

# Trans-inductor Voltage Regulator (TLVR) Coupled Inductor



**ATL-1Z100512S**

Request Samples



Check Inventory



**10.0 x 5.0 x 12.00 mm**  
**RoHS/RoHS II Compliant**  
**MSL Level = 1**

## Features

- Ferrite Core
- High Saturation current, up to 127A
- Minimized DC losses due to DCR as low as 0.125mΩ
- Inductance up to 170nH
- Low interwinding capacitance at 10pf maximum.
- Compact size for dense designs

## Applications

- Servers and data centers
- Networking and telecommunication systems
- Industrial automation and control
- Voltage Regulator Module (VRM) for FPGAs, ASICs and microprocessors
- Point-of-Load (PoL) and Multiphase DC-DC converters

## Electrical Specifications

Part Number	OCL@ 0ADC ±10%	OCL@ Isat1 Min	Leakage Inductance Max	Interwinding Capacitance	DC Resistance ±10%		Isat1	Isat2	Isat3	Irms	
Units	nH	nH	nH	pF	mΩ		A			A	
ATL-1Z100512S	1-4/2-3	1-4	1-4	1-4/2-3	1-4	2-3	1-4			1-4	2-3
ATL-1Z100512SR07KT	70	50	10	10	0.125	0.450	127	110	100	75	35
ATL-1Z100512SR08KT	80	57					111	96	87		
ATL-1Z100512SR09KT	90	64					98	85	77		
ATL-1Z100512SR10KT	100	72					89	77	70		
ATL-1Z100512SR12KT	120	86					74	64	58		
ATL-1Z100512SR15KT	150	108					59	51	46		
ATL-1Z100512SR17KT	170	122					52	45	41		

