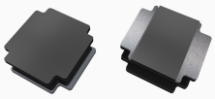
COIL SPECIFICATION

Brand	ZenithTek
Product Series Code	ZADH - Series
File Version	V1.2-1
Description	SMD Low Profile Magnetic Epoxy Inductor



Features

- High Rated Current.
- Low DC Resistance.
- A Series of Package Size and Wide Inductance Range.
- Halogen Free, Lead Free, RoHS and REACH Compliance.

Applications

- DC to DC Converter.
- Computing, Mobile, Networking.
- IoT, Gaming, Audio Devices.
- Industrial PC, Storage Devices.

Product Identification

ZADH	-	4012	ME	S	-	2R2	M/N
1		2	3	4		5	6

1.Product Code:
ZADH = ZenithTek Code.

2.Dimension Code:
4012 = 4.0 * 4.0 * 1.2 mm.

3.Type Code:
ME = Magnetic Epoxy Type.

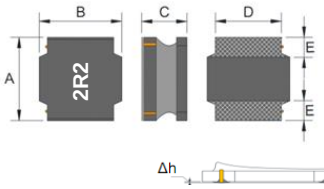
4.Material Code:
S = Material.

5.Inductance Code:
2R2 = 2.2μH.

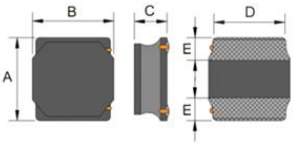
6.Tolerance Code:
M = 20%.
N = 30%.

Dimension (Unit: mm)

Type:4012/4018/8030



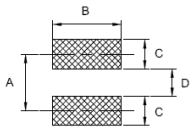
Type:2012/3010/3012/3015



Δh: Clearance between terminal and the surface of plate must be 0.1mm max when coil is placed on a flat plate.

Type	A(±0.2)	B(±0.2)	C(Max.)	D(Ref.)	E(Ref.)
ZADH-2012	2.0±0.1	2.0±0.1	1.20	1.60	0.60
ZADH-3010	3.00	3.00	1.00	2.50	0.75
ZADH-3012	3.00	3.00	1.20	2.50	0.75
ZADH-3015	3.00	3.00	1.50	2.50	0.75
ZADH-4012	4.00	4.00	1.20	3.30	0.95
ZADH-4018	4.00	4.00	1.80	3.30	0.95
ZADH-8030	8.00±0.3	8.00±0.3	3.00	6.30	2.00

Land Pattern (Unit: mm)

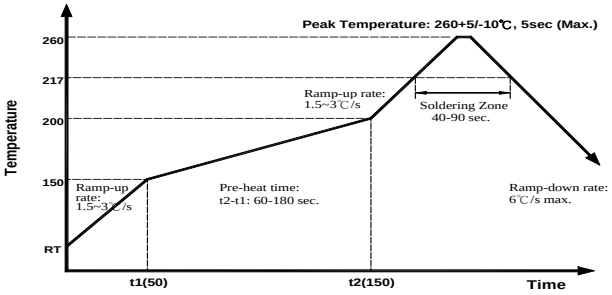


Type	A(Ref.)	B(Ref.)	C(Ref.)	D(Ref.)
ZADH-2012	1.35	2.00	0.70	0.65
ZADH-3010	2.30	2.70	0.80	1.50
ZADH-3012	2.30	2.70	0.80	1.50
ZADH-3015	2.30	2.70	0.80	1.50
ZADH-4012	3.00	3.70	1.10	1.90
ZADH-4018	3.00	3.70	1.10	1.90
ZADH-8030	6.00	7.50	2.20	3.80

Product Structure

Schematic

Reflow Heat Endurance



Operating & Storage Conditions

Operating Temp. : -40°C~+125°C (including self-temp. rise)
Storage Temp. : -40°C~+125°C (for PCBA)

Standard & Atmospheric Conditions

Ambient Temp. : 20°C±15°C / Relative Humidity : 65±20%.
If there may be any doubt on the result, measurement shall be made within the following limits :
Ambient Temp. : 25°C±5°C / Relative Humidity : 75±10%.

