

# Assembled SMD Power Inductors – WPZ Series

Operating Temp. : -40°C~+125°C(Including self-heating)



## FEATURES

- High saturation characteristic core for large saturation current and low loss
- Closed magnetic circuit design reduces leakage flux
- High precision DCR
- Halogen free, RoHS compliant

## APPLICATIONS

- Server, desktop computer, notebook
- Graphics, memory
- Industrial equipment, telecom base station

## PRODUCT IDENTIFICATION

**WPZ**

①

**100807**

②

**S**

③

**R12**

④

**K**

⑤

**T**

⑥

□□□

⑦

① Type	
WPZ	SMD Power Inductor

③ Feature Type	
S	Standard Type

④ Nominal Inductance	
Example	Nominal Value
23N	23nH
R12	120nH

⑤ Inductance Tolerance	
K	±10%
L	±15%
M	±20%

⑥ Packing	
T	Tape & Reel

⑦ Design Code	
□□□	Design Code
* Standard product is blank	

② External Dimensions(LxWxH) [mm]	
050507	5.2x5.2x6.5
060605	6.4x6.4x5.3
070705	7.0x7.0x5.0
090608	9.6x6.4x8.0
090610	9.6x6.4x10.0
090704	9.5x7.5x4.0
090709	9.5x7.5x9.0
100612	10.0x6.0x12.0
100705	10.2x7.0x5.0
100807	10.3x8.0x7.0/7.5
101003	10.0x10.0x3.35
101006	10.0x10.0x6.0
110608	10.6x6.3x8.1
120808	12.0x8.0x8.1
130803	13.5x8.5x3.0
151506	15.0x15.6x5.6
161203	15.3x11.3x3.0

# SHAPE AND DIMENSIONS — 2 Pins

Fig.1

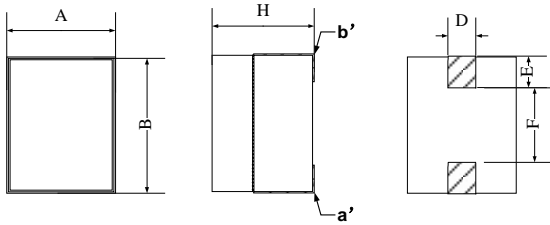


Fig.2

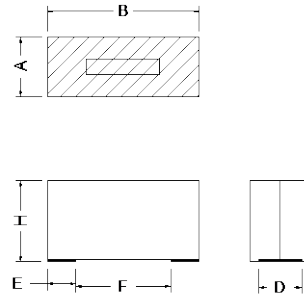


Fig.3

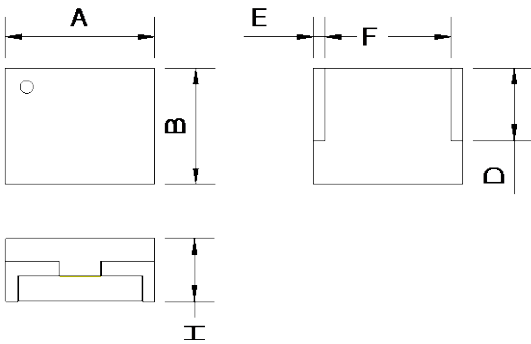


Fig.4

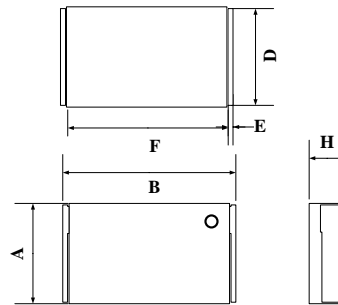
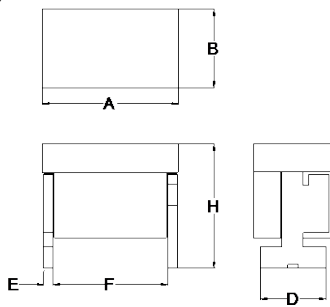
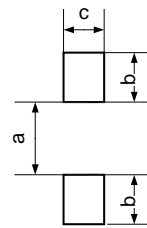


Fig.5



Recommended Land Pattern (Typ.)