### Test Conditions:

**Open Circuit Inductance (OCL)@0ADC and @Isat1:** 100KHz, 1.0Vrms

**Isat1:** DC current at which the inductance drops 20% from its nominal value at 25°C.

**Isat2:** DC current at which the inductance drops 20% from its nominal value at 100°C.

**Isat3:** DC current at which the inductance drops 20% from its nominal value at 125°C.

**Irms:** DC current that causes the temperature rise ( $\Delta T$ , approximate 40°C) from 25°C ambient.

**Max Operating Voltage:** 80V

**Core to windings breakdown Voltage:** 200V

**Operating Temperature:** -40°C ~ +125°C (including self-temperature rise)

**Storage Condition:** -40°C ~ +125°C (on board), -10°C ~ +40°C (with packaging) and R.H. 60 max.

**ATL-1Z100512S Series is RoHS Compliant and Pb free.**



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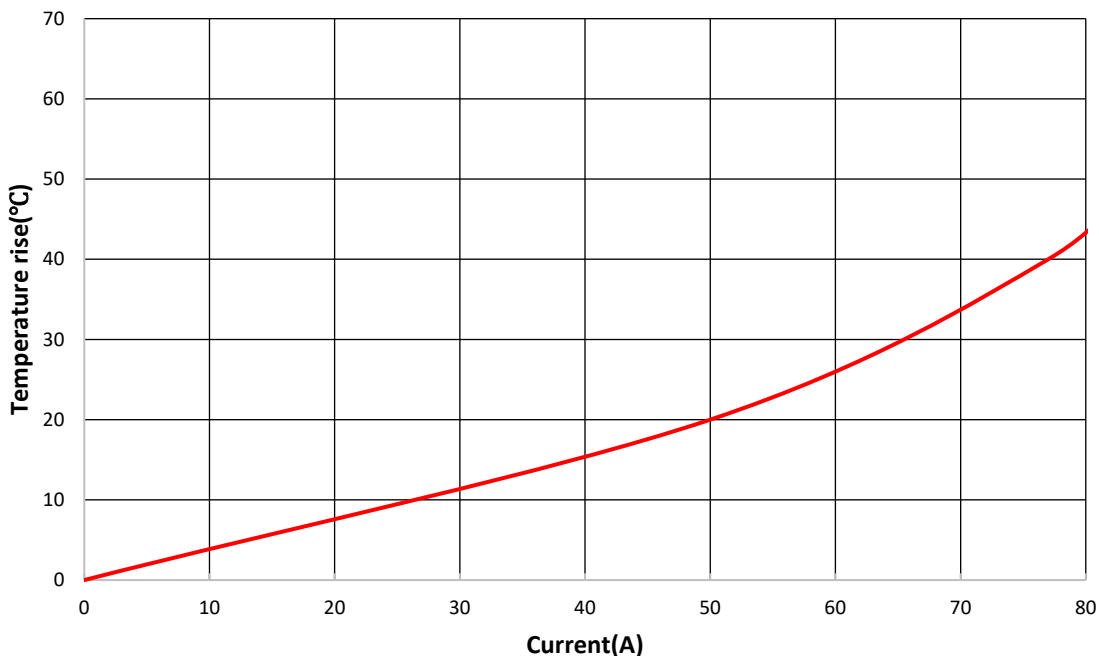
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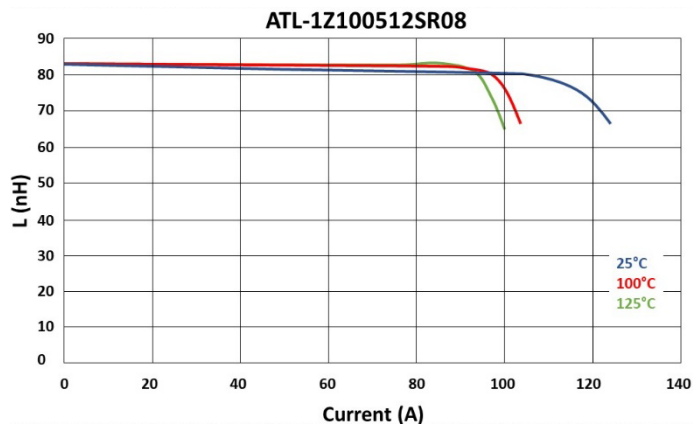
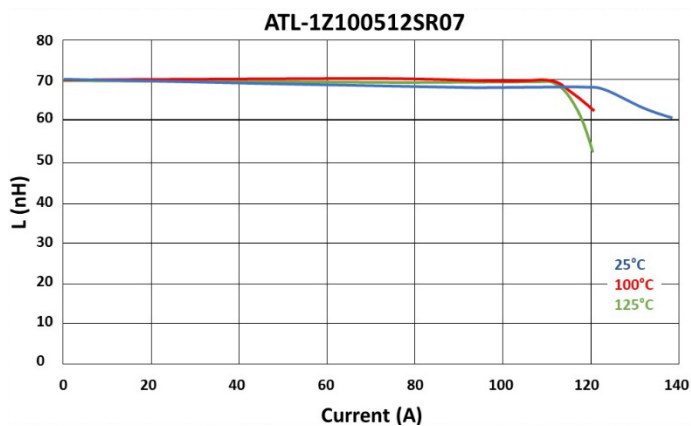
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## Performance Graphs

