

# COIL SPECIFICATION



ZenithTek

Brand **ZenithTek**  
 Product Series Code **ZTFL - Series**  
 File Version **V1.0**  
 Description **SMD Power Inductor**



## Features

- Low Profile Package.
- High Rated Current.
- Low DC Resistance.
- Halogen Free, Lead Free, RoHS and REACH Compliance.

## Product Identification

**ZTFL - 160865 TG - 1R0 M**

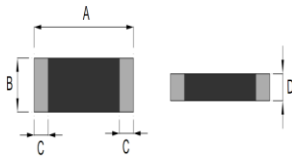
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## Applications

- DC to DC Converter.
- Tablet, Mobile, Wearable Devices.
- HDD, SSD, Storage Devices.
- Thin type Power Supply Module.

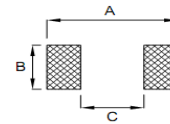
- 1.Product Code:  
ZTFL = ZenithTek Code.
- 2.Dimension Code:  
160865 = 1.60 \* 0.80 \* 0.65 mm
- 3.Type Code:  
TA.TB.TG.
- 4.Inductance Code:  
1R0 = 1.0μH.
- 5.Tolerance Code:  
M = 20%.

## Dimension (Unit: mm)



Type	A(±0.20)	B(±0.20)	C(±0.20)	D(Max.)
ZTFL-160865	1.60	0.80	0.30	0.65
ZTFL-201208	2.00	1.25	0.50	0.80
ZTFL-201210	2.00	1.25	0.50	1.00
ZTFL-201610	2.00	1.60	0.50	1.00
ZTFL-252010	2.50	2.00	0.55	1.00

## Land Pattern (Unit: mm)



Type	A(Ref.)	B(Ref.)	C(Ref.)
ZTFL-160865	1.80	0.90	0.80
ZTFL-201208	2.40	1.30	0.80
ZTFL-201210	2.40	1.30	0.80
ZTFL-201610	2.40	1.80	0.80
ZTFL-252010	2.80	2.00	1.20

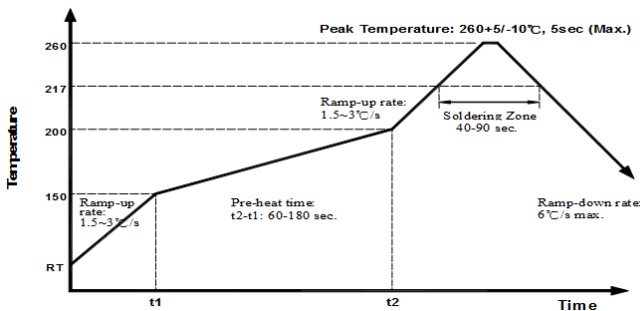
## Product Structure



## 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 Condition

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. : 20°C±2°C / Relative Humidity : 65±5%.

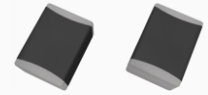
## Test Equipment

LCR Meter : WK-3260B / DC Source : WK-3265B.  
 Resistance Meter : HIOKI-RM3545.  
 Caliper : Mitsutovo 150mm.

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Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (MHz)/(0.1V)	DCR (mΩ)/(Max.)	DCR (mΩ)/(Typ.)	Saturation Current (Isat) (A)/(Max.)	Saturation Current (Isat) (A)/(Typ.)	Temperature Current (Irms) (mA)/(Max.)	Temperature Current (Irms) (mA)/(Typ.)	Thickness (mm)/(Max.)
ZTFL-160865TG-1R0□	1.00	20	1.00	160.00	135.00	1.70	2.00	1.50	1.70	0.65

Note 1: Tolerance Code: M= ±20%, N= ±30%.  
 Note 2: Isat: The DC current at which the inductance decreases approximately 30% from the actual initial value.  
 Note 3: Irms: The DC current at which the temperature rises approximately ΔT=40°C.

