Wire Wound SMD Power Inductors – SPH Series

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

FEATURES

- Magnetic-resin shielded construction reduces buzz noise to ultra-low levels
- Metallization on ferrite core results in excellent shock resistance and damage-free durability
- Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI)
- Takes up less PCB real estate and save more power

APPLICATIONS

- Smart phone
- Blue -ray disc recorders, set top box
- Notebooks, desktop computers, servers
- Portable gaming devices, personal navigation systems, personal multimedia devices

PRODUCT IDENTIFICATION

SPH	252012	H	2R2	M	T
①	②	③	④	⑤	⑥

① Type	
SPH	Wire Wound SMD Power Inductor

② External Dimensions (L×W×H) [mm]	
201610	2.0×1.6×1.0
202012	2.0×2.0×1.2
252010	2.5×2.0×1.0
252012	2.5×2.0×1.2
3015	3.0×3.0×1.5
4012	4.0×4.0×1.2
4018	4.0×4.0×1.8
8030	8.0×8.0×3.0

③ Material Code	
U	U Type Material
H	H Type Material

④ Nominal Inductance	
Example	Nominal Value
2R2	2.2μH

⑤ Inductance Tolerance	
N	±30%
M	±20%

⑥ Packing	
T	Tape & Reel

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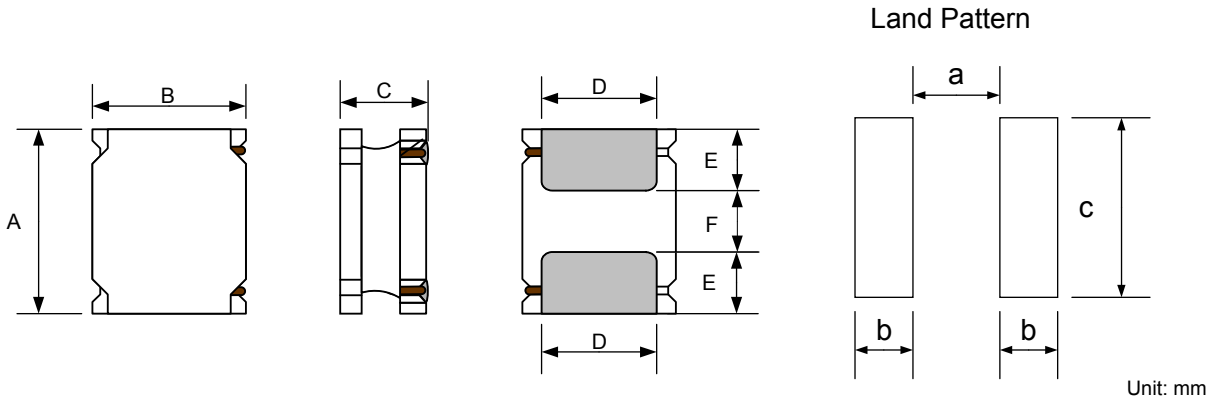
SHAPE AND DIMENSIONS



Series	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
SPH201610H	2.0±0.2	1.6±0.2	1.0Max.	1.2±0.2	0.60±0.2	0.80±0.2	0.70	0.70	1.7
SPH201610U	2.0±0.2	1.6±0.2	1.0Max.	1.2±0.2	0.60±0.2	0.80±0.2	0.70	0.70	1.7
SPH202012H	2.0±0.1	2.0±0.1	1.2Max.	1.5±0.2	0.60±0.2	0.80±0.2	0.65	0.70	2.0
SPH252010H	2.5±0.2	2.0±0.2	1.0Max.	1.5±0.2	0.80±0.2	0.80±0.2	0.80	0.85	2.0
SPH252012H	2.5±0.2	2.0±0.2	1.2Max.	1.5±0.2	0.80±0.2	0.80±0.2	0.80	0.85	2.0
SPH3015H	3.0±0.2	3.0±0.2	1.5Max.	2.5±0.2	0.75±0.2	1.5±0.2	1.5	0.8	2.7
SPH4012H	4.0±0.2	4.0±0.2	1.2Max.	3.3±0.2	0.95±0.2	2.1±0.2	1.9	1.1	3.7
SPH4018H	4.0±0.2	4.0±0.2	1.8Max.	3.3±0.2	0.95±0.2	2.1±0.2	1.9	1.1	3.7
SPH8030H	8.0±0.3	8.0±0.3	3.0Max.	6.3±0.3	2.00±0.3	4.0±0.3	3.8	2.2	7.5

