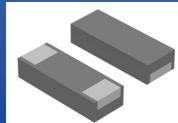


# Molded Ultra-thin Power Inductor

**AVR-1M010424S**

Request Samples

Check Inventory

10.6 x 4.0 x 2.2mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Features

- Metal Alloy
- Low DCR, High Efficiency
- High temperature-rise current rating
- High saturation current rating
- Low Profile

## Applications

- Single and Multiphase DC-DC converters
- Voltage regulator modules (VRMs)
- Renewable energy, Power inverters, DC links
- Electric Vehicles (EVs)
- Telecom infrastructure, datacenters, servers and switches
- Industrial and robotics equipment
- Medium and high-power switch mode power supplies (SMPS)

## Electrical Specifications @ 25°C

Part Number*	Inductance	Inductance Tolerance	DC Resistance		Saturation Current		Temperature Rise Current		
			1MHz/1.0V	Typ.	Max.	Typ.	Max.	Typ.	
Units	nH	%	mΩ	A		A		A	
Symbol	L	M	DCR	Isat		Irms		Irms	
AVR-1M010424S75NM	75	20%	0.4 ±5%	60	65	45	50		

\*For full orderable part number, please refer to the [Part Identification](#) section.

## Test Conditions:

**Isat:** DC current at which the inductance drops 30% from its nominal value at 25°C.

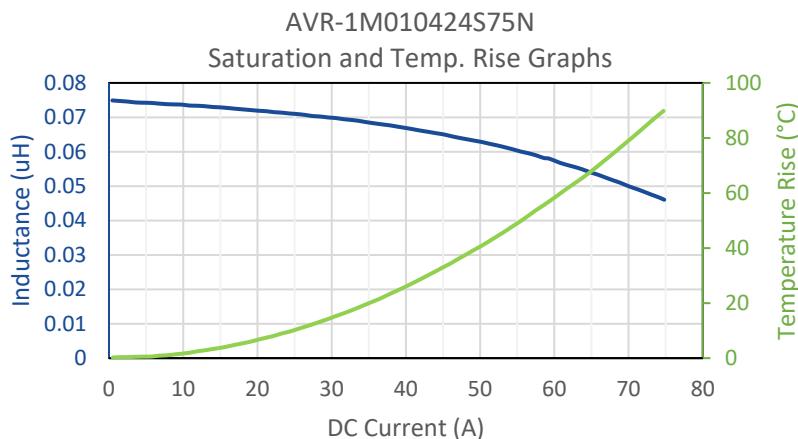
**Irms:** DC current that causes the temperature rise ( $\Delta T$ , approximate 40 °C) from 20°C ambient.

**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. 85% max.

**AVR-1M010424S Series is RoHS Compliant and Pb free.**

## Performance Graphs

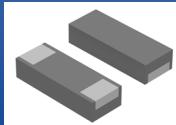


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## Part Identification

AVR-1M010424S

### Inductance Code

See Electrical Specification table  
e.g. 75N for 75nH

### Tolerance

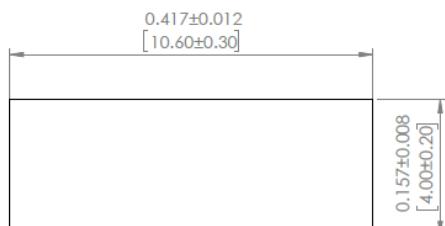
M =  $\pm 20\%$

### Packaging options

T: Tape and Reel (See Packaging)  
B: Bulk

\*Tolerance only available as  
indicated in electrical spec. table

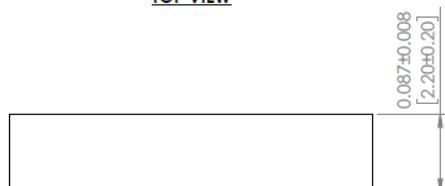
## Mechanical Specifications



TOP VIEW



SIDE VIEW



FRONT VIEW

### RECOMMENDED LAND PATTERN



BOTTOM VIEW

Dimensions: Inches [mm]

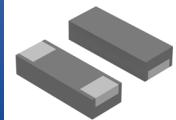
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MSL Level = 1

## Reflow Profile

Reflow standard: [JEDEC J-STD-020]