Unit: mm

Series	Shape	A Max.	B Max.	H Max.	D	E	F	a	b	c
WPZ050507S001	Fig.1	5.2	5.2	6.5	2.0±0.2	0.7±0.2	3.7±0.3	3.2	1.15	2.5
WPZ070705S002	Fig.1	7.0	7.0	5.0	2.5±0.25	1.5±0.3	4.0±0.3	3.3	2.1	3.0
WPZ090608S002	Fig.2	6.4	9.6	8.0	2.1±0.2	2.3±0.2	4.8±0.2	4.0	3.6	3.2
WPZ090610S002	Fig.2	6.4	9.6	10.0	3.2±0.2	2.7±0.2	4.0±0.2	3.4	3.3	3.6
WPZ090704S	Fig.3	7.5	9.5	4.0	4.5 Typ.	0.6 Typ.	8.3 Typ.	5.8	1.8	4.5
WPZ090709S	Fig.3	7.5	9.5	9.0	4.3 Typ.	1.2 Typ.	6.2 Typ.	5.8	1.8	4.5
WPZ100612S002	Fig.2	6.0	10.0	12.0	2.45±0.3	2.95±0.3	3.65±0.5	3.15	3.3	3.3
WPZ100705S	Fig.1	7.0	10.2	5.0	2.5±0.1	1.9±0.2	6.0±0.22	6.4	2.0	3.0
WPZ100705S002	Fig.1	7.0	10.25	5.2	2.54±0.1	2.03±0.2	5.94±0.2	5.08	2.8	3.05
WPZ100705S004	Fig.1	7.0	10.7	5.0	2.54±0.1	2.03±0.2	5.94 Typ.	5.33	3.18	2.68
WPZ100807S	Fig.1	8.0	10.3	7.0	2.3±0.2	3.0±0.2	4.0±0.2	4.7	3.3	2.5
WPZ100807S002	Fig.1	8.0	10.4	7.5	2.25±0.2	2.54±0.2	5.12±0.2	4.7	3.0	2.5
WPZ110608S001	Fig.5	10.6	6.3	8.1	5.0±0.2	0.7±0.1	8.7Min.	8.4	1.3	5.6
WPZ120808S	Fig.1	8.0	12.0	8.1	1.3±0.2	2.2±0.2	7.6±0.2	6.2	3.0	2.0
WPZ130803S	Fig.4	8.5	13.5	3.0	8.15±0.20	0.50±0.1	12.85±0.2	11.95	0.9	8.9

## SPECIFICATIONS

Part Number	Inductance	L Test Condition	DC Resistance	Saturation Current	Heat Rating Current	
Units	nH	/	mΩ	A	A	
Symbol	L		DCR	Isat	Irms	
WPZ050507S60NMT001	55±20%	@100kHz, 1V	0.25±20%	70	50	
WPZ050507S80NMT001	80±20%			50		
WPZ050507SR10MT001	100±20%			40		
WPZ050507SR15MT001	150±20%			27		
WPZ070705S70NMT002	72±20%		0.32±9.4%	58		37
WPZ070705SR10MT002	105±20%			46		
WPZ070705SR15MT002	150±20%	34				
WPZ090608SR10KT002	100±10%	@1MHz, 0.1V	0.29±5%	94	51	
WPZ090608SR12KT002	120±10%			79		
WPZ090608SR15KT002	150±10%			65		
WPZ090608SR18KT002	180±10%			55		
WPZ090608SR22KT002	220±10%			44		
WPZ090608SR28KT002	280±10%			34		
WPZ090608SR30KT002	300±10%			32.5		
WPZ090610SR07KT002	70±10%			0.12 Max. (0.10 Typ.)		145
WPZ090610SR10KT002	100±10%	108				
WPZ090610SR12KT002	120±10%	85				
WPZ090610SR15KT002	150±10%	67				
WPZ090610SR18KT002	180±10%	56				
WPZ090610SR22KT002	220±10%	46				
WPZ090610SR28KT002	280±10%	36				
WPZ090704S70NLT	70±15%	@0.8MHz, 1V	0.32±10%		78	39
WPZ090704SR10LT	100±15%			55		
WPZ090704SR14LT	140±15%			39		
WPZ090704SR18LT	175±15%		31			
WPZ090709SR10LT	100±15%		0.17±20%	80	50	
WPZ090709SR12LT	120±15%			66		
WPZ090709SR15LT	150±15%	53				
WPZ090709SR18LT	180±15%	44				
WPZ090709SR22LT	220±15%	36				
WPZ090709SR28LT	280±15%	28				
WPZ090709SR30LT	300±15%	26				
WPZ100612S70NLT002	70±15%	@100kHz, 1V	0.125±10%	129	70	
WPZ100612SR10LT002	100±15%			90		
WPZ100612SR12LT002	120±15%			75		
WPZ100612SR15LT002	150±15%			60		
WPZ100612SR22LT002	220±15%			41		
WPZ100612SR28LT002	280±15%			32		
WPZ100612SR33LT002	330±15%			27		
WPZ100612SR47LT002	470±15%			19		
WPZ100705SR12KT	120±10%		0.35±10%	63	31	
WPZ100705SR15KT	150±10%			52		
WPZ100705SR20KT	200±10%			37		
WPZ100705SR30KT	300±10%			21		
WPZ100705SR10KT002	100±10%		0.1375 Max.	60	40	
WPZ100705SR12KT002	120±10%			50		
WPZ100705SR15KT002	150±10%			40		
WPZ100705SR20KT002	200±10%			30		