SPECIFICATIONS

SPH201610H TYPE

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	@1MHz	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	μH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
SPH201610HR16MT	0.16±20%	0.031	0.026	4.30	4.80	3.20	3.50
SPH201610HR24MT	0.24±20%	0.040	0.033	3.70	4.10	2.90	3.20
SPH201610HR33MT	0.33±20%	0.040	0.033	2.50	3.10	2.90	3.20
SPH201610HR47MT	0.47±20%	0.059	0.049	2.30	2.85	2.35	2.60
SPH201610HR68MT	0.68±20%	0.076	0.063	1.95	2.45	2.05	2.25
SPH201610H1R0MT	1.0±20%	0.114	0.095	1.65	1.85	1.45	1.60
SPH201610H1R5MT	1.5±20%	0.174	0.145	1.35	1.65	1.25	1.40
SPH201610H2R2MT	2.2±20%	0.264	0.220	1.20	1.45	1.10	1.20
SPH201610H3R3MT	3.3±20%	0.335	0.279	0.90	1.05	0.88	0.98
SPH201610H4R7MT	4.7±20%	0.479	0.399	0.70	0.85	0.74	0.82
SPH201610H6R8MT	6.8±20%	0.816	0.680	0.60	0.70	0.52	0.58
SPH201610H100MT	10±20%	1.020	0.850	0.50	0.55	0.45	0.50

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SPECIFICATIONS

SPH201610U TYPE

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	@1MHz	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	μH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
SPH201610UR68MT	0.68±20%	0.072	0.060	2.50	2.70	2.05	2.25
SPH201610U1R0MT	1.0±20%	0.072	0.060	1.30	1.50	2.05	2.25
SPH201610U2R2MT	2.2±20%	0.171	0.143	1.10	1.20	1.23	1.40

SPH202012H TYPE

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	@1MHz	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	μH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
SPH202012HR16MT	0.16±20%	0.031	0.026	5.20	5.80	2.50	2.75
SPH202012HR24MT	0.24±20%	0.042	0.035	4.70	5.20	2.20	2.40
SPH202012HR33MT	0.33±20%	0.042	0.035	3.50	4.00	2.20	2.40
SPH202012HR47MT	0.47±20%	0.050	0.042	3.55	3.75	2.00	2.20
SPH202012HR68MT	0.68±20%	0.060	0.050	2.95	3.10	1.80	2.00
SPH202012H1R0MT	1.0±20%	0.088	0.073	2.70	2.85	1.50	1.65
SPH202012H1R5MT	1.5±20%	0.112	0.093	2.00	2.20	1.30	1.45
SPH202012H2R2MT	2.2±20%	0.127	0.106	1.40	1.65	1.20	1.35
SPH202012H3R3MT	3.3±20%	0.276	0.230	1.20	1.35	0.85	0.95
SPH202012H4R7MT	4.7±20%	0.294	0.245	0.97	1.10	0.82	0.90
SPH202012H6R8MT	6.8±20%	0.479	0.399	0.82	0.92	0.64	0.70
SPH202012H100MT	10±20%	0.785	0.654	0.72	0.82	0.49	0.54
SPH202012H150MT	15±20%	1.368	1.140	0.55	0.65	0.38	0.42
SPH202012H220MT	22±20%	1.680	1.400	0.40	0.50	0.35	0.38
SPH202012H330MT	33±20%	2.160	1.800	0.35	0.40	0.30	0.33

SPH252010H TYPE

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	@1MHz	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	μH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
SPH252010HR24MT	0.24±20%	0.022	0.018	4.00	4.75	4.05	4.50
SPH252010HR33MT	0.33±20%	0.043	0.036	3.80	4.60	2.40	2.65
SPH252010HR47MT	0.47±20%	0.044	0.037	2.40	2.85	2.40	2.65
SPH252010HR68MT	0.68±20%	0.055	0.046	2.20	2.55	2.20	2.45
SPH252010H1R0MT	1.0±20%	0.080	0.067	2.05	2.45	1.80	2.00
SPH252010H1R5MT	1.5±20%	0.108	0.090	1.70	1.80	1.55	1.70
SPH252010H2R2MT	2.2±20%	0.137	0.114	1.55	1.60	1.40	1.55
SPH252010H3R3MT	3.3±20%	0.228	0.170	1.10	1.30	1.10	1.20
SPH252010H4R7MT	4.7±20%	0.323	0.269	0.92	1.10	0.91	1.00
SPH252010H6R8MT	6.8±20%	0.451	0.376	0.82	0.95	0.76	0.84
SPH252010H100MT	10±20%	0.584	0.487	0.65	0.75	0.67	0.74
SPH252010H150MT	15±20%	0.954	0.795	0.55	0.65	0.50	0.55
SPH252010H220MT	22±20%	1.548	1.29	0.45	0.55	0.40	0.45