Test Equipment

LCR Meter : WK-3260B / DC Source : WK-3265B.
Micro ohm Meter : HIOKI-RM3545.
Caliper : Mitsutoyo 150mm.

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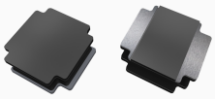

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Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (MHz)/(1V)	SRF(MHz) (Min.)	DCR (Ω)/(Max.)	DCR (Ω)/(Typ.)	Saturation Current (Isat) (A)/(Max.)	Saturation Current (Isat) (A)/(Typ.)	Temperature Current (Irms) (A)/(Max.)	Temperature Current (Irms) (A)/(Typ.)
ZADH-2012MES-1R0☐	1.00	20	1	95	0.088	0.073	2.70	2.85	1.50	1.65
ZADH-2012MES-1R5☐	1.50	20	1	74	0.112	0.093	2.00	2.20	1.30	1.45
ZADH-2012MES-2R2☐	2.20	20	1	49	0.127	0.106	1.40	1.65	1.20	1.35
ZADH-2012MES-3R3☐	3.30	20	1	35	0.276	0.230	1.20	1.35	0.85	0.95
ZADH-2012MES-4R7☐	4.70	20	1	32	0.294	0.245	0.97	1.10	0.82	0.90
ZADH-2012MES-6R8☐	6.80	20	1	25	0.479	0.399	0.82	0.92	0.64	0.70
ZADH-2012MES-100☐	10	20	1	21	0.785	0.654	0.72	0.82	0.49	0.54
ZADH-2012MES-150☐	15	20	1	14	1.368	1.140	0.55	0.65	0.38	0.42
ZADH-2012MES-180☐	18	20	1	19	1.680	1.400	0.60	0.68	0.35	0.38
ZADH-2012MES-220☐	22	20	1	11	1.680	1.400	0.40	0.50	0.35	0.38

Note 1: Tolerance Code: M= ±20%, N= ±30%.
Note 2: Definition of saturation current (Isat): DC current at which the inductance drops approximate 30% from its value without current.
Note 3: Definition of temperature rise current (Irms): DC current that causes the temperature rise (ΔT =40°C) from 20°C ambient.
Note 4: 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 verified in the end application.

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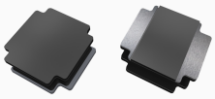

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ZADH-3010MES-4R7☐	4.70	20	1	42	0.180	0.150	0.85	0.95	1.10	1.25
ZADH-3010MES-100☐	10	20	1	30	0.420	0.350	0.60	0.70	0.62	0.80
ZADH-3010MES-220☐	22	20	1	18	0.920	0.770	0.40	0.50	0.48	0.56

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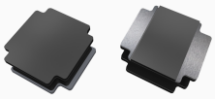

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ZADH-3012MES-1R0☐	1.00	20	1	74	0.040	0.032	2.20	2.50	2.30	2.50
ZADH-3012MES-2R2☐	2.20	20	1	51	0.090	0.075	1.50	1.80	1.40	1.60
ZADH-3012MES-3R3☐	3.30	20	1	62	0.134	0.112	1.23	1.55	1.10	1.30
ZADH-3012MES-100☐	10	20	1	22	0.372	0.310	0.75	0.90	0.75	0.80
ZADH-3012MES-220☐	22	20	1	14	0.840	0.700	0.50	0.60	0.50	0.55

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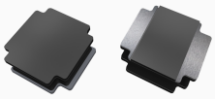

