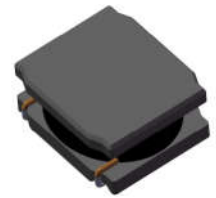


Wire Wound SMD Power Inductors – WMAI Series

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



FEATURES

- Fe base metal material core provides large saturation current
- 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)
- Low DCR decreases power loss, small and slim take up less PCB real estate
- Automatic production ensures high quality and consistency

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

WMAI

①

252012

②

S

③

2R2

④

M

⑤

I

⑥

① Type	
WMAI	Metal Alloy Inductor

③ Feature type	
S	Standard Product

④ Nominal Inductance	
Example	Example
1R0	1.0uH
100	10uH
101	100uH

⑥ Packing	
T	Tape Carrier Package

② External Dimensions(L×W×H) 【mm】	
201610	2.0×1.6×1.0
252010	2.5×2.0×1.0
252012	2.5×2.0×1.2
3012	3.0×3.0×1.2
3015	3.0×3.0×1.5
4012	4.0×4.0×1.2
4020	4.0×4.0×2.0
0420	4.5×4.5×2.0

⑤ Inductance Tolerance	
N	±30%
M	±20%

SHAPE AND DIMENSIONS

Fig.1

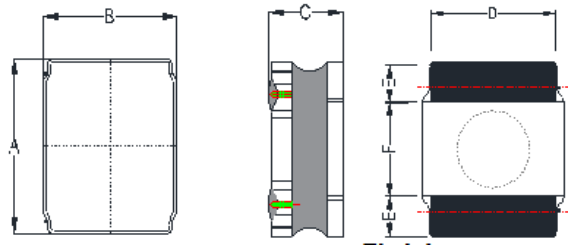


Fig.2

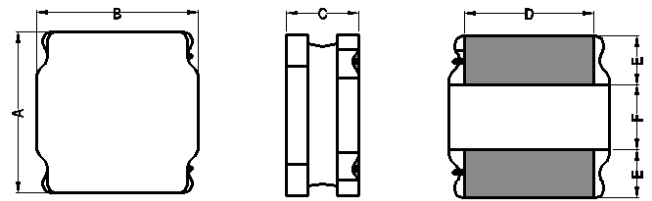


Fig.3

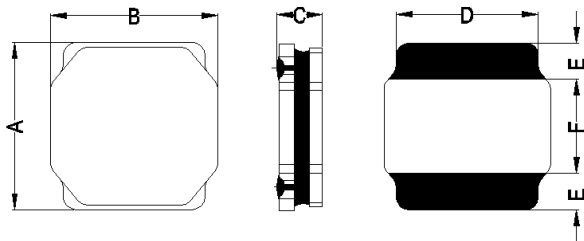


Fig.4

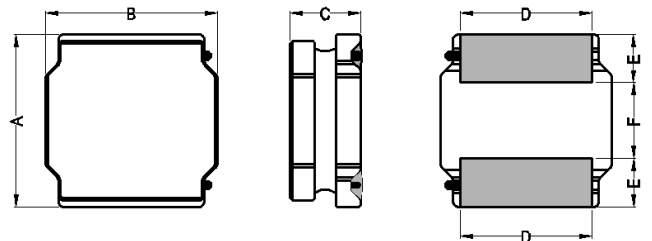
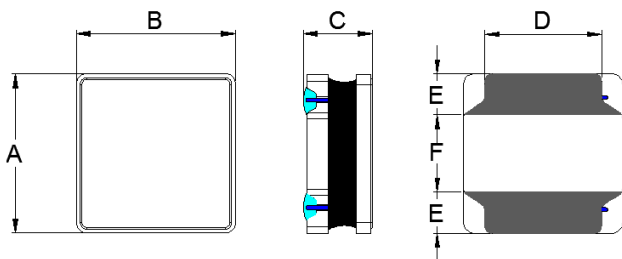
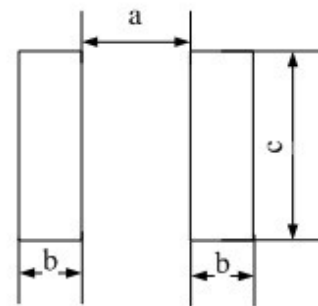