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ZTFL-201208TG-R47□	0.47	20	1.00	35.00	31.00	4.00	4.30	3.70	3.90	0.80
ZTFL-201208TG-1R0□	1.00	20	1.00	55.00	48.00	3.20	3.50	3.10	3.30	0.80

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ZTFL-201610TA-R24□	0.24	20	1.00	19.00	15.00	5.90	6.50	4.70	5.50	1.00
ZTFL-201610TA-R47□	0.47	20	1.00	33.00	28.00	4.90	5.40	3.60	4.10	1.00
ZTFL-201610TA-1R0□	1.00	20	1.00	57.00	50.00	3.60	4.00	2.80	3.10	1.00

Note 1: Tolerance Code: M= ±20%, N= ±30%.

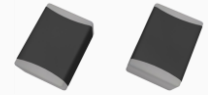
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ZTFL-201610TB-1R0□	1.0	20	1	72	67	2.6	3.3	2.4	2.5	1.00
ZTFL-201610TB-2R2□	2.2	20	1	154	128	1.6	1.7	1.6	1.7	1.00

**Note 1:** Tolerance Code: M= ±20%, N= ±30%.  
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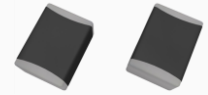
Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (MHz)(0.1V)	DCR (mΩ)(Max.)	DCR (mΩ)(Typ.)	Saturation Current (Isat) (A)(Max.)	Saturation Current (Isat) (A)(Typ.)	Temperature Current (Irms) (mA)(Max.)	Temperature Current (Irms) (mA)(Typ.)	Thickness (mm)(Max.)
ZTFL-201610TG-1R0□	1.00	20	1.00	43.00	38.00	4.20	45.00	4.10	4.30	1.00
ZTFL-201610TG-2R2□	2.20	20	1.00	87.00	73.00	27.00	2.90	2.50	27.00	1.00
ZTFL-201610TG-R47□	0.47	20	1.00	22.00	18.00	5.50	5.90	4.80	5.00	1.00

**Note 1:** Tolerance Code: M= ±20%, N= ±30%.  
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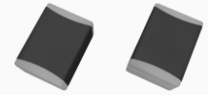
Part Number	Inductance (μH)	Tolerance (%)	Test Frequency (MHz)/(0.1V)	DCR (mΩ)/(Max.)	DCR (mΩ)/(Typ.)	Saturation Current (Isat) (A)/(Max.)	Saturation Current (Isat) (A)/(Typ.)	Temperature Current (Irms) (mA)/(Max.)	Temperature Current (Irms) (mA)/(Typ.)	Thickness (mm)/(Max.)
ZTFL-252010TB-R33M	0.33	20	1.00	22.00	18.00	6.50	7.00	5.00	5.50	1.00
ZTFL-252010TB-R47M	0.47	20	1.00	29.00	25.00	5.00	5.80	4.00	4.50	1.00
ZTFL-252010TB-1R0M	1.00	20	1.00	50.00	43.00	3.80	4.20	3.10	3.50	1.00
ZTFL-252010TB-1R5M	1.50	20	1.00	78.00	67.00	3.00	3.50	2.60	3.00	1.00
ZTFL-252010TB-2R2M	2.20	20	1.00	97.00	81.00	2.30	2.80	2.10	2.50	1.00

**Note 1:** Tolerance Code: M= ±20%, N= ±30%.  
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ZTFL-252010TG-R47M	0.47	20	1.00	23.00	18.00	6.10	6.50	4.90	5.60	1.00
ZTFL-252010TG-1R0M	1.00	20	1.00	35.00	30.00	4.50	4.80	4.10	4.30	1.00
ZTFL-252010TG-2R2M	2.20	20	1.00	77.00	70.00	2.50	2.70	2.60	2.76	1.00

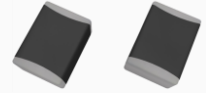
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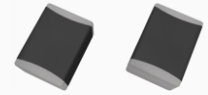
## Reliability Test

