

SMD Power Inductor

Low Profile, High Current Type

PIW-S65 Series

MERITEK

FEATURE

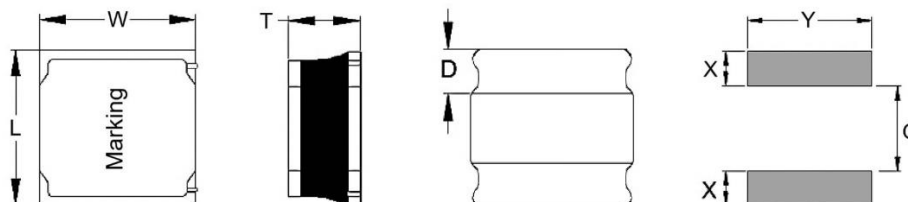
- Magnetic Shield Construction for Power Circuit
- Large Current and Low DC Resistance
- Low Profile Power Inductors
- Application: DC/DC Converter, Battery Powered Devices, Low Profile High Current Power Supply, Notebook/Server



ELECTRICAL CHARACTERISTICS

Series	Nominal Inductance (μH)	DCR (mΩ)	I _{SAT} Max (A)	I _{RMS} Max (A)
PIW-3015S65	1.0 ~ 47	30 ~ 1250	2.32 ~ 0.32	1.62 ~ 0.22
PIW-4018S65	0.56 ~ 150	18.5 ~ 2400	5.50 ~ 0.32	3.85 ~ 0.22
PIW-4030S65	1.0 ~ 220	22 ~ 3500	5.00 ~ 0.33	3.50 ~ 0.23
PIW-5040S65	1.0 ~ 220	14 ~ 1800	7.35 ~ 0.40	5.15 ~ 0.28
PIW-6045S65	1.0 ~ 1000	11 ~ 5200	9.85 ~ 0.24	6.90 ~ 0.17
PIW-8040S65	1.0 ~ 680	7 ~ 2040	10.15 ~ 0.48	7.15 ~ 0.48

DIMENSIONS



Unit: mm

Size Code	L	W	T	D	X	Y	G
3015	3.0 ±0.2	3.0 ±0.2	1.50 max	0.90 ref	1.20	3.08	0.90
4018	4.0 ±0.2	4.0 ±0.2	1.85 max	1.20 ref	1.50	3.80	1.30
4030	4.0 ±0.2	4.0 ±0.2	3.00 max	1.35 ref	1.65	3.70	1.00
5040	5.0 ±0.2	5.0 ±0.2	4.10 max	1.50 ref	1.80	4.30	1.70
6045	6.0 ±0.2	6.0 ±0.2	4.50 max	1.65 ref	1.95	5.20	2.40
8040	8.0 ±0.2	8.0 ±0.2	4.20 max	2.45 ref	2.75	6.60	2.80

PART NUMBERING SYSTEM

PIW 150M 4030 S65
 (1) (2) (3) (4)

No.	Item	Code	Description
(1)	Product Code	PIW	Power Inductor Series, Wire Wound Type
(2)	Inductance	150M	15μH ±20% (M) First two digits: Significant, Third: Multiplier
(3)	Size Code	4030	4.0x4.0x3.0 mm Length x Width x Thickness (mm)
(4)	Series Code	S65	Surface Mount Shielded, Low Profile, High Current series

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ELECTRICAL CHARACTERISTICS – PIW-3015S65

Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (Hz)	DCR ±30% (mΩ)	I _{SAT} Max (A)	I _{RMS} Max (A)
PIW1R0□3015S65	1.0	±30	0.25V/100K	30	2.32	1.62
PIW1R2□3015S65	1.2	±30	0.25V/100K	40	2.30	1.61
PIW1R5□3015S65	1.5	±30	0.25V/100K	50	2.30	1.61
PIW2R2□3015S65	2.2	±20, ±30	0.25V/100K	60	1.60	1.12
PIW3R3□3015S65	3.3	±20, ±30	0.25V/100K	80	1.32	0.92
PIW4R7□3015S65	4.7	±20, ±30	0.25V/100K	125	1.10	0.77
PIW6R8□3015S65	6.8	±20, ±30	0.25V/100K	200	0.85	0.60
PIW100□3015S65	10	±20, ±30	0.25V/100K	250	0.72	0.50
PIW120□3015S65	12	±20, ±30	0.25V/100K	320	0.66	0.46
PIW150□3015S65	15	±20, ±30	0.25V/100K	350	0.66	0.46
PIW220□3015S65	22	±20, ±30	0.25V/100K	460	0.52	0.36
PIW470□3015S65	47	±20, ±30	0.25V/100K	1250	0.32	0.22

ELECTRICAL CHARACTERISTICS – PIW-4018S65

Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (Hz)	DCR ±30% (mΩ)	I _{SAT} Max (A)	I _{RMS} Max (A)
PIWR56□4018S65	0.56	±30	0.25V/100K	18.5	5.50	3.85
PIW1R0□4018S65	1.0	±30	0.25V/100K	25	4.50	3.15
PIW1R2□4018S65	1.2	±30	0.25V/100K	37	3.50	2.45
PIW2R2□4018S65	2.2	±20, ±30	0.25V/100K	45	2.70	1.89
PIW3R3□4018S65	3.3	±20, ±30	0.25V/100K	66	2.15	1.51
PIW4R7□4018S65	4.7	±20, ±30	0.25V/100K	90	2.00	1.40
PIW5R6□4018S65	5.6	±20, ±30	0.25V/100K	100	1.65	1.16
PIW6R8□4018S65	6.8	±20, ±30	0.25V/100K	110	1.60	1.12
PIW100□4018S65	10	±20, ±30	0.25V/100K	180	1.30	0.91
PIW150□4018S65	15	±20, ±30	0.25V/100K	250	0.95	0.67
PIW220□4018S65	22	±20, ±30	0.25V/100K	360	0.80	0.56
PIW330□4018S65	33	±20, ±30	0.25V/100K	530	0.65	0.46
PIW470□4018S65	47	±20, ±30	0.25V/100K	650	0.57	0.40
PIW680□4018S65	68	±20, ±30	0.25V/100K	1000	0.46	0.32
PIW101□4018S65	100	±20, ±30	0.25V/100K	1500	0.41	0.29
PIW151□4018S65	150	±20, ±30	0.25V/100K	2400	0.32	0.22

Notes:

1. All test data referenced to 25°C ambient.
2. Saturation Current (Isat) based on inductance drop ($\Delta L/L_0$: ≤35%) approximately.
3. Heat Rated Current (I_{rms}) based on temperature rise (ΔT : 40°C) approximately.
4. Operating Temperature: -40°C ~ +125°C.

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ELECTRICAL CHARACTERISTICS – PIW-4030S65

Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (Hz)	DCR ±30% (mΩ)	I _{SAT} Max (A)	I _{RMS} Max (A)
PIW1R0□4030S65	1.0	±30	0.25V/100K	22	5.00	3.50
PIW1R5□4030S65	1.5	±20, ±30	0.25V/100K	32	4.80	3.36
PIW2R2□4030S65	2.2	±20, ±30	0.25V/100K	35	4.50	3.15
PIW3R3□4030S65	3.3	±20, ±30	0.25V/100K	50	3.00	2.10
PIW4R7□4030S65	4.7	±20, ±30	0.25V/100K	60	2.90	2.03
PIW6R8□4030S65	6.8	±20, ±30	0.25V/100K	100	2.20	1.54
PIW100□4030S65	10	±20, ±30	0.25V/100K	120	2.00	1.40
PIW150□4030S65	15	±20, ±30	0.25V/100K	200	1.70	1.19
PIW220□4030S65	22	±20, ±30	0.25V/100K	225	1.30	0.91
PIW330□4030S65	33	±20, ±30	0.25V/100K	360	1.10	0.77
PIW470□4030S65	47	±20, ±30	0.25V/100K	460	0.98	0.69
PIW560□4030S65	56	±20, ±30	0.25V/100K	534	0.88	0.62
PIW680□4030S65	68	±20, ±30	0.25V/100K	836	0.77	0.54
PIW101□4030S65	100	±20, ±30	0.25V/100K	1110	0.70	0.49
PIW151□4030S65	150	±20, ±30	0.25V/100K	1400	0.50	0.35
PIW221□4030S65	220	±20, ±30	0.25V/100K	3500	0.33	0.23

