

Wire Wound SMD Power Inductor –AMWPH Series



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

FEATURES

- ◆ High saturation current, low DC resistance
- ◆ Excellent temperature stability
- ◆ High reliability,
- ◆ AEC-Q200 verified

APPLICATIONS

- ◆ Infotainment system
- ◆ LED lighting
- ◆ Airbag
- ◆ ADAS

PRODUCT IDENTIFICATION

1	2	3	4	5	6
AMWPH	6045	S	2R2	M	T

1	Type
AMWPH	Wire Wound SMD Power Inductor

3	Feature Type
S	Standard

5	Inductance Tolerance
N	±30%
M	±20%

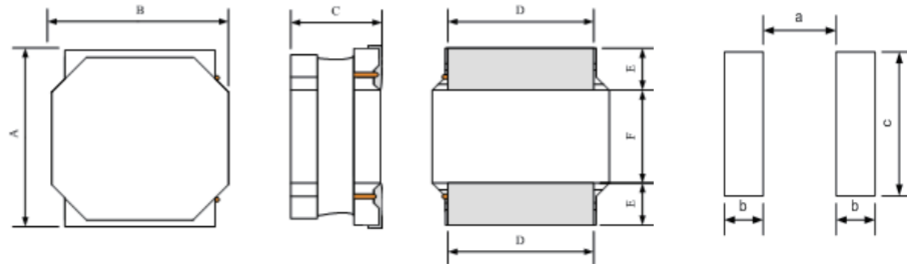
2	External Dimensions(L×W×H) [mm]
3015	3.0x3.0x1.5
4012	4.0x4.0x1.2
4018	4.0x4.0x1.8
5030	5.0x5.0x2.9
6045	6.0x6.0x4.4

4	Nominal Inductance
Example	Nominal Value
2R2	2.2μH
100	10μH

6	Packing
T	Tape Carrier Package

SHAPE AND DIMENSIONS

Recommended PCB pattern



Unit: mm

Series	A	B	C	D(ref.)	E	a	b	c
AMWPH3015S	3.0±0.2	3.0±0.2	1.50±0.15	2.5±0.2	0.9±0.2	1.0Typ.	1.4Typ.	2.7Typ.
AMWPH4012S	4.0±0.2	4.0±0.2	1.2 Max	3.3±0.2	0.95±0.2	1.9Typ.	1.1Typ.	3.7Typ.
AMWPH4018S	4.0±0.2	4.0±0.2	1.8±0.2	3.3±0.2	1.1±0.2	1.2Typ.	1.8Typ.	3.7Typ.
AMWPH5030S	5.0±0.2	5.0±0.2	2.9±0.2	4.0±0.2	1.25±0.2	1.8Typ.	2.0Typ.	4.2Typ.
AMWPH6045S	6.0±0.3	6.0±0.3	4.4±0.2	4.9±0.3	1.55±0.3	2.5Typ.	2.2Typ.	5.7Typ.

SPECIFICATIONS AMWPH3015S Series

Part Number	Inductance	Self-Resonant Frequency	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Min.	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	MHz	Ω		A		A	
Symbol	L	S.R.F	DCR		Isat		Irms	
AMWPH3015S1R0NT	1.0 $\pm$ 30%	107	0.043	0.036	2.40	2.75	2.00	2.40
AMWPH3015S1R5NT	1.5 $\pm$ 30%	84	0.052	0.043	1.90	2.20	1.93	2.22
AMWPH3015S2R2MT	2.2 $\pm$ 20%	64	0.068	0.057	1.50	1.70	1.68	1.92
AMWPH3015S3R3MT	3.3 $\pm$ 20%	48	0.098	0.082	1.30	1.50	1.35	1.55
AMWPH3015S4R7MT	4.7 $\pm$ 20%	39	0.120	0.100	1.00	1.15	1.27	1.47
AMWPH3015S6R8MT	6.8 $\pm$ 20%	30	0.180	0.150	0.87	1.00	1.05	1.20
AMWPH3015S100MT	10 $\pm$ 20%	25	0.288	0.240	0.70	0.80	0.82	0.95
AMWPH3015S150MT	15 $\pm$ 20%	20	0.360	0.300	0.60	0.70	0.73	0.84
AMWPH3015S220MT	22 $\pm$ 20%	16	0.552	0.460	0.50	0.56	0.60	0.70
AMWPH3015S330MT	33 $\pm$ 20%	13	1.092	0.910	0.42	0.48	0.45	0.50
AMWPH3015S470MT	47 $\pm$ 20%	11	1.248	1.040	0.30	0.35	0.42	0.48
AMWPH3015S101MT	100 $\pm$ 20%	6.8	2.880	2.400	0.20	0.25	0.26	0.30

