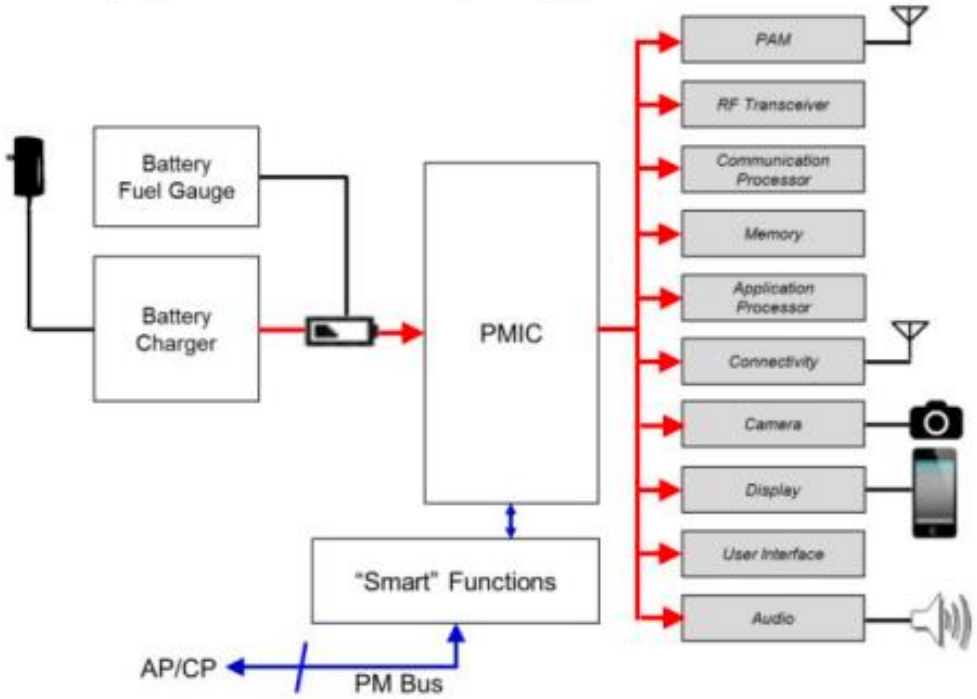
Mobile Phone Applications



Power Management for Different Functions

Design Requirements:

1. High Efficiency for Long battery time
2. Small size and occupy minimum PCB space
3. Input voltage : single Li-ion cell, 3.0V-4.2V