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ZADH-3015MES-R22☐	0.22	20	1	226	0.022	0.018	6.00	6.80	3.00	3.50
ZADH-3015MES-R24☐	0.24	20	1	206	0.022	0.018	5.00	5.50	3.00	3.50
ZADH-3015MES-R47☐	0.47	20	1	157	0.022	0.018	2.40	2.80	3.00	3.50
ZADH-3015MES-R55☐	0.55	20	1	159	0.019	0.016	2.40	2.70	3.05	3.55
ZADH-3015MES-1R0☐	1.00	20	1	92	0.040	0.033	2.70	3.00	2.20	2.50
ZADH-3015MES-1R5☐	1.50	20	1	70	0.048	0.040	2.00	2.30	2.00	2.30
ZADH-3015MES-2R2☐	2.20	20	1	55	0.060	0.050	1.50	1.70	1.80	2.05
ZADH-3015MES-3R3☐	3.30	20	1	51	0.084	0.070	1.30	1.50	1.50	1.70
ZADH-3015MES-3R9☐	3.90	20	1	39	0.115	0.096	1.30	1.60	1.30	1.50
ZADH-3015MES-4R7☐	4.70	20	1	35	0.115	0.096	1.10	1.20	1.30	1.50
ZADH-3015MES-6R8☐	6.80	20	1	27	0.144	0.120	0.80	0.90	1.16	1.35
ZADH-3015MES-100☐	10	20	1	21	0.276	0.230	0.75	0.90	0.84	0.97
ZADH-3015MES-150☐	15	20	1	18	0.360	0.300	0.60	0.70	0.73	0.84
ZADH-3015MES-220☐	22	20	1	14	0.540	0.450	0.52	0.60	0.60	0.70
ZADH-3015MES-260☐	26	20	1	13	0.768	0.640	0.40	0.50	0.45	0.55
ZADH-3015MES-330☐	33	20	1	15	1.090	0.910	0.50	0.55	0.50	0.55
ZADH-3015MES-470☐	47	20	1	11	1.250	1.040	0.35	0.42	0.45	0.50

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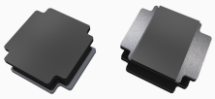

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ZADH-4012MES-1R0☐	1.00	30	100	100	0.050	0.042	2.80	3.30	2.20	2.50
ZADH-4012MES-1R5☐	1.50	30	100	72	0.050	0.042	2.10	2.20	2.20	2.50
ZADH-4012MES-1R8☐	1.80	30	100	73	0.066	0.055	2.10	2.40	2.00	2.30
ZADH-4012MES-2R2☐	2.20	20	100	61	0.066	0.055	1.70	1.80	2.00	2.30
ZADH-4012MES-2R7☐	2.70	20	100	57	0.084	0.070	1.90	2.20	1.70	2.00
ZADH-4012MES-3R3☐	3.30	20	100	55	0.084	0.070	1.40	1.70	1.70	2.00
ZADH-4012MES-3R6☐	3.60	20	100	49	0.090	0.075	1.20	1.60	1.70	2.00
ZADH-4012MES-4R3☐	4.30	20	100	42	0.108	0.090	1.20	1.60	1.50	1.80
ZADH-4012MES-4R7☐	4.70	20	100	39	0.108	0.090	1.20	1.30	1.50	1.80
ZADH-4012MES-5R1☐	5.10	20	100	35	0.132	0.110	1.20	1.40	1.40	1.60
ZADH-4012MES-5R6☐	5.60	20	100	35	0.132	0.110	1.10	1.40	1.40	1.60
ZADH-4012MES-6R8☐	6.80	20	100	33	0.150	0.125	0.90	1.10	1.30	1.60
ZADH-4012MES-100☐	10	20	100	27	0.204	0.170	0.80	0.90	1.10	1.30

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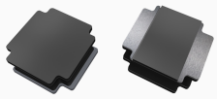