AMWPH4012S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	0.1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω		A		A	
Symbol	L	DCR		Isat		Irms	
AMWPH4012S1R0MT	1.0 $\pm$ 20%	0.054	0.045	2.80	3.10	2.20	2.50
AMWPH4012S2R2MT	2.2 $\pm$ 20%	0.066	0.055	1.60	1.70	2.00	2.30
AMWPH4012S3R3MT	3.3 $\pm$ 20%	0.090	0.075	1.30	1.60	1.70	2.00
AMWPH4012S4R7MT	4.7 $\pm$ 20%	0.114	0.095	1.10	1.30	1.50	1.80
AMWPH4012S6R8MT	6.8 $\pm$ 20%	0.162	0.135	0.90	1.10	1.30	1.60
AMWPH4012S100MT	10 $\pm$ 20%	0.210	0.175	0.70	0.80	1.10	1.30
AMWPH4012S150MT	15 $\pm$ 20%	0.312	0.260	0.60	0.75	0.90	1.00

AMWPH4018S Series

Part Number	Inductance	Self-Resonant Frequency	DC Resistance		Saturation Current		Heat Rating Current	
	0.1MHz/1V	Min.	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	MHz	Ω		A		A	
Symbol	L	S.R.F	DCR		Isat		Irms	
AMWPH4018S1R0NT	1.0 $\pm$ 30%	98	0.036	0.030	4.80	5.50	2.70	3.00
AMWPH4018S1R5NT	1.5 $\pm$ 30%	73	0.043	0.036	4.00	4.60	2.43	2.85
AMWPH4018S2R2MT	2.2 $\pm$ 20%	56	0.060	0.050	3.50	4.00	2.10	2.55
AMWPH4018S3R3MT	3.3 $\pm$ 20%	41	0.066	0.055	2.30	2.90	2.00	2.50
AMWPH4018S4R7MT	4.7 $\pm$ 20%	34	0.094	0.078	2.00	2.20	1.60	2.00
AMWPH4018S6R8MT	6.8 $\pm$ 20%	27	0.127	0.106	1.70	1.90	1.35	1.75
AMWPH4018S8R2MT	8.2 $\pm$ 20%	20	0.172	0.143	1.60	1.85	1.25	1.50
AMWPH4018S100MT	10 $\pm$ 20%	17	0.187	0.156	1.30	1.50	1.10	1.48
AMWPH4018S120MT	12 $\pm$ 20%	15	0.278	0.232	1.55	1.75	0.80	1.10
AMWPH4018S150MT	15 $\pm$ 20%	13	0.354	0.295	1.30	1.50	0.70	1.00
AMWPH4018S220MT	22 $\pm$ 20%	12	0.408	0.340	1.05	1.20	0.75	0.95
AMWPH4018S330MT	33 $\pm$ 20%	9.4	0.582	0.485	0.80	1.00	0.55	0.70
AMWPH4018S390MT	39 $\pm$ 20%	9.1	0.708	0.590	0.67	0.76	0.52	0.68
AMWPH4018S470MT	47 $\pm$ 20%	7.9	0.774	0.645	0.57	0.70	0.50	0.65
AMWPH4018S680MT	68 $\pm$ 20%	7.7	1.068	0.890	0.45	0.55	0.48	0.62
AMWPH4018S101MT	100 $\pm$ 20%	6.4	1.473	1.227	0.40	0.50	0.40	0.50