## SPECIFICATIONS

Part Number	Inductance	L Test Condition	DC Resistance	Saturation Current	Heat Rating Current
Units	nH	/	mΩ	A	A
Symbol	L		DCR	Isat	Irms
WPZ100705SR16KT004	160±15%	@100kHz, 1V	0.23±10%	60	40
WPZ100807SR12KT	120±10%			80	
WPZ100807SR15KT	150±10%			72	
WPZ100807SR17KT	170±10%			58	
WPZ100807SR22KT	220±10%			46	
WPZ100807SR30KT	300±10%			32	
WPZ100807SR33KT	330±10%			28	
WPZ100807SR12KT002	115±10%	@100kHz, 0.1V	0.29±5%	94	61
WPZ100807SR15KT002	150±10%			76	
WPZ100807SR17KT002	175±10%			66	
WPZ100807SR22KT002	215±10%			50	
WPZ100807SR23KT002	230±10%			48	
WPZ100807SR27KT002	270±10%			40	
WPZ100807SR30KT002	300±10%			35	
WPZ110608SR10KT001	100±10%	@300kHz, 0.1V	0.35 Max.	90	40
WPZ110608SR12KT001	120±10%			78	
WPZ110608SR16KT001	160±10%			60	
WPZ110608SR20KT001	200±10%			45	
WPZ120808SR15KT	150±10%	@100kHz, 1V	0.29±5%	85	50
WPZ120808SR18KT	180±10%			72	
WPZ120808SR21KT	210±10%			65	
WPZ120808SR23KT	230±10%			60	
WPZ120808SR25KT	250±10%			52	
WPZ130803SR11KT	110±10%	@100kHz, 0.1V	0.45±10%	65	30
WPZ130803SR15KT	145±10%			50	
WPZ130803SR21KT	210±10%			34	
WPZ130803SR26KT	260±10%			27	
WPZ130803SR32KT	320±10%			22	
WPZ130803SR44KT	440±10%			16	

※1: All test data is referenced to 25°C ambient;

※2: Isat: DC current at which the inductance drops approximate 20% from its value without current;

※3: Irms: DC current that causes the temperature rise (ΔT) from 25°C ambient when two coils connected in series, ΔT is approximate 40°C.

## SHAPE AND DIMENSIONS — 3 Pins

Fig.1

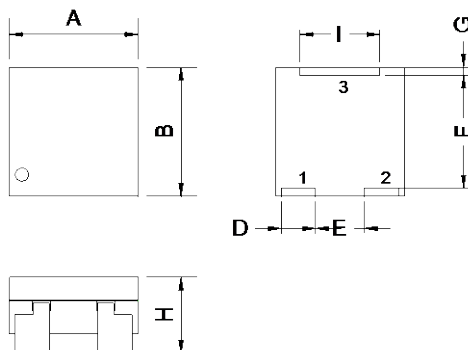
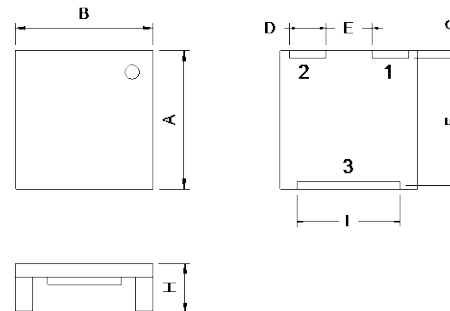
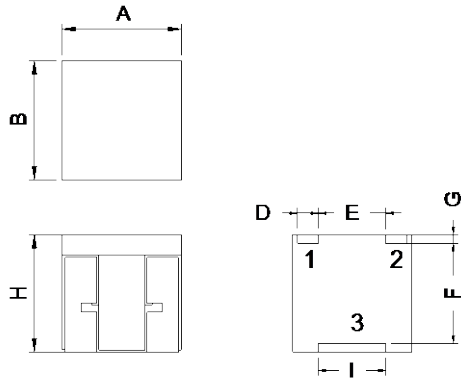


Fig.2



## SHAPE AND DIMENSIONS — 3 Pins

Fig.3



Recommended Land Pattern (Typ.)

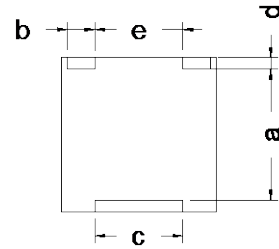
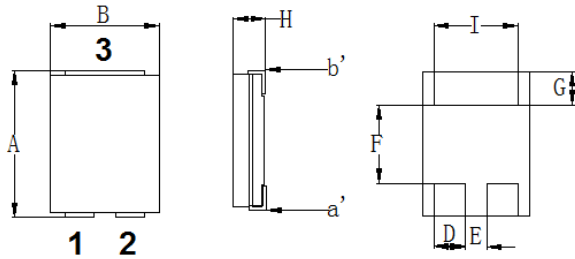
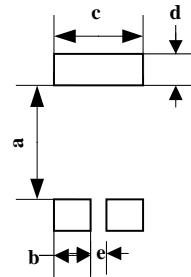


Fig.4



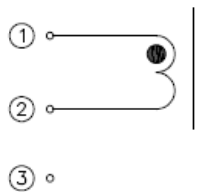
Recommended Land Pattern (Typ.)



Unit: mm

Series	Shape	A Max.	B Max.	H Max.	D Max.	E Max.	F Max.	G Max.	I Max.	a Typ.	b Typ.	c Typ.	d Typ.	e Typ.
WPZ060605S	Fig.3	6.4	6.4	5.3	1.95	2.9	5.5	0.55	3.7	4.7	2.2	4.5	1.0	2.1
WPZ101003S	Fig.2	10.0	10.0	3.35	2.8	3.2	8.9	0.6	7.6	8.0	3.2	7.8	1.25	2.6
WPZ101006S	Fig.1	10.0	10.0	6.0	2.7	3.8	8.6	0.7	6.2	8.1	3.0	6.5	1.2	3.2
WPZ161203S	Fig.4	15.3	11.3	3.0	3.3	2.3	8.2	3.5	8.9	8.6	3.9	9.5	3.9	1.7