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ZADH-4018MES-1R0☐	1.00	30	100	90	0.032	0.027	4.00	4.80	3.20	3.70
ZADH-4018MES-2R2☐	2.20	20	100	60	0.050	0.042	3.00	3.40	2.20	2.90
ZADH-4018MES-3R3☐	3.30	20	100	45	0.066	0.055	2.30	2.90	2.00	2.50
ZADH-4018MES-4R7☐	4.70	20	100	35	0.084	0.070	2.00	2.20	1.70	2.10
ZADH-4018MES-6R8☐	6.80	20	100	30	0.118	0.098	1.60	1.80	1.45	1.70
ZADH-4018MES-100☐	10	20	100	25	0.180	0.150	1.30	1.50	1.20	1.50
ZADH-4018MES-150☐	15	20	100	18	0.252	0.210	1.10	1.20	0.85	1.20
ZADH-4018MES-220☐	22	20	100	15	0.348	0.290	0.90	1.10	0.70	1.00
ZADH-4018MES-330☐	33	20	100	12	0.552	0.460	0.70	0.90	0.55	0.82
ZADH-4018MES-470☐	47	20	100	11	0.744	0.620	0.57	0.70	0.50	0.66
ZADH-4018MES-680☐	68	20	100	7.10	0.972	0.810	0.53	0.62	0.40	0.60
ZADH-4018MES-101☐	100	20	100	5.20	1.560	1.300	0.49	0.57	0.40	0.47
ZADH-4018MES-151☐	150	20	100	5.10	3.120	2.600	0.41	0.47	0.28	0.33
ZADH-4018MES-221☐	220	20	100	4.20	3.840	3.200	0.33	0.38	0.25	0.29

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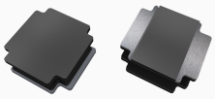

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ZADH-8030MES-1R0☐	1.00	30	100	120	0.012	0.009	7.80	9.00	6.20	7.30
ZADH-8030MES-1R5☐	1.50	30	100	80	0.016	0.012	6.20	7.60	5.30	6.20
ZADH-8030MES-2R2☐	2.20	20	100	60	0.020	0.015	4.90	6.30	4.80	5.70
ZADH-8030MES-3R3☐	3.30	20	100	50	0.025	0.019	4.20	5.10	4.30	5.10
ZADH-8030MES-4R7☐	4.70	20	100	40	0.029	0.022	3.60	4.30	4.00	4.70
ZADH-8030MES-6R8☐	6.80	20	100	32	0.038	0.029	3.00	3.50	3.40	3.90
ZADH-8030MES-100☐	10	20	100	27	0.043	0.033	2.40	2.80	3.00	3.70

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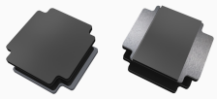
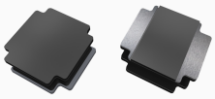


Reliability Test

No.	Item	Specification	Test Method
1	Temperature Shock.	Appearance: No damage. Inductance: within ±10% of initial.	Temperature: -40±2℃~+125±2℃ Kept for 30 minutes. Transition time : 5 minutes. 100 Cycles.
2	Humidity Resistance.	Appearance: No damage. Inductance: within ±10% of initial.	Temperature: 40±2℃. Relative Humidity: 90%. Duration: 500 +4/-0 hours.
3	High Temperature Resistance.	Appearance: No damage. Inductance: within ±10% of initial.	Temperature: 125±2℃. Duration: 1000 +4/-0 hours.
4	Low Temperature Resistance.	Appearance: No damage. Inductance: within ±10% of initial.	Temperature: -40±2℃. Duration: 1000 +4/-0 hours.
5	Vibration test.	Appearance: No damage. Inductance: within ±10% of initial.	Oscillation Frequency: 10Hz to 55Hz to 10Hz in 60 seconds as a period. Total amplitude: 1.5mm. Testing Time: a period of 2 hours in each 3 mutually perpendicular directions (total of 6 hours).
6	Solderability Heat test.	Appearance: No damage. Inductance: within ±10% of initial.	Solder temperature: 260 +0/-5℃. Duration: 5 sec. Allowed reflow time: 2 times.
7	Solderability test.	90% or more of electrode area shall be coated by new solder.	Preheating: 160℃,60sec. Solder temperature: 245±5℃. Duration : 5 sec.
8	Flexure Strength.	No visible mechanical damage.	Flexure: 2mm. Pressurizing Speed: 0.5mm/sec. Keep time: 30±1sec.
9	Terminal Strength.	No visible mechanical damage.	Reflow 2 times. Force: 10N，Keep time: 5 sec，X,Y directs.