Fig.5



Recommended Land Pattern



Unit: mm

Series	Shape	A	B	C	D	E	F	a Typ.	b Typ.	c Typ.
WMAI201610S	Fig.1	2.0±0.2	1.6±0.2	1.05 Max.	1.2±0.2	0.6±0.2	0.8±0.2	0.7	0.7	1.7
WMAI252010S	Fig.1	2.5±0.2	2.0±0.2	1.05Max.	1.5±0.3	0.8±0.2	0.8±0.2	0.8	0.85	2.0
WMAI252012S	Fig.1	2.5±0.2	2.0±0.2	1.26 Max.	1.5±0.3	0.8±0.2	0.8±0.2	0.8	0.85	2.0
WMAI3012S	Fig.2	3.0±0.2	3.0±0.2	1.2 Max.	2.5±0.3	0.8±0.3	1.4±0.3	1.5	0.8	3.2
WMAI3015S	Fig.2	3.0±0.2	3.0±0.2	1.2 Max.	2.5±0.3	0.8±0.3	1.4±0.3	1.5	0.8	3.2
WMAI4012A	Fig.3	4.0±0.2	4.0±0.2	1.2 Max.	3.3±0.3	1.05±0.3	1.9±0.3	1.9	1.1	3.7
WMAI4020S	Fig.4	4.0±0.2	4.0±0.2	2.0 Max.	3.3±0.3	1.05±0.3	1.9±0.3	1.9	1.1	3.7
WCPHI0420S	Fig.5	4.5±0.2	4.5±0.2	2.0±0.3	3.3±0.3	1.35±0.3	1.8±0.3	1.9	1.1	3.7

SPECIFICATIONS



WMAI201610S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI 201610S-R24MT	$0.24 \pm 20\%$	0.040	0.033	4.50	5.50	3.00	3.45
WMAI 201610S-R33MT	$0.33 \pm 20\%$	0.049	0.041	4.40	5.20	2.70	3.10
WMAI 201610S-R47MT	$0.47 \pm 20\%$	0.049	0.041	4.06	4.70	2.70	3.10
WMAI201610S-R56MT	$0.56 \pm 20\%$	0.053	0.043	3.80	4.50	2.60	2.80
WMAI 201610S-R68MT	$0.68 \pm 20\%$	0.065	0.057	3.50	4.00	2.50	2.80
WMAI 201610S-1R0MT	$1.0 \pm 20\%$	0.095	0.078	3.30	3.80	2.00	2.30
WMAI 201610S-1R5MT	$1.5 \pm 20\%$	0.130	0.110	1.95	2.30	1.70	2.00
WMAI 201610S-2R2MT	$2.2 \pm 20\%$	0.180	0.160	1.90	2.15	1.40	1.60
WMAI201610S-3R3MT	$3.3 \pm 20\%$	0.307	0.245	1.40	1.60	1.10	1.30
WMAI 201610S-4R7MT	$4.7 \pm 20\%$	0.425	0.370	1.10	1.40	0.90	1.00
WMAI201610S-6R8MT	$6.8 \pm 20\%$	0.620	0.500	0.95	1.10	0.70	0.82
WMAI201610S-8R2MT	$8.2 \pm 20\%$	0.870	0.670	0.86	1.00	0.66	0.76
WMAI201610S-100MT	$10 \pm 20\%$	0.875	0.700	0.80	0.95	0.60	0.70