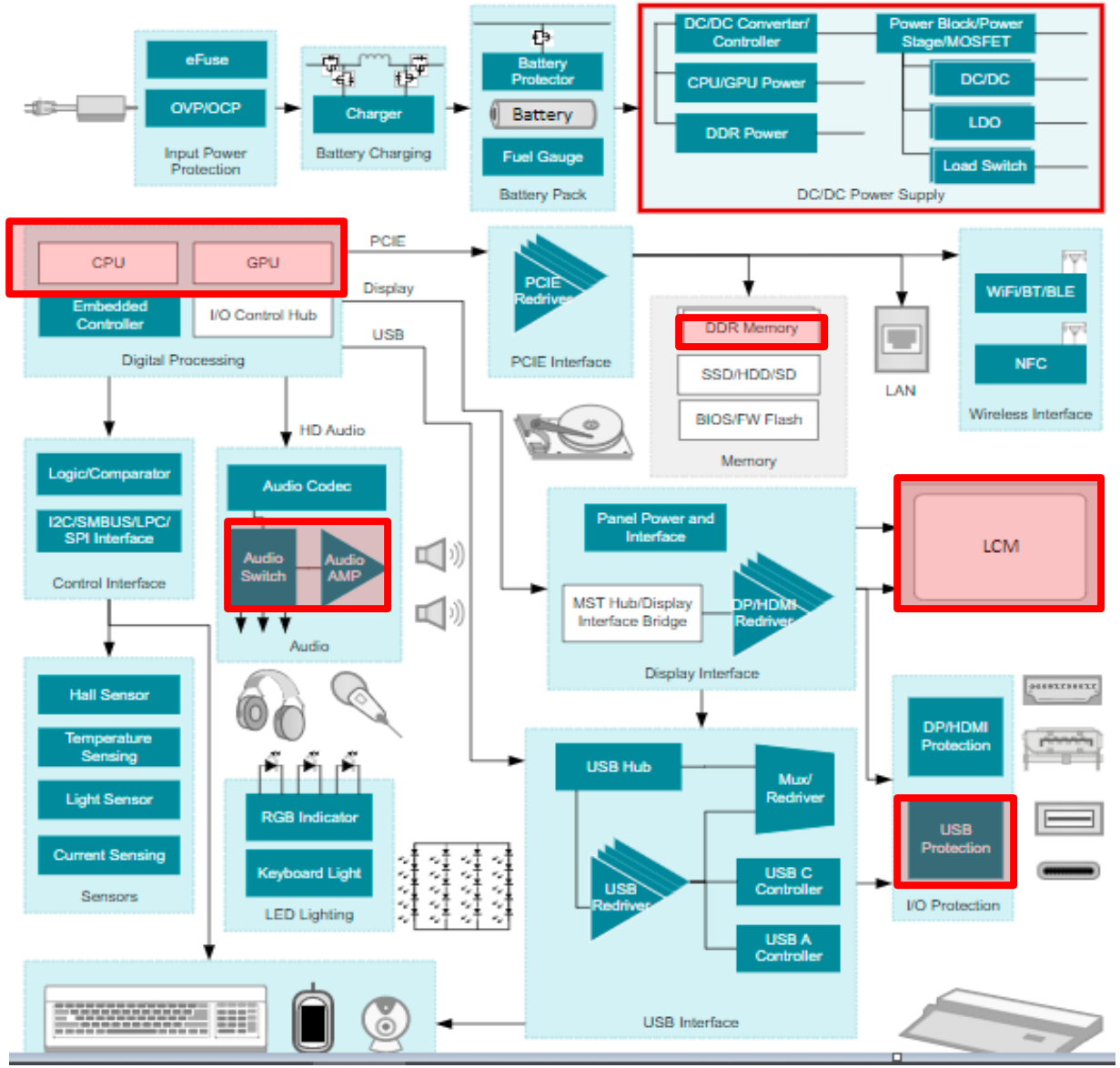
Mobile Phone Power Management System

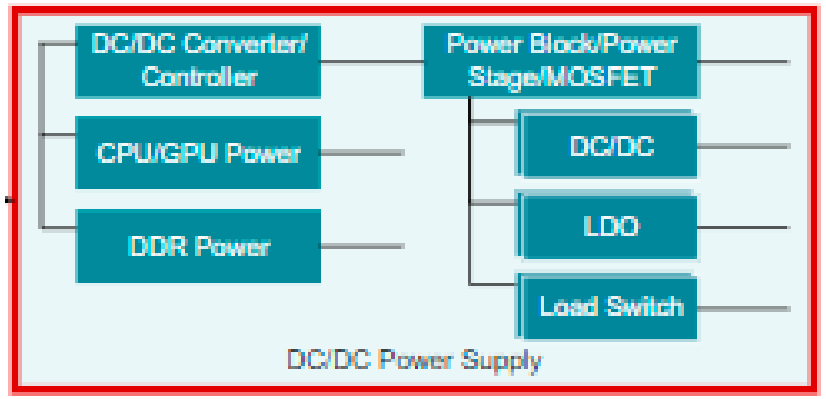
Pulse's Solutions:

1. BEBE series for DCDC
2. BESP series for DDR5

- BEBE1412 parts approved by Qualcomm in 2020 & 2022.
- BEBE1412 parts design in MTK in 2021.

Laptop & Notebook PC Applications





Design Requirements:

1. Intel CPU： Follow IMVPx spec
2. AMD： similar to Intel approach
3. Input voltage: 16V-20V (battery pack)
3. System Voltages: see next page

