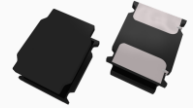


# COIL SPECIFICATION



**Brand** ZenithTek  
**Product Series Code** ZADH - Series  
**File Version** V1.5  
**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

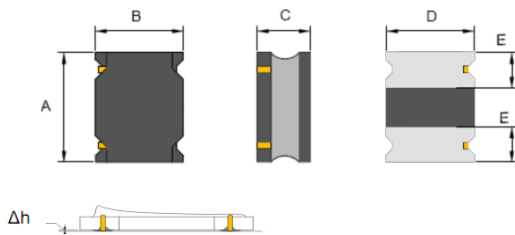
- DC to DC Converter.
- Computing, Mobile, Networking.
- IoT, Gaming, Audio Devices.
- Industrial PC, Storage Devices.

## Product Identification

**ZADH - 252012 ME S - 1R0 M**  
 1            2            3            4            5            6

- 1.Product Code:  
ZADH = ZenithTek Code.
- 2.Dimension Code:  
252012 = 2.50 \* 2.00 \* 1.20 mm
- 3.Type Code:  
ME = Magnetic Epoxy Type.
- 4.Material Code:  
S = Material.
- 5.Inductance Code:  
1R0 = 1.0μH.
- 6.Tolerance Code:  
M = 20%.

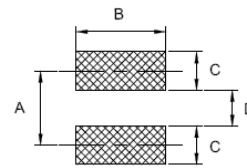
## Dimension (Unit: mm)



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-201610	2.00	1.60	1.00	1.60	0.60
ZADH-252010	2.50	2.00	1.00	2.00	0.80
ZADH-252012	2.50	2.00	1.20	2.00	0.80

## Land Pattern (Unit: mm)



Type	A(Ref.)	B(Ref.)	C(Ref.)	D(Ref.)
ZADH-201610	1.40	1.70	0.70	0.70
ZADH-252010	1.65	2.00	0.85	0.80
ZADH-252012	1.65	2.00	0.85	0.80

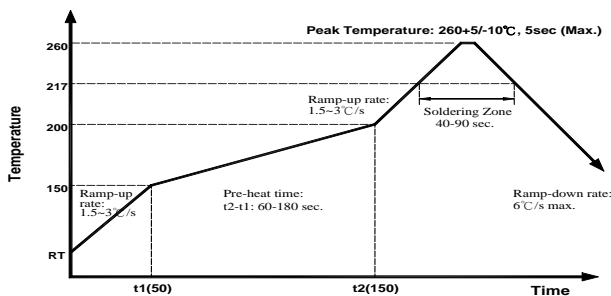
## Product Structure



## 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%.

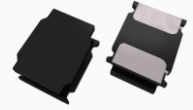
## Test Equipment

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

# COIL SPECIFICATION



**Brand** ZenithTek  
**Product Series Code** ZADH - Series  
**File Version** V1.5  
**Description** SMD Low Profile Magnetic Epoxy Inductor



## Electrical Characteristic

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-201610MES-R16□	0.16	20	1	402	0.031	0.026	4.30	4.80	3.20	3.50
ZADH-201610MES-R24□	0.24	20	1	285	0.040	0.033	3.70	4.10	2.90	3.20
ZADH-201610MES-R33□	0.33	20	1	224	0.040	0.033	2.50	3.10	2.90	3.20
ZADH-201610MES-R47□	0.47	20	1	130	0.059	0.049	2.30	2.85	2.35	2.60
ZADH-201610MES-R68□	0.68	20	1	98	0.076	0.063	1.95	2.45	2.05	2.25
ZADH-201610MES-1R0□	1.00	20	1	97	0.114	0.095	1.65	1.85	1.45	1.60
ZADH-201610MES-1R5□	1.50	20	1	67	0.174	0.145	1.35	1.65	1.25	1.40
ZADH-201610MES-2R2□	2.20	20	1	59	0.264	0.220	1.20	1.45	1.10	1.20
ZADH-201610MES-3R3□	3.30	20	1	47	0.335	0.279	0.90	1.05	0.88	0.98
ZADH-201610MES-4R7□	4.70	20	1	37	0.479	0.399	0.70	0.85	0.74	0.82
ZADH-201610MES-6R8□	6.80	20	1	25	0.816	0.680	0.60	0.70	0.52	0.58
ZADH-201610MES-100□	10	20	1	21	1.020	0.850	0.50	0.55	0.45	0.50

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.

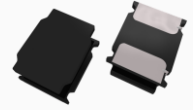
Note 3: Definition of temperature rise current (Irms): DC current that causes the temperature rise (ΔT =40°C ) from 20°C ambient.

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.