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SPECIFICATIONS

SPH252012H TYPE

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	@1MHz	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	μH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
SPH252012HR16MT	0.16±20%	0.022	0.018	6.50	7.20	4.05	4.50
SPH252012HR24MT	0.24±20%	0.022	0.018	4.00	4.75	4.05	4.50
SPH252012HR33MT	0.33±20%	0.029	0.024	4.00	4.70	3.35	3.70
SPH252012HR47MT	0.47±20%	0.036	0.030	3.70	4.10	3.00	3.30
SPH252012HR68MT	0.68±20%	0.061	0.051	2.50	2.70	2.10	2.30
SPH252012H1R0MT	1.0±20%	0.044	0.037	1.70	1.90	2.20	2.40
SPH252012H1R2MT	1.2±20%	0.078	0.065	2.20	2.50	1.95	2.10
SPH252012H1R5MT	1.5±20%	0.078	0.065	2.00	2.35	1.95	2.10
SPH252012H2R2MT	2.2±20%	0.096	0.080	1.80	1.95	1.80	1.95
SPH252012H3R3MT	3.3±20%	0.144	0.120	1.15	1.25	1.40	1.50
SPH252012H4R7MT	4.7±20%	0.210	0.175	1.10	1.20	1.12	1.25
SPH252012H6R8MT	6.8±20%	0.360	0.300	0.80	1.00	0.95	1.05
SPH252012H100MT	10±20%	0.522	0.435	0.70	0.85	0.79	0.87
SPH252012H150MT	15±20%	1.000	0.830	0.65	0.75	0.57	0.63
SPH252012H180MT	18±20%	1.000	0.830	0.50	0.65	0.57	0.63
SPH252012H220MT	22±20%	1.090	0.910	0.45	0.55	0.54	0.60
SPH252012H330MT	33±20%	1.840	1.530	0.35	0.40	0.42	0.46

SPH3015H TYPE

Part Number	Inductance @100kHz,1V	DC Resistance (±30%)	Min. Self-resonant Frequency	Saturation Current	Heat Rating Current
Units	μH	Ω	MHz	A	A
Symbol	L	DCR	S.R.F	Isat*3	Irms*4
SPH3015H4R7NT	4.7±20%	0.096	32	0.90	1.25

SPH4012H TYPE

Part Number	Inductance @100kHz,1V	DC Resistance (±20%)	Min. Self-resonant Frequency	Saturation Current	Heat Rating Current
Units	μH	Ω	MHz	A	A
Symbol	L	DCR	S.R.F	Isat*3	Irms*4
SPH4012H1R0NT	1.0±20%	0.042	100	2.80	2.20
SPH4012H1R5NT	1.5±20%	0.050	80	2.10	2.05
SPH4012H2R2MT	2.2±20%	0.060	70	1.65	1.90
SPH4012H3R3MT	3.3±20%	0.070	60	1.40	1.70
SPH4012H4R7MT	4.7±20%	0.095	45	1.20	1.50
SPH4012H6R8MT	6.8±20%	0.125	35	0.90	1.30
SPH4012H100MT	10±20%	0.170	30	0.80	1.10
SPH4012H150MT	15±20%	0.260	24	0.65	0.75
SPH4012H220MT	22±20%	0.400	18	0.50	0.62

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SPECIFICATIONS

SPH4018H TYPE

Part Number	Inductance @100kHz,1V	DC Resistance (±20%)	Min. Self-resonant Frequency	Saturation Current	Heat Rating Current
Units	μH	Ω	MHz	A	A
Symbol	L	DCR	S.R.F	Isat*3	Irms*4
SPH4018H1R0NT	1.0±20%	0.027	90	4.00	3.20
SPH4018H1R5NT	1.5±20%	0.031	70	3.60	2.95
SPH4018H2R2MT	2.2±20%	0.042	60	3.00	2.20
SPH4018H3R3MT	3.3±20%	0.055	45	2.30	2.00
SPH4018H4R7MT	4.7±20%	0.070	35	2.00	1.70
SPH4018H6R8MT	6.8±20%	0.098	30	1.60	1.45
SPH4018H100MT	10±20%	0.150	25	1.30	1.20
SPH4018H150MT	15±20%	0.210	18	1.10	0.85
SPH4018H220MT	22±20%	0.290	15	0.90	0.70
SPH4018H330MT	33±20%	0.460	12	0.70	0.55

SPH8030H TYPE

Part Number	Inductance @100kHz,1V	DC Resistance (±30%)	Min. Self-resonant Frequency	Saturation Current	Heat Rating Current
Units	μH	Ω	MHz	A	A
Symbol	L	DCR	S.R.F	Isat*3	Irms*4
SPH8030H1R0NT	1.0±20%	0.009	120	7.80	6.20
SPH8030H1R5NT	1.5±20%	0.012	80	6.20	5.30
SPH8030H2R2MT	2.2±20%	0.015	60	4.90	4.80
SPH8030H3R3MT	3.3±20%	0.019	50	4.20	4.30
SPH8030H4R7MT	4.7±20%	0.022	40	3.60	4.00
SPH8030H6R8MT	6.8±20%	0.029	32	3.00	3.40
SPH8030H100MT	10±20%	0.033	27	2.40	3.00
SPH8030H150MT	15±20%	0.060	20	2.00	2.20
SPH8030H220MT	22±20%	0.070	16	1.75	1.90
SPH8030H330MT	33±20%	0.120	13	1.30	1.50
SPH8030H470MT	47±20%	0.170	11	1.10	1.30

Note: Inductance with tolerance of ±20% or other value is also available. Please contact you local sales.

※1 : All test data is referenced to 20°C ambient;

※2 : Rated current: Isat or Irms, whichever is smaller;

※*3 : Isat: DC current at which the inductance drops approximate 30% from its value without current;

※*4 : Irms: DC current that causes the temperature rise (△T =40°C) from 20°C ambient.

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