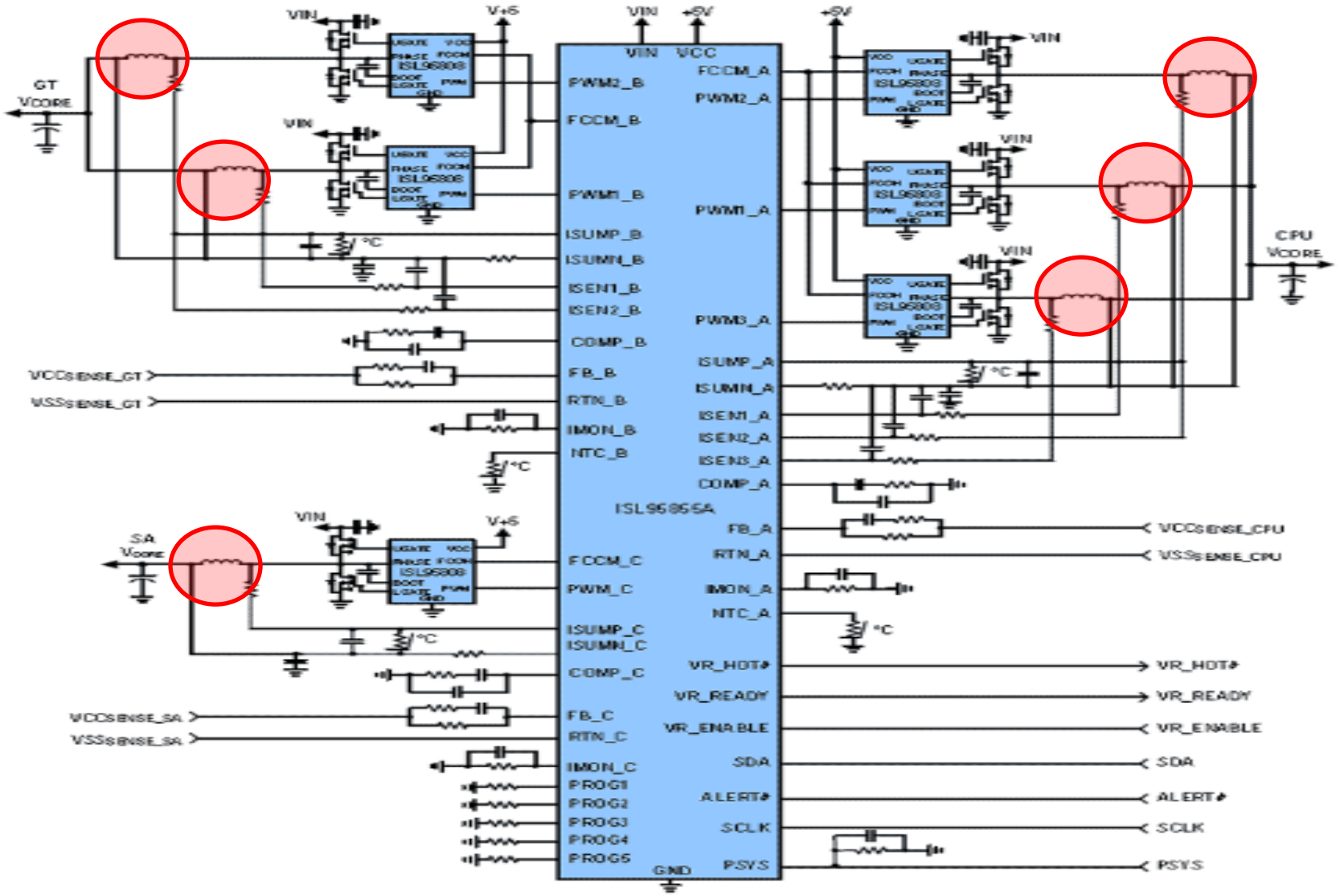
Laptop & Notebook PC Applications

Pulse a YAGEO company

MSI_Alder Lake					
Functions	**Current (max)**	**Frequency**	**Design Requirements**	**Quantity (Estimate)**	**Pulse's Solutions**
CHARGER			Low profile, High Efficiency	1	BMMA (Std) BMNI, BMME (L Profile)
1.8V				1	
3.3V				2	
5V				2	
1V				2	
Panel Backlight			High inductance	1	BMMx, BMNx
Audio			Low THD	2	BMDU, BEBE
DDR5			Low DCR, High Eff	2	BESP
VCORE(VCCIN)	IMVPx	IMVPx	High Current, Low inductance	4	BMMA, BMMI, BMME
VCORE(VCCIN_AUX) & VGA_CORE	IMVPx	IMVPx	High Current, Low inductance	6	BMMA, BMMI, BMME

Note: Current and Frequency decided by Customers. We can help to find the correct Inductors

Laptop & Notebook PC Applications (CPU)



Multi-phase DCDC benefits :

- Fast Transient
- Low voltage+high current
- Better thermal management
- Applicable for servers, Desktop, Telecom Power

Example based on ISL96855A

Thank You

Pulse
a YAGEO company