### ATL-1Z100512S Series-Temperature Rise vs Current



### Saturation Graphs for ATL-1Z100512S Series (Ambient of 25°C, 100°C and 125°C)



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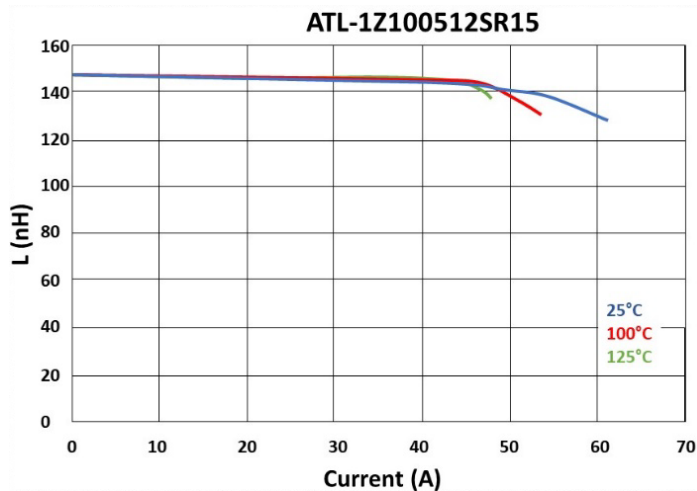
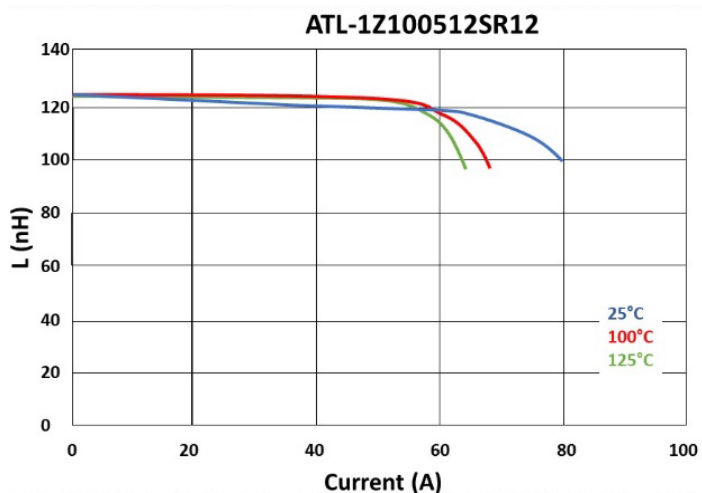
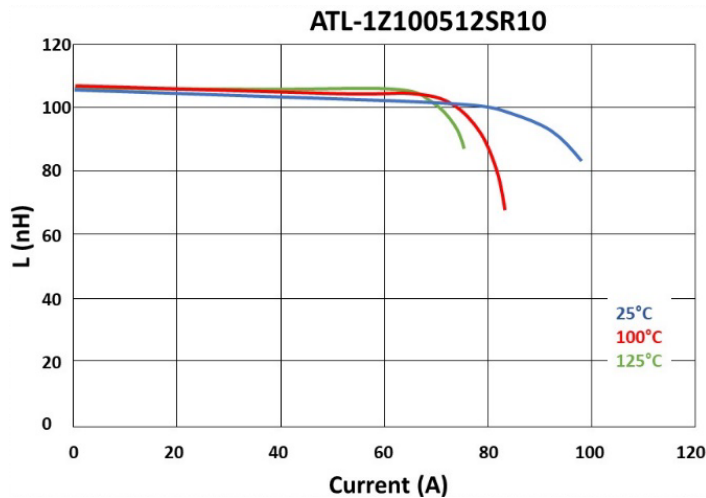
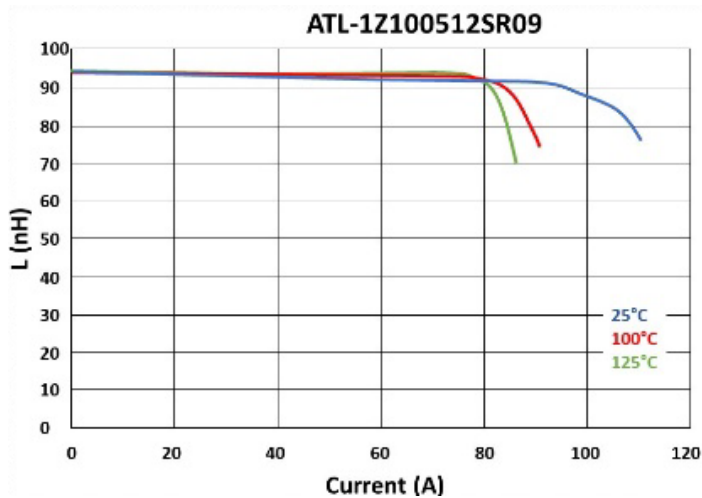
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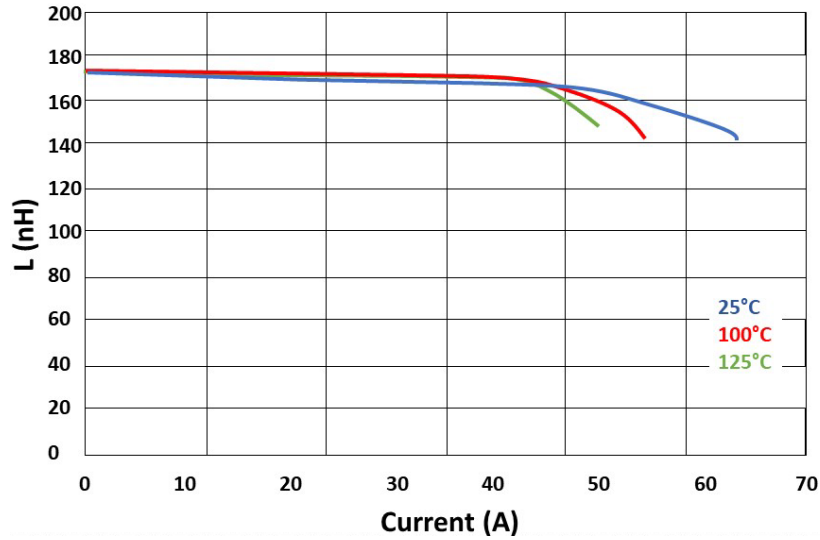