## EQUIVALENT CIRCUIT



## SPECIFICATIONS

Part Number	Inductance (pin1-2)	L Test Condition	DC Resistance (pin1-2)	Saturation Current (pin1-2)	Heat Rating Current (pin1-2)
Units	nH	/	mΩ	A	A
Symbol	L		DCR	Isat	I <sub>rms</sub>
WPZ060605SR10KT001	100±10%	@1MHz, 1V	0.4±12.5%	50	24
WPZ060605SR12KT001	120±10%			41	
WPZ060605SR15KT001	150±10%			33	
WPZ060605SR20KT001	200±10%			25	

## SPECIFICATIONS

Part Number	Inductance (pin1-2)	L Test Condition	DC Resistance (pin1-2)	Saturation Current (pin1-2)	Heat Rating Current (pin1-2)
Units	nH	/	mΩ	A	A
Symbol	L		DCR	Isat	Irms
WPZ101003SR10LT001	100±15%	@1MHz, 1V	0.45±15%	80	31
WPZ101003SR15LT001	150±15%			53	
WPZ101003SR22LT001	220±15%			36	
WPZ101003SR30LT001	300±15%			26	
WPZ101006SR10KT001	100±15%	@1MHz, 1V	0.66±10%	120	31
WPZ101006SR20KT001	200±15%			60	
WPZ101006SR30KT001	300±15%			43	
WPZ101006SR45KT001	450±15%	@1MHz, 1V	0.66±10%	29	31
WPZ101006SR50KT001	500±15%			26	
WPZ161203SR16KT	160±10%		0.66 Max.	55	28.5

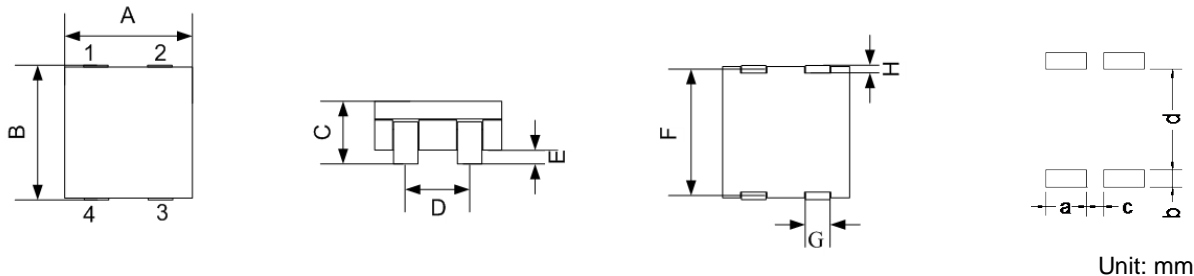
※1: All test data is referenced to 25°C ambient;

※2: Isat: DC current at which the inductance drops approximate 20% from its value without current;

※3: Irms: DC current that causes the temperature rise ( $\Delta T$ ) from 25°C ambient when two coils connected in series,  $\Delta T$  is approximate 40°C.

## SHAPE AND DIMENSIONS — 4 Pins

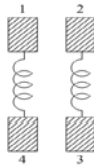
Fig.3



Unit: mm

Series	A Max.	B Max.	C Max.	D Typ.	E Min.	F Typ.	G Typ.	H Typ.	a Typ.	b Typ.	c Typ.	d Typ.
WPZ151506S	15.0	15.6	5.6	7.3	2.0	14.9	4.6	0.50	5.2	0.9	2.1	14

## EQUIVALENT CIRCUIT



## SPECIFICATIONS

Part Number	Inductance (Pin1-4/Pin2-3)	DC Resistance (Pin1-4/Pin2-3)	Saturation Current	Heat Rating Current
		@100kHz, 1V	/	/
Units	nH	mΩ	A	A
Symbol	L	DCR	Isat	Irms
WPZ151506SR18KT	180±10%	0.18Max	49.0	/

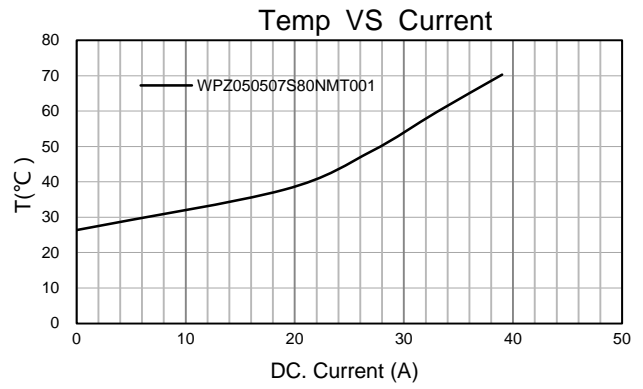
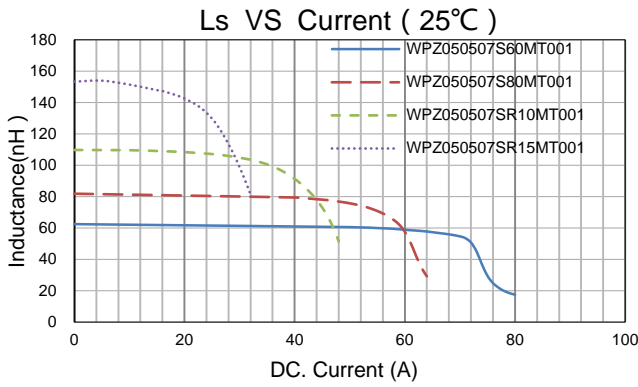
※1: All test data is referenced to 25°C ambient;