# COIL SPECIFICATION



**Brand** ZenithTek  
**Product Series Code** ZADH - Series  
**File Version** V1.5  
**Description** SMD Low Profile Magnetic Epoxy Inductor



## Electrical Characteristic

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-252010MES-R24□	0.24	20	1	360	0.034	0.028	3.60	4.40	2.75	3.00
ZADH-252010MES-R33□	0.33	20	1	270	0.043	0.036	3.80	4.60	2.40	2.65
ZADH-252010MES-R47□	0.47	20	1	170	0.044	0.037	2.40	2.80	2.40	2.65
ZADH-252010MES-R68□	0.68	20	1	110	0.061	0.051	2.75	3.10	2.10	2.35
ZADH-252010MES-1R0□	1.00	20	1	84	0.080	0.067	2.05	2.45	1.80	2.00
ZADH-252010MES-1R5□	1.50	20	1	60	0.108	0.090	1.70	2.05	1.55	1.70
ZADH-252010MES-2R2□	2.20	20	1	56	0.137	0.114	1.55	1.80	1.40	1.55
ZADH-252010MES-3R3□	3.30	20	1	39	0.228	0.170	1.10	1.40	1.10	1.20
ZADH-252010MES-4R7□	4.70	20	1	28	0.323	0.269	1.00	1.15	0.91	1.00
ZADH-252010MES-6R8□	6.80	20	1	25	0.451	0.376	0.82	0.95	0.76	0.84
ZADH-252010MES-100□	10	20	1	20	0.584	0.487	0.65	0.75	0.67	0.74
ZADH-252010MES-150□	15	20	1	19	0.954	0.795	0.55	0.65	0.50	0.55
ZADH-252010MES-220□	22	20	1	15	1.548	1.290	0.45	0.55	0.40	0.45
ZADH-252010MES-330□	33	20	1	10	1.548	1.290	0.25	0.30	0.40	0.45

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.

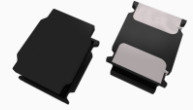
Note 3: Definition of temperature rise current (Irms): DC current that causes the temperature rise (ΔT =40°C ) from 20°C ambient.

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.

# COIL SPECIFICATION



**Brand** ZenithTek  
**Product Series Code** ZADH - Series  
**File Version** V1.5  
**Description** SMD Low Profile Magnetic Epoxy Inductor



## Electrical Characteristic

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-252012MES-R16□	0.16	20	1	380	0.022	0.018	6.50	7.20	4.05	4.50
ZADH-252012MES-R24□	0.24	20	1	260	0.022	0.018	4.00	4.75	4.05	4.50
ZADH-252012MES-R33□	0.33	20	1	230	0.029	0.024	4.00	4.70	3.35	3.70
ZADH-252012MES-R47□	0.47	20	1	170	0.036	0.030	3.70	4.10	3.00	3.30
ZADH-252012MES-R47□1	0.47	20	1	165	0.038	0.032	4.90	5.20	2.90	3.20
ZADH-252012MES-R68□	0.68	20	1	150	0.061	0.051	3.00	3.30	2.10	2.30
ZADH-252012MES-R68□1	0.68	20	1	150	0.042	0.035	3.20	3.50	2.50	2.70
ZADH-252012MES-1R0□	1.00	20	1	85	0.044	0.037	1.70	1.90	2.20	2.40
ZADH-252012MES-1R2□	1.20	20	1	75	0.078	0.065	2.20	2.50	1.95	2.10
ZADH-252012MES-1R5□	1.50	20	1	75	0.078	0.065	2.00	2.35	1.95	2.10
ZADH-252012MES-2R2□	2.20	20	1	55	0.096	0.080	1.80	1.95	1.80	1.95
ZADH-252012MES-3R3□	3.30	20	1	43	0.144	0.120	1.15	1.25	1.40	1.50
ZADH-252012MES-4R7□	4.70	20	1	36	0.210	0.175	1.10	1.20	1.12	1.25
ZADH-252012MES-6R8□	6.80	20	1	25	0.360	0.300	0.80	1.00	0.95	1.05
ZADH-252012MES-100□	10	20	1	21	0.522	0.435	0.70	0.85	0.79	0.87
ZADH-252012MES-150□	15	20	1	18	1.000	0.830	0.65	0.75	0.57	0.63
ZADH-252012MES-180□	18	20	1	14	1.000	0.830	0.50	0.65	0.57	0.63
ZADH-252012MES-220□	22	20	1	11	1.090	0.910	0.45	0.55	0.54	0.60
ZADH-252012MES-330□	33	20	1	7.50	1.840	1.530	0.35	0.40	0.42	0.46
ZADH-252012MES-470□	47	20	1	8.90	2.220	1.850	0.25	0.30	0.30	0.35
ZADH-252012MES-680□	68	20	1	8.00	3.000	2.500	0.30	0.35	0.28	0.32
ZADH-252012MES-101□	100	20	1	6.00	5.400	4.500	0.22	0.25	0.21	0.24

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.