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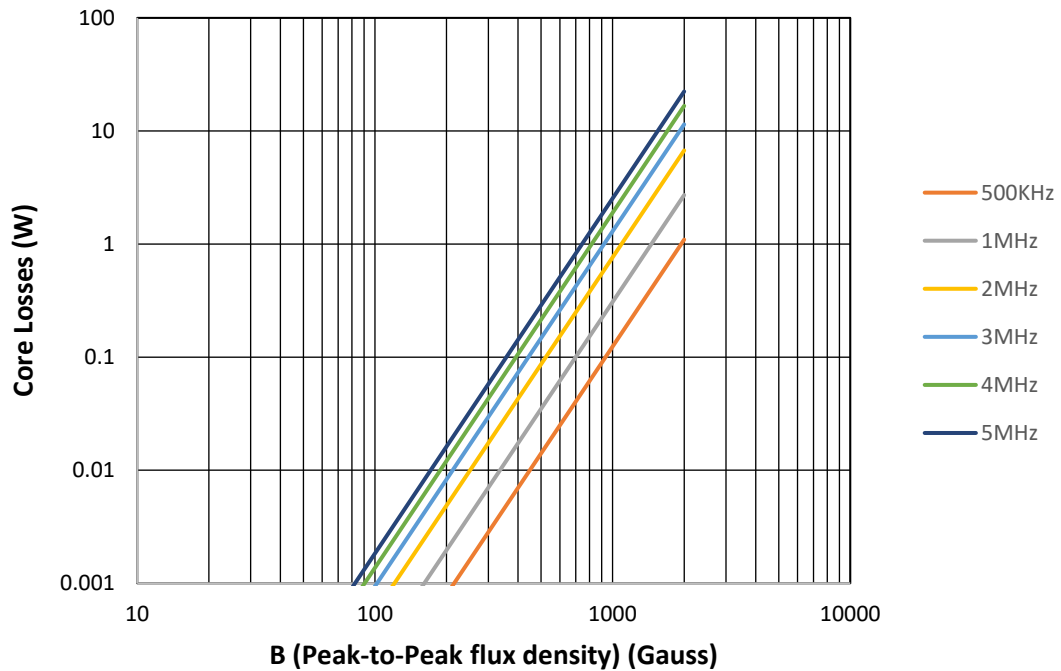


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**ATL-1Z100512SR17**



**Core Losses of ATL-1Z100512S Series**



$$\Delta B(\text{Gauss}) = 0.33 * L(\text{nH}) * \Delta I(\text{Amps})$$

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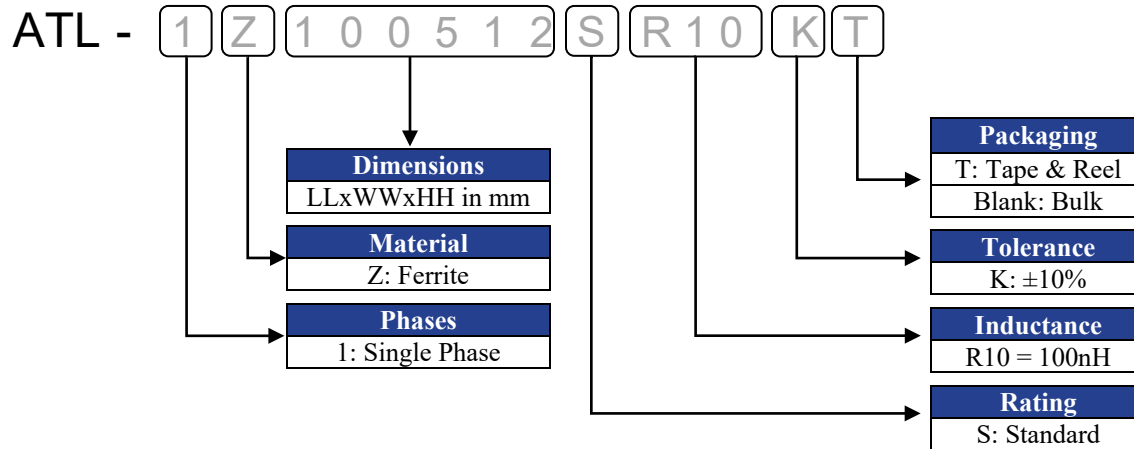


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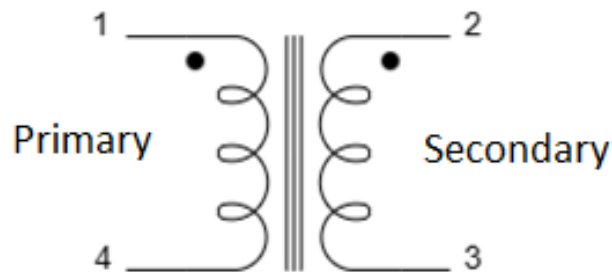
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## Part Identification



\*Only part numbers listed in the Electrical Specs table are available. For custom builds, please contact Abracon.