※2: Isat: DC current at which the inductance drops approximate 20% from its value without current;

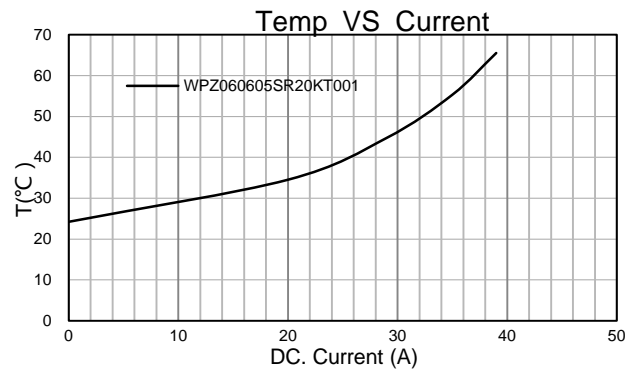
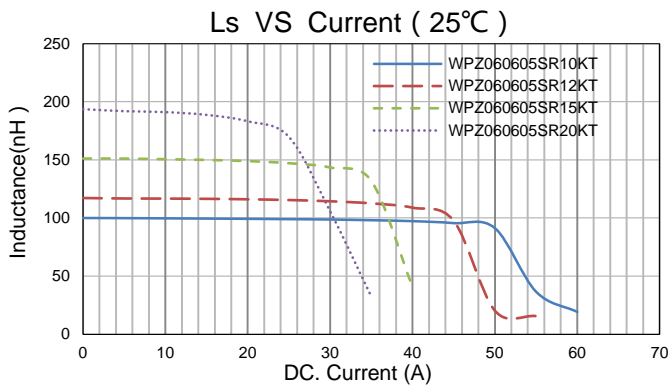
※3: Irms: DC current that causes the temperature rise ( $\Delta T$ ) from 25°C ambient when two coils connected in series,  $\Delta T$  is approximate 40°C.

# TYPICAL ELECTRICAL CHARACTERISTICS

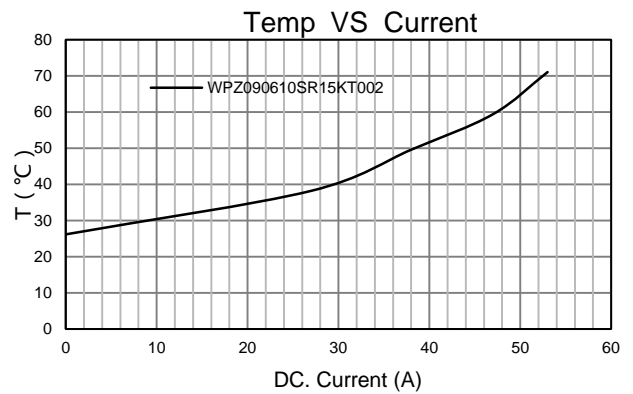
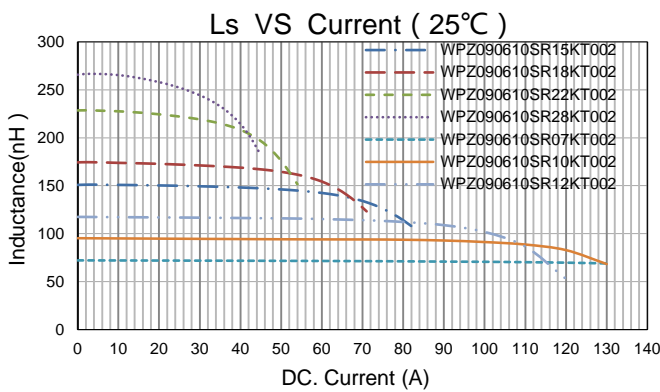
## WPZ050507 Series



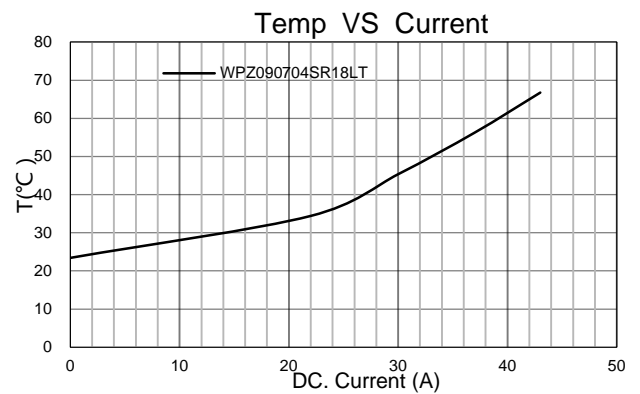
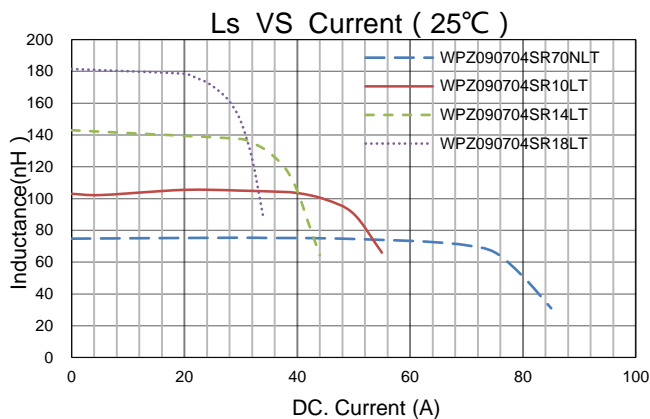
## WPZ060605 Series