ELECTRICAL CHARACTERISTICS – PIW-5040S65

Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (Hz)	DCR ±30% (mΩ)	I _{SAT} Max (A)	I _{RMS} Max (A)
PIW1R0□5040S65	1.0	±30	0.25V/100K	14	7.35	5.15
PIW1R5□5040S65	1.5	±30	0.25V/100K	22	5.00	3.50
PIW2R2□5040S65	2.2	±20, ±30	0.25V/100K	20	4.90	3.43
PIW3R3□5040S65	3.3	±20, ±30	0.25V/100K	26	3.95	2.77
PIW4R7□5040S65	4.7	±20, ±30	0.25V/100K	32	3.50	2.45
PIW6R8□5040S65	6.8	±20, ±30	0.25V/100K	45	2.90	2.03
PIW100□5040S65	10	±20, ±30	0.25V/100K	60	2.30	1.61
PIW150□5040S65	15	±20, ±30	0.25V/100K	80	2.00	1.40
PIW220□5040S65	22	±20, ±30	0.25V/100K	130	1.60	1.12
PIW270□5040S65	27	±20, ±30	0.25V/100K	160	1.40	0.98
PIW330□5040S65	33	±20, ±30	0.25V/100K	180	1.30	0.91
PIW470□5040S65	47	±20, ±30	0.25V/100K	310	1.02	0.71
PIW560□5040S65	56	±20, ±30	0.25V/100K	340	1.00	0.70
PIW680□5040S65	68	±20, ±30	0.25V/100K	500	0.85	0.60
PIW101□5040S65	100	±20, ±30	0.25V/100K	560	0.66	0.46
PIW221□5040S65	220	±20, ±30	0.25V/100K	1800	0.40	0.28

Notes:

1. All test data referenced to 25°C ambient.
2. Saturation Current (Isat) based on inductance drop ($\Delta L/L0$: ≤35%) approximately.
3. Heat Rated Current (I_{rms}) based on temperature rise (ΔT : 40°C) approximately.
4. Operating Temperature: -40°C ~ +125°C.

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ELECTRICAL CHARACTERISTICS – PIW-6045S65

Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (Hz)	DCR ±30% (mΩ)	I _{SAT} Max (A)	I _{RMS} Max (A)
PIW1R0□6045S65	1.0	±20, ±30	0.25V/100K	11	9.85	6.90
PIW1R5□6045S65	1.5	±20, ±30	0.25V/100K	12	9.00	6.30
PIW1R8□6045S65	1.8	±20, ±30	0.25V/100K	18	7.00	4.20
PIW2R2□6045S65	2.2	±20, ±30	0.25V/100K	18	6.90	4.83
PIW3R3□6045S65	3.3	±20, ±30	0.25V/100K	21	5.90	4.13
PIW4R7□6045S65	4.7	±20, ±30	0.25V/100K	26	5.00	3.50
PIW5R6□6045S65	5.6	±20, ±30	0.25V/100K	28	4.27	2.99
PIW6R8□6045S65	6.8	±20, ±30	0.25V/100K	31	3.90	2.73
PIW8R2□6045S65	8.2	±20, ±30	0.25V/100K	46	3.30	2.31
PIW100□6045S65	10	±20, ±30	0.25V/100K	46	3.30	2.31
PIW120□6045S65	12	±20, ±30	0.25V/100K	60	2.80	1.96
PIW150□6045S65	15	±20, ±30	0.25V/100K	65	2.58	1.81
PIW220□6045S65	22	±20, ±30	0.25V/100K	115	2.08	1.46
PIW270□6045S65	27	±20, ±30	0.25V/100K	120	1.90	1.33
PIW330□6045S65	33	±20, ±30	0.25V/100K	140	1.65	1.16
PIW470□6045S65	47	±20, ±30	0.25V/100K	200	1.44	1.01
PIW680□6045S65	68	±20, ±30	0.25V/100K	290	1.40	0.98
PIW101□6045S65	100	±20, ±30	0.25V/100K	416	0.98	0.69
PIW121□6045S65	120	±20, ±30	0.25V/100K	466	0.88	0.62
PIW151□6045S65	150	±20, ±30	0.25V/100K	580	0.80	0.56
PIW221□6045S65	220	±20, ±30	0.25V/100K	803	0.72	0.50
PIW331□6045S65	330	±20, ±30	0.25V/100K	2000	0.50	0.35
PIW102□6045S65	1000	±20, ±30	0.25V/100K	5200	0.24	0.17

ELECTRICAL CHARACTERISTICS – PIW-8040S65

Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (Hz)	DCR ±30% (mΩ)	I _{SAT} Max (A)	I _{RMS} Max (A)
PIW1R0□8040S65	1.0	±30	0.25V/100K	7	10.15	7.15
PIW1R5□8040S65	1.5	±20, ±30	0.25V/100K	10	8.15	5.65
PIW2R2□8040S65	2.2	±20, ±30	0.25V/100K	12	8.00	6.48
PIW3R3□8040S65	3.3	±20, ±30	0.25V/100K	17	6.50	5.40
PIW4R7□8040S65	4.7	±20, ±30	0.25V/100K	19	5.90	4.80
PIW6R8□8040S65	6.8	±20, ±30	0.25V/100K	24	4.95	4.59
PIW100□8040S65	10	±20, ±30	0.25V/100K	40	4.30	3.50
PIW150□8040S65	15	±20, ±30	0.25V/100K	47	2.95	2.95
PIW220□8040S65	22	±20, ±30	0.25V/100K	66	2.50	2.50
PIW330□8040S65	33	±20, ±30	0.25V/100K	110	2.07	2.07
PIW470□8040S65	47	±20, ±30	0.25V/100K	150	1.75	1.75
PIW680□8040S65	68	±20, ±30	0.25V/100K	196	1.45	1.45
PIW101□8040S65	100	±20, ±30	0.25V/100K	290	1.15	1.15
PIW221□8040S65	220	±20, ±30	0.25V/100K	600	0.85	0.80
PIW331□8040S65	330	±20, ±30	0.25V/100K	890	0.68	0.68
PIW471□8040S65	470	±20, ±30	0.25V/100K	1500	0.55	0.50
PIW681□8040S65	680	±20, ±30	0.25V/100K	2040	0.48	0.48

Notes:

1. All test data referenced to 25°C ambient.
2. Saturation Current (Isat) based on inductance drop (ΔL/L0: ≤35%) approximately.
3. Heat Rated Current (I_{rms}) based on temperature rise (ΔT: 40°C) approximately.
4. Operating Temperature: -40°C ~ +125°C.

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RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	180°C
	Time (min. to max.) (t_s)	60 ~ 120
Reflow	Temp. (T_L)	230°C
	Time (min. to max.) (t_L)	40 seconds
Peak Temperature (T_P)		250°C
Time within 5°C of peak Temperature (t_p)		10 seconds
Reflow Times		2 times max

*Specifications subject to change without notice.