SPECIFICATIONS AMWPH5030S Series

Part Number	Inductance	Self-Resonant Frequency	DC Resistance		Saturation Current		Heat Rating Current	
	0.1MHz/1V	Min.	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	MHz	Ω		A		A	
Symbol	L	S.R.F	DCR		Isat		Irms	
AMWPH5030SR33NT	0.33±30%	161	0.0096	0.0081	12.50	15.00	5.30	5.60
AMWPH5030SR47NT	0.47±30%	132	0.013	0.011	12.00	13.00	4.75	5.15
AMWPH5030S1R0NT	1.0±30%	78	0.017	0.014	8.50	9.50	4.15	4.55
AMWPH5030S1R5NT	1.5±30%	64	0.022	0.018	6.50	7.50	3.65	4.00
AMWPH5030S2R2MT	2.2±20%	52	0.038	0.032	6.50	7.10	2.95	3.20
AMWPH5030S3R3MT	3.3±20%	36	0.043	0.036	4.20	5.10	2.55	2.75
AMWPH5030S4R7MT	4.7±20%	34	0.068	0.057	3.95	4.50	2.20	2.40
AMWPH5030S8R2MT	8.2±20%	24	0.103	0.086	3.00	3.20	1.70	1.90
AMWPH5030S100MT	10±20%	21	0.115	0.096	2.70	3.15	1.45	1.60
AMWPH5030S220MT	22±20%	14	0.254	0.212	1.80	1.95	0.80	0.88
AMWPH5030S330MT	33±20%	10	0.367	0.306	1.35	1.55	0.70	0.75

AMWPH6045S Series

Part Number	Inductance	Self-Resonant Frequency	DC Resistance		Saturation Current		Heat Rating Current	
	0.1MHz/1V	Min.	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	MHz	Ω		A		A	
Symbol	L	S.R.F	DCR		Isat		Irms	
AMWPH6045SR55MT	0.55±20%	137	0.009	0.007	13.50	15.50	5.90	6.50
AMWPH6045S1R0MT	1.0±20%	90	0.013	0.010	9.30	10.50	5.40	5.90
AMWPH6045S1R5MT	1.5±20%	63	0.016	0.012	7.80	8.70	4.95	5.40
AMWPH6045S2R2MT	2.2±20%	47	0.020	0.016	6.30	6.90	4.30	4.70
AMWPH6045S4R7MT	4.7±20%	27	0.040	0.030	4.60	5.15	3.10	3.40
AMWPH6045S6R3MT	6.3±20%	20	0.045	0.036	3.40	3.80	2.60	3.05
AMWPH6045S100MT	10±20%	16	0.060	0.049	3.00	3.45	2.45	2.70
AMWPH6045S150MT	15±20%	12	0.085	0.071	2.40	2.70	1.90	2.05
AMWPH6045S220MT	22±20%	11	0.140	0.116	2.00	2.25	1.55	1.75
AMWPH6045S330MT	33±20%	10	0.174	0.145	1.50	1.70	1.45	1.55
AMWPH6045S470MT	47±20%	7.5	0.300	0.225	1.35	1.50	1.10	1.20
AMWPH6045S680MT	68±20%	6.0	0.395	0.328	1.15	1.30	0.90	1.00
AMWPH6045S101MT	100±20%	5.0	0.560	0.460	0.90	1.05	0.75	0.85
AMWPH6045S121MT	120±20%	4.6	0.593	0.494	0.85	0.95	0.70	0.85

Note:※1:Rated current: Isat (max.) or Irms (max.), whichever is smaller;

※2:Saturation Current:

Max.Value, DC current at which the inductance drops less than 30% from its value without current;

Typ.Value, DC current at which the inductance drops approximate 30% from its value without current;

※3:Irms:DC current that causes the temperature rise (ΔT) from 20°C ambient.

For Max. Value, $\Delta T < 40^{\circ}\text{C}$;

For Typ. Value, ΔT is approximate 40°C .

The part temperature (ambient + temp. rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

※:If you use the product in other than the above application fields, please confirm with our product engineer.

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