No.	Item	Specification	Test Method
1	Temperature Shock.	Appearance: No damage. Inductance: within $\pm 20\%$ of initial.	Temperature: $-40\pm 2^{\circ}\text{C} \sim +85\pm 2^{\circ}\text{C}$ Kept for 30 minutes. Transition time : 5 minutes. Repeat : 100 Cycles.
2	Humidity Resistance.	Appearance: No damage. Inductance: within $\pm 20\%$ of initial.	Temperature: $60\pm 2^{\circ}\text{C}$ . Relative Humidity: 85%. Duration: $500 \pm 12$ hours. Measurement : After exposure in the room condition for 24 hours.
3	High Temperature Resistance.	Appearance: No damage. Inductance: within $\pm 20\%$ of initial.	Temperature: $125\pm 2^{\circ}\text{C}$ . Duration: $500 \pm 12$ hours. Measurement : After exposure in the room condition for 24 hours.
4	Low Temperature Resistance.	Appearance: No damage. Inductance: within $\pm 20\%$ of initial.	Temperature: $-40\pm 2^{\circ}\text{C}$ . Duration: $500 \pm 12$ hours. Measurement : After exposure in the room condition for 24 hours.
5	Vibration test.	Appearance: No damage. Inductance: within $\pm 20\%$ 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 $\pm 20\%$ of initial.	Solder temperature: $260\pm 5^{\circ}\text{C}$ . Duration: $10\pm 0.5$ sec. Allowed reflow time: 2 times.
7	Solderability test.	90% or more of electrode area shall be coated by new solder.	Preheating: $160^{\circ}\text{C}$ , 2 min. Solder temperature: $245\pm 5^{\circ}\text{C}$ . Duration : $4\pm 1$ sec.
8	Flexure Strength.	No visible mechanical damage.	Flexure: 2mm. Pressurizing Speed: 0.5mm/sec. Keep time: 5sec.
9	Terminal Strength.	No visible mechanical damage.	Force: 5N Keep time: $10\pm 1$ sec $\cdot$ X,Y directs.
10	Dropping.	No visible mechanical damage. Inductance: within $\pm 20\%$ of initial.	Drop component 10 times on a concrete floor from a height of 100cm.

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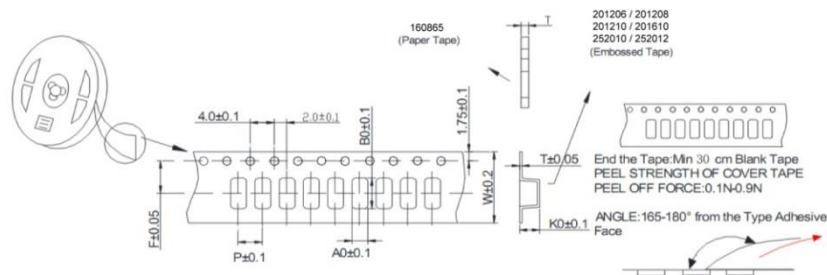


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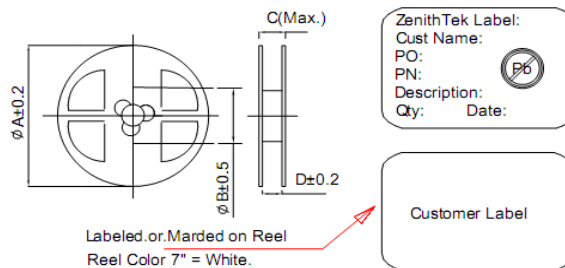
## Package

### Taping Dimension (mm)



Size(mm)	W	P	A0	B0	K0	T	F
ZTFL-160865	8.00	4.00	1.10	1.90	0.68	0.30	3.50
ZTFL-201208	8.00	4.00	1.48	2.27	0.90	0.30	3.50
ZTFL-201610	8.00	4.00	1.83	2.23	1.10	0.30	3.50
ZTFL-252010	8.00	4.00	2.30	2.80	1.10	0.30	3.50

### Reel Dimension (mm)



Size(mm)	A	B	C	D	Reel/Size	Qty./Size
ZTFL-160865	180	60	11.4	9.0	7"	4000 Pcs
ZTFL-201208	180	60	11.4	9.0	7"	3000 Pcs
ZTFL-201610	180	60	11.4	9.0	7"	3000 Pcs
ZTFL-252010	180	60	11.4	9.0	7"	3000 Pcs

### Box Dimension (mm)