WMAI252010S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI 252010S-R24MT	$0.24 \pm 20\%$	0.033	0.025	6.10	7.10	3.70	4.50
WMAI 252010S-R33MT	$0.33 \pm 20\%$	0.039	0.033	4.80	5.50	3.50	4.05
WMAI 252010S-R47MT	$0.47 \pm 20\%$	0.045	0.040	4.40	5.20	3.20	3.60
WMAI 252010S-R68MT	$0.68 \pm 20\%$	0.059	0.049	3.20	3.60	2.75	3.20
WMAI 252010S-1R0MT	$1.0 \pm 20\%$	0.085	0.071	3.10	3.50	2.20	2.50
WMAI 252010S-1R5MT	$1.5 \pm 20\%$	0.106	0.090	2.60	3.00	2.00	2.30
WMAI 252010S-2R2MT	$2.2 \pm 20\%$	0.155	0.129	1.90	2.20	1.50	1.80
WMAI 252010S-3R3MT	$3.3 \pm 20\%$	0.235	0.196	1.60	1.80	1.20	1.40
WMAI 252010S-4R7MT	$4.7 \pm 20\%$	0.290	0.255	1.30	1.50	1.00	1.10
WMAI 252010S-6R8MT	$6.8 \pm 20\%$	0.480	0.380	1.00	1.15	0.95	1.00
WMAI252010S-100MT	$10 \pm 20\%$	0.740	0.630	0.90	1.00	0.65	0.75

SPECIFICATIONS



WMAI252012S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI252012S-R24MT	$0.24 \pm 20\%$	0.023	0.019	6.50	7.80	4.05	4.70
WMAI 252012S-R33MT	$0.33 \pm 20\%$	0.028	0.023	5.35	6.30	3.70	4.30
WMAI 252012S-R47MT	$0.47 \pm 20\%$	0.035	0.029	4.90	5.60	3.45	4.00
WMAI 252012S-R68MT	$0.68 \pm 20\%$	0.045	0.039	3.80	4.50	3.15	3.60
WMAI 252012S-1R0MT	$1.0 \pm 20\%$	0.054	0.048	3.60	4.20	3.00	3.40
WMAI 252012S-1R5MT	$1.5 \pm 20\%$	0.078	0.060	2.90	3.50	2.40	2.80
WMAI 252012S-2R2MT	$2.2 \pm 20\%$	0.120	0.100	2.60	3.00	1.90	2.15
WMAI 252012S-3R3MT	$3.3 \pm 20\%$	0.215	0.175	1.70	2.10	1.50	1.80
WMAI 252012S-4R7MT	$4.7 \pm 20\%$	0.260	0.225	1.60	1.90	1.25	1.45
WMAI 252012S-6R8MT	$6.8 \pm 20\%$	0.366	0.305	1.20	1.40	0.95	1.10
WMAI 252012S-100MT	$10 \pm 20\%$	0.480	0.435	1.10	1.35	0.85	1.00

WMAI3012S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI3012S-R33MT	$0.33 \pm 20\%$	0.032	0.024	7.20	8.90	4.10	4.80
WMAI3012S-R47MT	$0.47 \pm 20\%$	0.040	0.031	6.80	8.00	3.80	4.20
WMAI 3012S-1R0MT	$1.0 \pm 20\%$	0.054	0.046	4.20	5.40	2.70	3.10
WMAI 3012S-1R5MT	$1.5 \pm 20\%$	0.074	0.062	3.40	4.10	2.50	2.90
WMAI 3012S-2R2MT	$2.2 \pm 20\%$	0.108	0.090	2.80	3.35	2.05	2.35
WMAI 3012S-3R3MT	$3.3 \pm 20\%$	0.185	0.144	2.20	2.60	1.50	1.80
WMAI 3012S-4R7MT	$4.7 \pm 20\%$	0.255	0.215	2.00	2.50	1.15	1.35
WMAI 3012S-6R8MT	$6.8 \pm 20\%$	0.340	0.290	1.60	1.90	1.10	1.25
WMAI 3012S-100MT	$10 \pm 20\%$	0.474	0.395	1.20	1.45	1.00	1.15