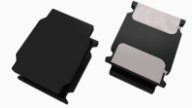
Note 3: Definition of temperature rise current (Irms): DC current that causes the temperature rise (ΔT =40°C ) from 20°C ambient.

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.

# COIL SPECIFICATION



**Brand** ZenithTek  
**Product Series Code** ZADH - Series  
**File Version** V1.5  
**Description** SMD Low Profile Magnetic Epoxy Inductor



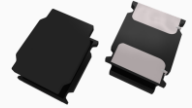
## Reliability Test

No.	Item	Specification	Test Method
1	Temperature Shock.	Appearance: No damage. Inductance: within $\pm 10\%$ of initial.	Temperature: $-40\pm 2^{\circ}\text{C}$ ~ $+125\pm 2^{\circ}\text{C}$ Kept for 30 minutes. Transition time : 5 minutes. 100 Cycles.
2	Humidity Resistance.	Appearance: No damage. Inductance: within $\pm 10\%$ of initial.	Temperature: $40\pm 2^{\circ}\text{C}$ . Relative Humidity: 90%. Duration: 500 +4/-0 hours.
3	High Temperature Resistance.	Appearance: No damage. Inductance: within $\pm 10\%$ of initial.	Temperature: $125\pm 2^{\circ}\text{C}$ . Duration: 1000 +4/-0 hours.
4	Low Temperature Resistance.	Appearance: No damage. Inductance: within $\pm 10\%$ of initial.	Temperature: $-40\pm 2^{\circ}\text{C}$ . Duration: 1000 +4/-0 hours.
5	Vibration test.	Appearance: No damage. Inductance: within $\pm 10\%$ 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 $\pm 10\%$ of initial.	Solder temperature: $260 +0/-5^{\circ}\text{C}$ . Duration: 5 sec. Allowed reflow time: 2 times.
7	Solderability test.	90% or more of electrode area shall be coated by new solder.	Preheating: $160^{\circ}\text{C}$ , 60sec. Solder temperature: $245\pm 5^{\circ}\text{C}$ . Duration : 5 sec.
8	Flexure Strength.	No visible mechanical damage.	Flexure: 2mm. Pressurizing Speed: 0.5mm/sec. Keep time: $30\pm 1$ sec.
9	Terminal Strength.	No visible mechanical damage.	Reflow 2 times. Force: 10N , Keep time: 5 sec , X,Y directs.

# COIL SPECIFICATION

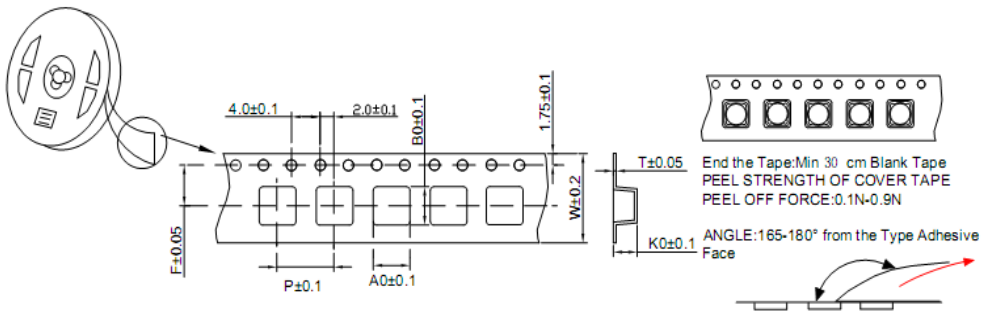


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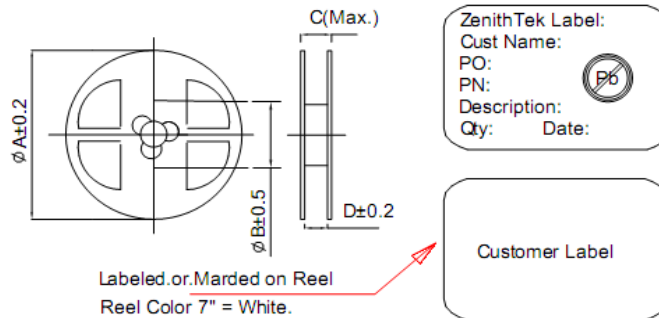
## Package

### Taping Dimension (mm)



Size(mm)	W	P	A0	B0	K0	T	F
ZADH-201610	8.00	4.00	1.90	2.20	1.20	0.25	3.50
ZADH-252010	8.00	4.00	2.45	2.75	1.20	0.25	3.50
ZADH-252012	8.00	4.00	2.45	2.75	1.55	0.25	3.50

### Reel Dimension (mm)



Size(mm)	A	B	C	D	Reel/Size	Qty./Size
ZADH-201610	178	58	14.4	8.4	7"	2000 Pcs
ZADH-252010	178	58	14.4	8.4	7"	2000 Pcs
ZADH-252012	178	58	14.4	8.4	7"	2000 Pcs

### Box Dimension (mm)