## Schematic



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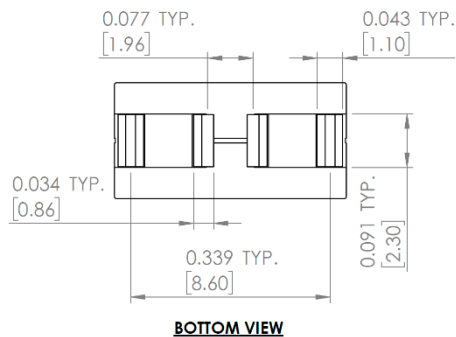
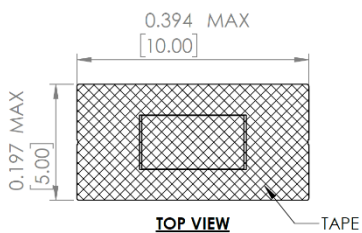
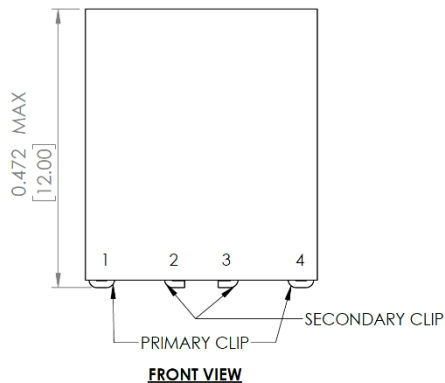


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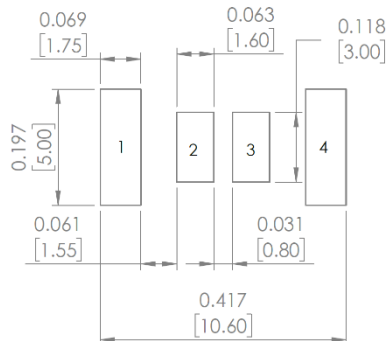


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## Mechanical Specifications

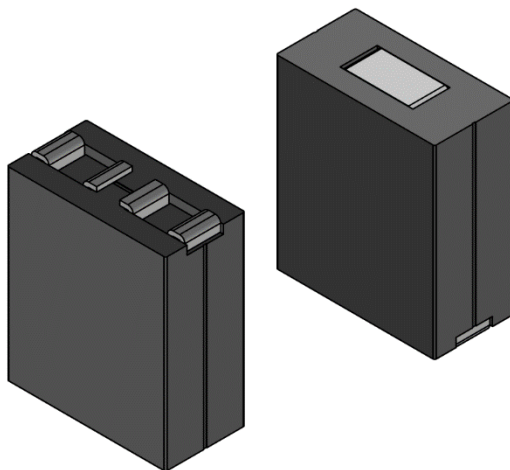


## Recommended Land Pattern



Dimensions: Inches[mm]

## General Appearance



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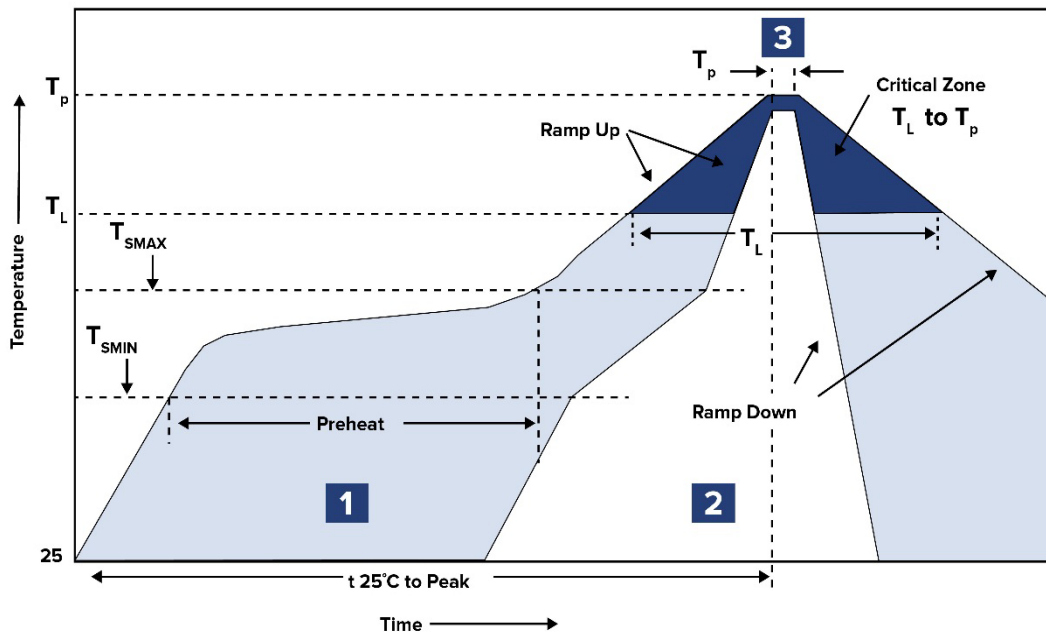