SPECIFICATIONS



WMAI3015S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI3015S-R22MT	$0.22 \pm 20\%$	0.019	0.0154	8.80	11.0	5.00	5.90
WMAI3015S-R24MT	$0.24 \pm 20\%$	0.019	0.0154	8.60	10.6	5.00	5.90
WMAI3015S-R33MT	$0.33 \pm 20\%$	0.021	0.016	8.00	10.0	4.90	5.80
WMAI3015S-R47MT	$0.47 \pm 20\%$	0.026	0.020	7.60	9.50	4.60	5.00
WMAI3015S-R68MT	$0.68 \pm 20\%$	0.0365	0.028	7.00	8.30	3.80	4.50
WMAI 3015S-1R0MT	$1.0 \pm 20\%$	0.048	0.037	5.80	7.00	3.30	3.80
WMAI3015S-1R5MT	$1.5 \pm 20\%$	0.072	0.055	4.60	5.50	2.20	2.70
WMAI 3015S-2R2MT	$2.2 \pm 20\%$	0.095	0.074	3.70	4.60	2.20	2.50
WMAI 3015S-3R3MT	$3.3 \pm 20\%$	0.150	0.110	3.40	3.40	2.00	2.30
WMAI 3015S-4R7MT	$4.7 \pm 20\%$	0.185	0.150	2.50	3.00	1.70	1.90
WMAI 3015S-6R8MT	$6.8 \pm 20\%$	0.320	0.245	2.00	2.40	1.20	1.35
WMAI 3015S-100MT	$10 \pm 20\%$	0.450	0.350	1.60	2.00	1.10	1.20
WMAI3015S-150MT	$15 \pm 20\%$	0.610	0.460	1.45	1.75	1.10	1.20

WMAI3020S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI 3020S-R24MT	$0.24 \pm 20\%$	0.020	0.016	12.5	14.5	6.0	7.1
WMAI 3020S-R47MT	$0.47 \pm 20\%$	0.024	0.019	11.0	12.5	5.8	7.0
WMAI 3020S-1R0MT	$1.0 \pm 20\%$	0.045	0.036	8.0	10.0	4.5	5.2
WMAI 3020S-3R3MT	$3.3 \pm 20\%$	0.124	0.098	4.6	5.5	2.5	3.0

WMAI4012A Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI4012A-R56MT	$0.56 \pm 20\%$	0.050	0.040	6.00	7.00	3.20	3.80
WMAI4012A-R68MT	$0.68 \pm 20\%$	0.055	0.042	5.20	6.20	3.25	3.80
WMAI4012A-1R0MT	$1.0 \pm 20\%$	0.059	0.049	3.80	4.60	3.00	3.50
WMAI4012A-2R2MT	$2.2 \pm 20\%$	0.090	0.075	2.80	3.30	2.50	3.00

SPECIFICATIONS



WMAI4012A Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI4012A-3R3MT	$3.3 \pm 20\%$	0.130	0.106	2.80	3.30	2.00	2.50
WMAI4012A-4R7MT	$4.7 \pm 20\%$	0.175	0.145	2.30	2.60	1.80	2.10
WMAI4012A-6R8MT	$6.8 \pm 20\%$	0.230	0.190	1.60	2.20	1.50	1.75
WMAI4012A-8R2MT	$8.2 \pm 20\%$	0.273	0.210	1.58	1.95	1.46	1.68
WMAI4012A-100MT	$10 \pm 20\%$	0.360	0.300	1.55	1.85	0.85	1.00