## WPZ090610 Series

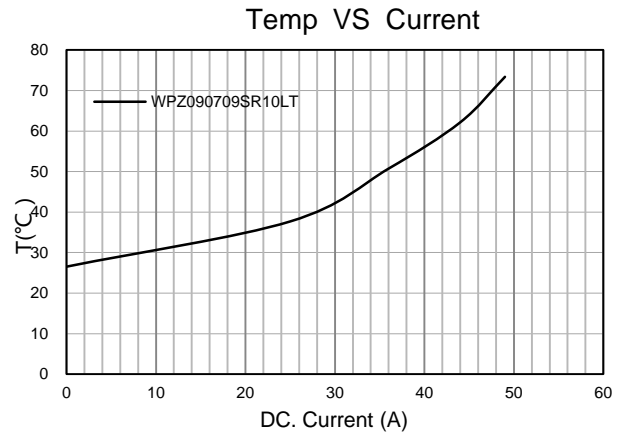
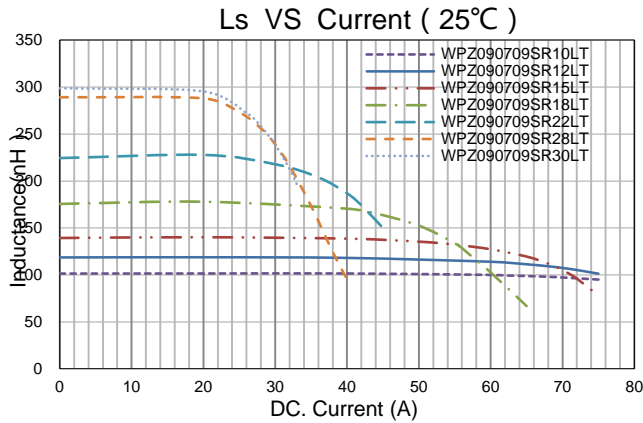


## WPZ090704 Series

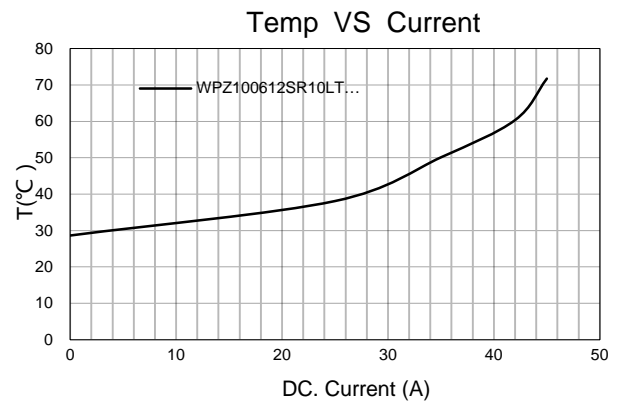
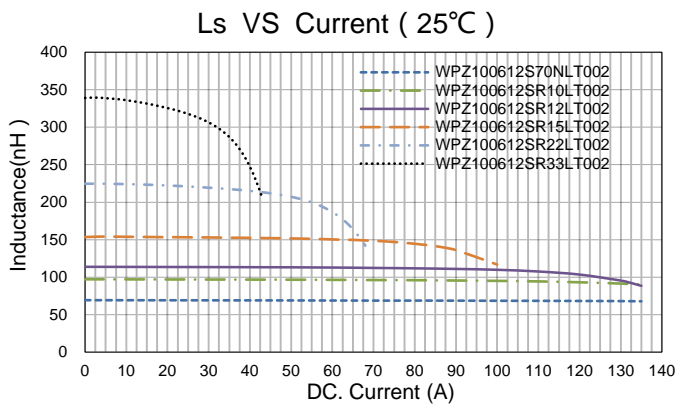


# TYPICAL ELECTRICAL CHARACTERISTICS

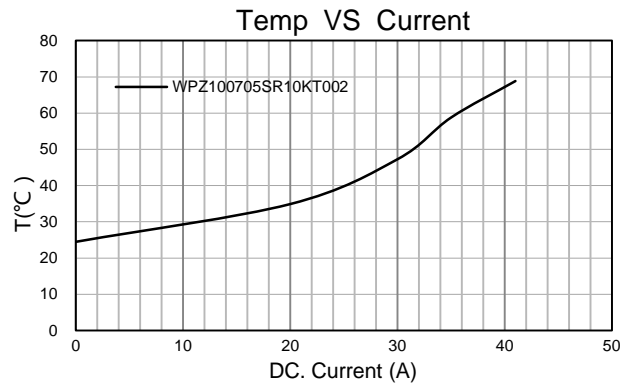
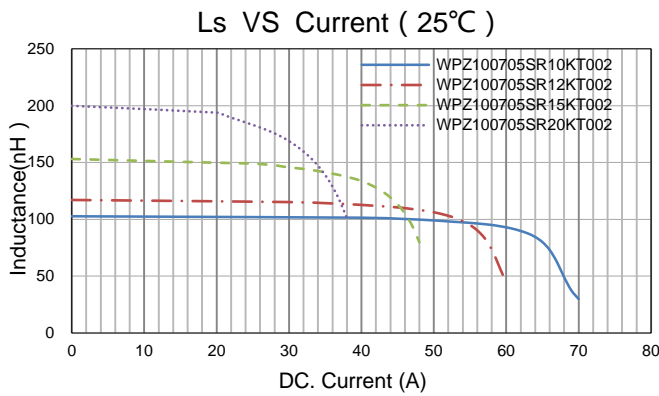
## WPZ090709 Series