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## Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C	60 ~ 120 sec.
2	Reflow	$T_L$ 217°C	60 ~ 150 sec.
3	Peak Temperature	$T_c$ 260°C	5 sec. max

Max. ramp up rate: 3°C/sec.

Max. ramp down rate: 6°C/sec.

Time from 25°C to peak Temperature: 8mins max.

Ref. Solder paste: Sn/3.0Ag/0.5Cu



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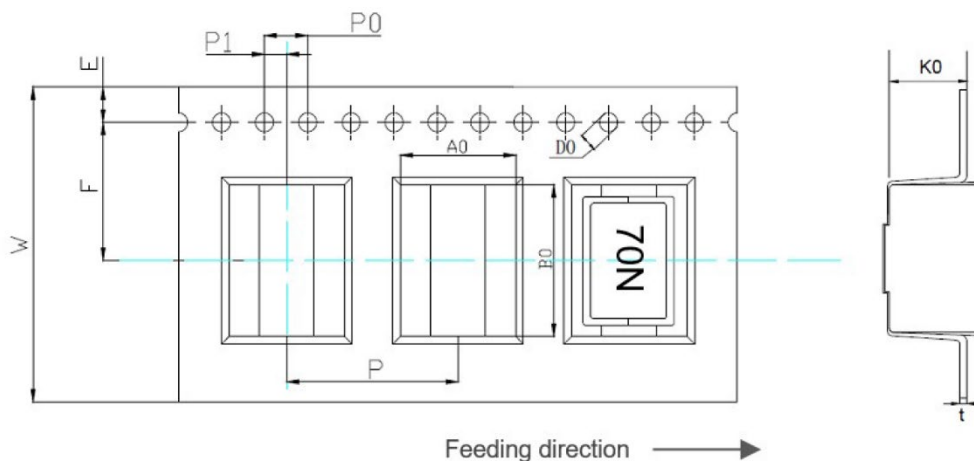
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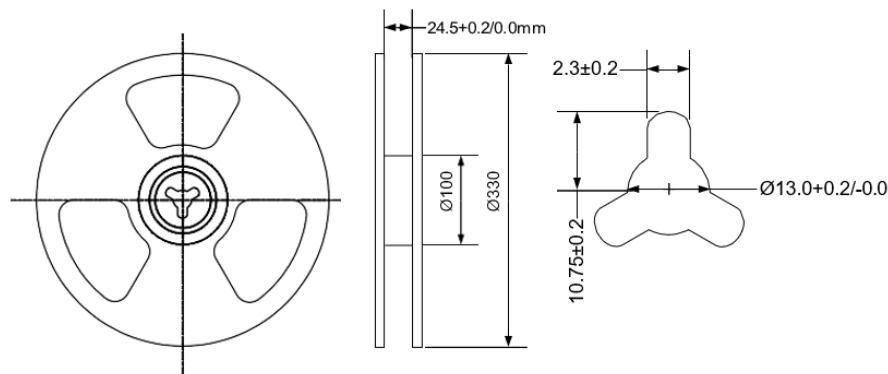
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## Packaging

**Tape & Reel: 300 pcs/reel**



Series	W	E	F	P	P0	P1	D0	A0	B0	t	K0
ATL-1Z100512S	24.00 ±0.30	1.75 ±0.10	11.50 ±0.10	16.00 ±0.10	4.00 ±0.10	2.00 ±0.10	1.50 ±0.10	5.20 ±0.10	10.20 ±0.10	0.40 ±0.05	12.20 ±0.10



**Dimensions: mm**

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