WMAI4020S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WMAI4020S-R24MT	$0.24 \pm 20\%$	0.017	0.013	14.0	17.0	6.00	7.00
WMAI4020S-R33MT	$0.33 \pm 20\%$	0.020	0.015	13.0	16.0	5.90	6.80
WMAI4020S-R47MT	$0.47 \pm 20\%$	0.022	0.016	11.0	12.0	5.90	6.80
WMAI4020S-R68MT	$0.68 \pm 20\%$	0.0245	0.0192	9.00	11.5	5.80	6.70
WMAI4020S-1R0MT	$1.0 \pm 20\%$	0.028	0.023	8.70	11.0	5.80	6.70
WMAI4020S-1R5MT	$1.5 \pm 20\%$	0.038	0.032	7.70	9.60	5.20	6.00
WMAI4020S-2R2MT	$2.2 \pm 20\%$	0.056	0.046	6.00	7.50	4.00	4.80
WMAI4020S-3R3MT	$3.3 \pm 20\%$	0.088	0.073	4.70	5.90	3.40	4.00
WMAI4020S-4R7MT	$4.7 \pm 20\%$	0.115	0.095	4.00	4.90	2.85	3.30
WMAI4020S-6R8MT	$6.8 \pm 20\%$	0.160	0.130	3.00	4.20	2.40	2.80
WMAI4020S-8R2MT	$8.2 \pm 20\%$	0.220	0.175	2.90	3.80	2.10	2.40
WMAI4020S-100MT	$10 \pm 20\%$	0.220	0.190	2.80	3.50	2.00	2.35
WMAI4020S-150MT	$15 \pm 20\%$	0.400	0.305	2.10	2.80	1.00	1.20
WMAI4020S-220MT	$22 \pm 20\%$	0.545	0.415	1.30	1.50	0.95	1.10

WCPHI0420S Series

Part Number	Inductance	DC Resistance		Saturation Current		Heat Rating Current	
	1MHz/1V	Max.	Typ.	Max.	Typ.	Max.	Typ.
Units	uH	Ω	Ω	A	A	A	A
Symbol	L	DCR		Isat		Irms	
WCPHI0420S-R22MT	$0.22 \pm 20\%$	0.0118	0.009	19.5	22.0	8.60	9.80
WCPHI0420S-R47MT	$0.47 \pm 20\%$	0.0156	0.012	13.0	14.0	8.20	9.80
WCPHI0420S-R56MT	$0.56 \pm 20\%$	0.0195	0.015	12.0	13.5	6.40	7.40
WCPHI0420S-R68MT	$0.68 \pm 20\%$	0.024	0.0185	11.0	13.0	6.00	7.00
WCPHI0420S-1R0MT	$1.0 \pm 20\%$	0.030	0.023	9.00	11.0	5.20	6.20
WCPHI0420S-1R2MT	$1.2 \pm 20\%$	0.0365	0.0275	8.60	10.0	5.10	6.00
WCPHI0420S-1R5MT	$1.5 \pm 20\%$	0.036	0.029	7.70	9.00	5.00	5.90
WCPHI0420S-2R2MT	$2.2 \pm 20\%$	0.055	0.043	7.00	8.00	4.00	5.00
WCPHI0420S-3R3MT	$3.3 \pm 20\%$	0.080	0.061	5.00	6.20	3.20	4.00
WCPHI0420S-4R7MT	$4.7 \pm 20\%$	0.113	0.088	4.60	5.60	2.60	3.00
WCPHI0420S-6R8MT	$6.8 \pm 20\%$	0.150	0.115	3.20	4.60	2.30	2.70
WCPHI0420S-100MT	$10 \pm 20\%$	0.200	0.150	2.60	3.00	2.20	2.50

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

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

※3: For WMAI2016 & WMAI2520 size inductors, absolute maximum voltage: DC 25V; For WMAI30 & WMAI40 size inductors, absolute maximum voltage: DC 40V;

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

※Irms: DC current that causes the temperature rise ($\Delta T = 40^\circ\text{C}$) from 20°C ambient.



The 2nd Floor, A16 Building, Qinghui Park, Silicon Valley Power, Longhua New District, Shenzhen, China.

Shenzhen Ceaiya Electronics Co., Ltd.

[Http://www.ceaiya.com](http://www.ceaiya.com)

Tel: 0755-27993000

Fax: 0755-27993067

Post Zip: 518109