## WPZ100612 Series



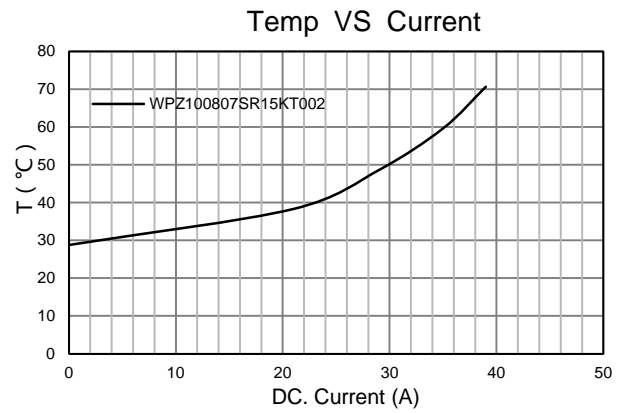
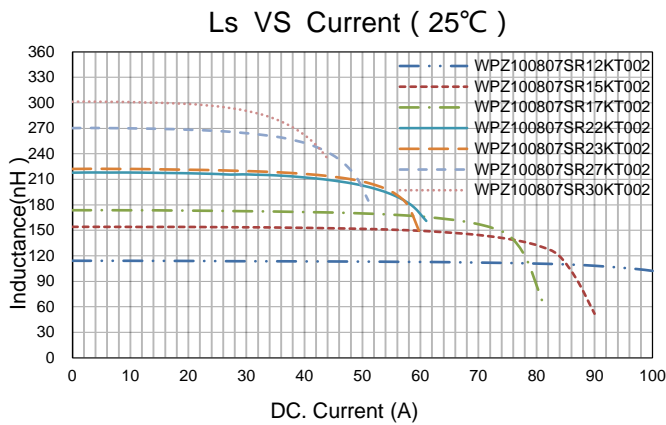
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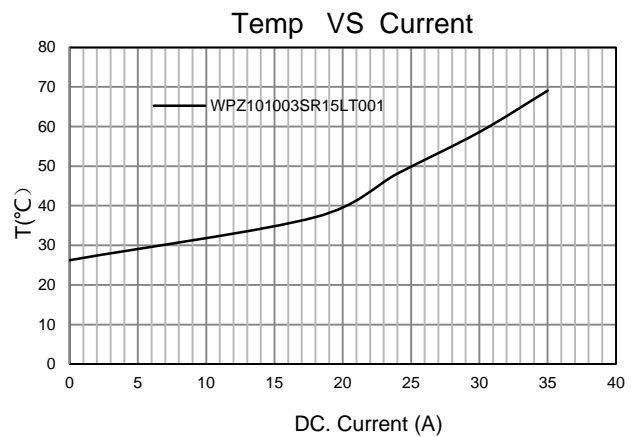
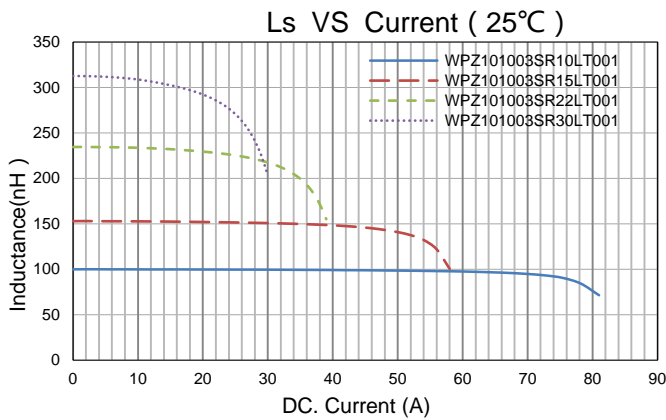