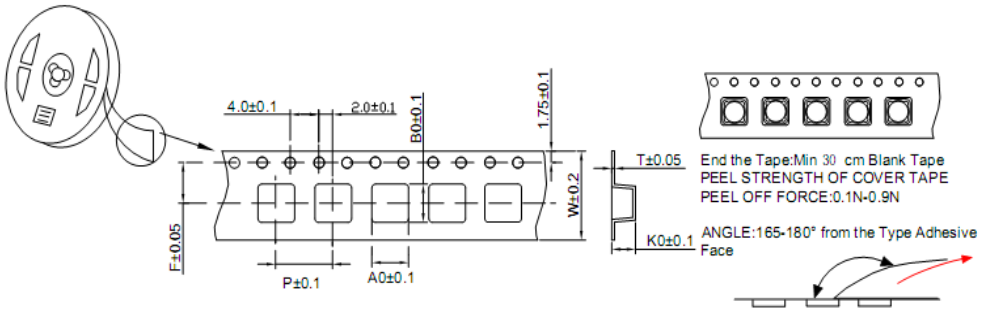
COIL SPECIFICATION

Brand	ZenithTek
Product Series Code	ZADH - Series
File Version	V1.2-1
Description	SMD Low Profile Magnetic Epoxy Inductor



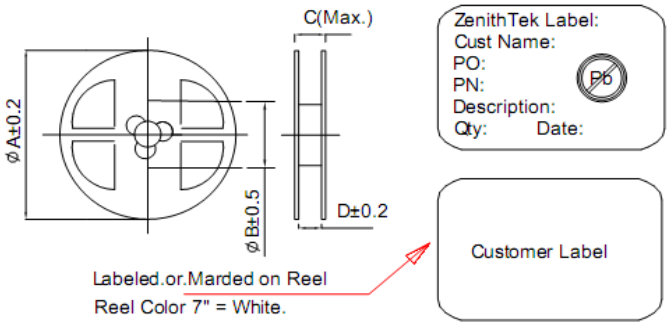
Package

Taping Dimension (mm)



Size(mm)	W	P	A0	B0	K0	T	F
ZADH-2012	8.00	4.00	2.20	2.20	1.30	0.25	3.50
ZADH-3010	8.00	4.00	3.30	3.30	1.40	0.25	3.50
ZADH-3012	8.00	4.00	3.30	3.30	1.60	0.25	3.50
ZADH-3015	8.00	4.00	3.30	3.30	1.90	0.25	3.50
ZADH-4012	12.00	8.00	4.30	4.30	1.60	0.35	5.50
ZADH-4018	12.00	8.00	4.30	4.30	2.10	0.35	5.50
ZADH-8030	16.00	12.00	8.35	8.35	3.40	0.40	7.50

Reel Dimension (mm)



Size(mm)	A	B	C	D	Reel/Size	Qty./Size
ZADH-2012	178	58	14.4	8.4	7”	2000 Pcs
ZADH-3010	178	58	14.4	8.4	7”	2000 Pcs
ZADH-3012	178	58	14.4	8.4	7”	2000 Pcs
ZADH-3015	178	58	14.4	8.4	7”	2000 Pcs
ZADH-4012	330	100	18.4	12.4	13”	4500 Pcs
ZADH-4018	330	100	18.4	12.4	13”	3000 Pcs
ZADH-8030	330	100	20.8	16.4	13”	1500 Pcs

Box Dimension (mm)

7” Size **13” Size**