# TYPICAL ELECTRICAL CHARACTERISTICS

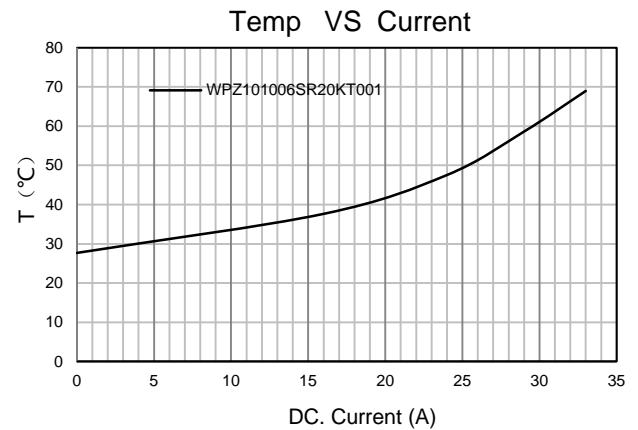
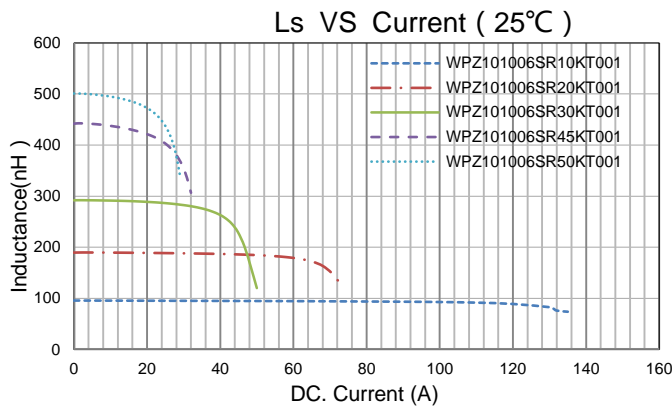
## WPZ100807 Series



## WPZ101003 Series

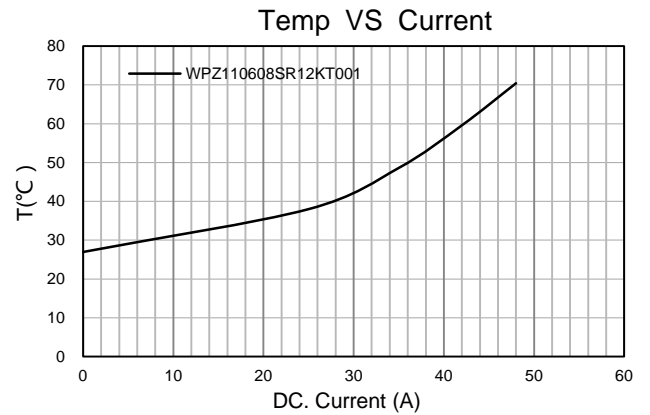
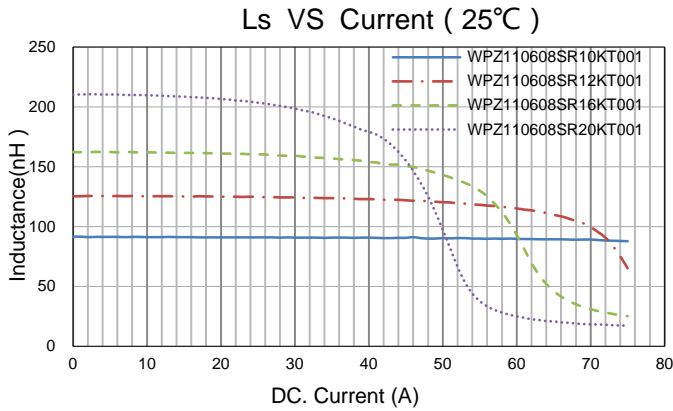


## WPZ101006 Series

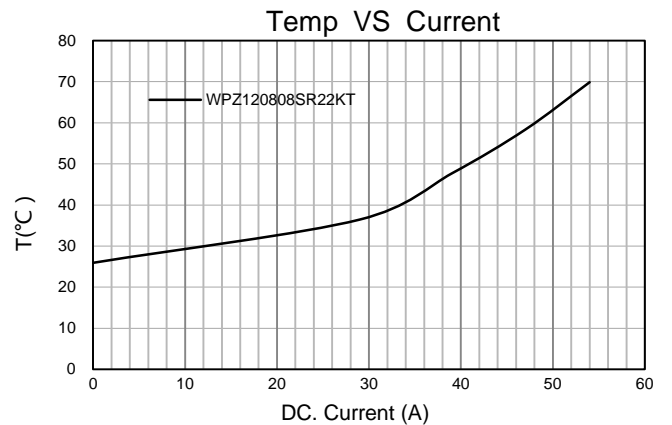
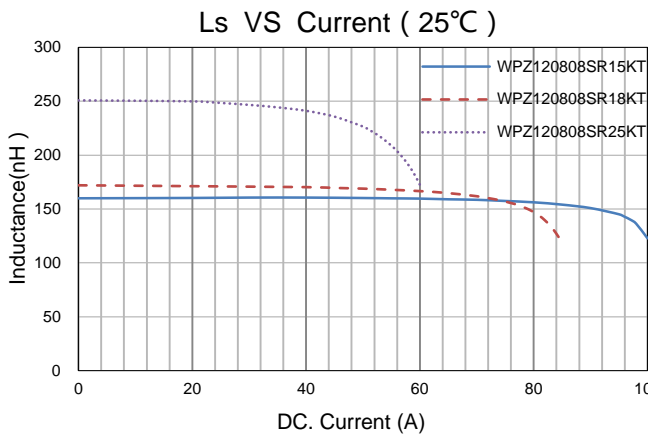


# TYPICAL ELECTRICAL CHARACTERISTICS

## WPZ110608 Series



## WPZ120808 Series



## WPZ130803 Series