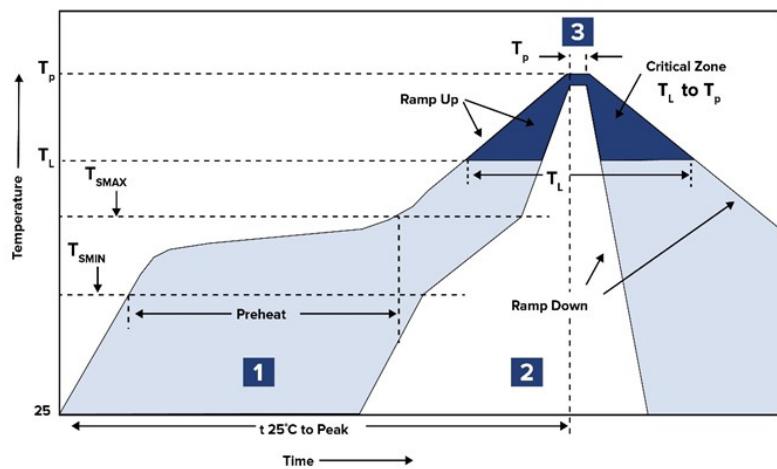


Table 1

### SnPb Eutectic Process Classification Temperatures ( $T_c$ )

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

### Pb-Free Process Classification Temperatures ( $T_c$ )

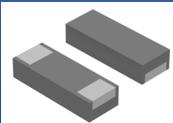
Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum ( $T_{\text{smin}}$ )	100°C	150°C
Temperature maximum ( $T_{\text{smax}}$ )	150°C	200°C
Time ( $T_{\text{smin}}$ to $T_{\text{smax}}$ ) ( $t_s$ )	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate ( $T_{\text{smax}}$ to $T_p$ )	3°C/sec. max	3°C/sec. max
Liquidous temperature ( $T_L$ )	183°C	217°C
Time at liquidous ( $t_L$ )	60 - 150 sec.	60 - 150 sec.
Peak package body temperature ( $T_p$ )*	see Table 1	see Table 2
Time ( $t_p$ )** within 5°C of the specified classification temperature ( $T_c$ )	20 sec.	30 sec.
Ramp-down rate ( $T_p$ to $T_{\text{smax}}$ )	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

\*\*Tolerance for time at peak profile temperature ( $t_p$ ) is defined as supplier minimum and a user maximum.

# Molded Ultra-thin Power Inductor



AVR-1M010424S

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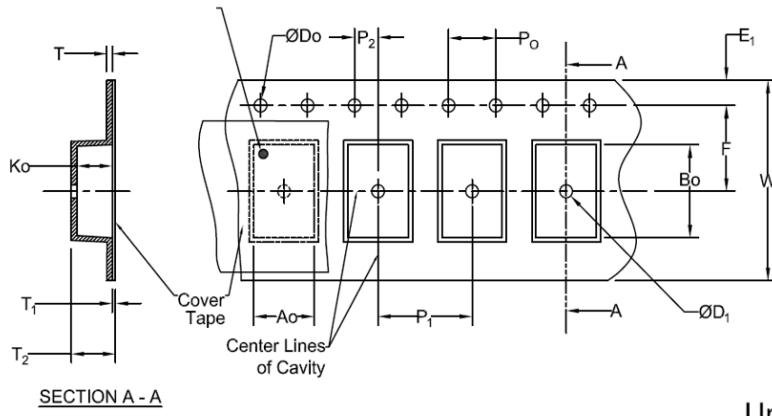
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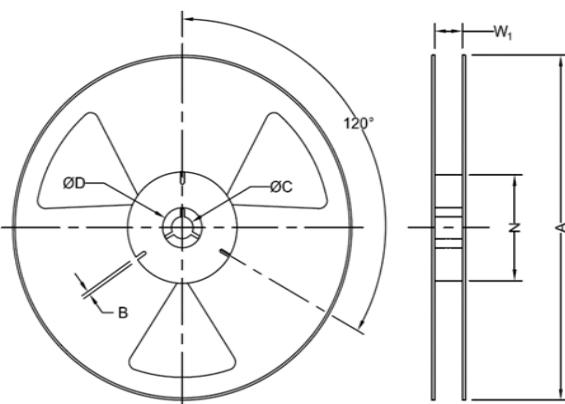
## Packaging

Tape & Reel: 2500 pcs/reel



Unit: mm

Tape Specifications (mm)							
Width (W)	Ao	Bo	Do	D1 (Min)	E1	F	Ko
24mm	4.5 Ref	11.4 Ref	1.5+0.1/-0.0	1.0	1.75±0.1	11.5±0.10	2.7 Ref
	P1	P2	P0	T (Max)	T1 (Max)	T2 (Max)	W (Max)
	8.0±0.1	2.0±0.1	4.0±0.1	0.6	0.1	*	24.3



Unit: mm

Reel Specifications (mm)						
Width	A (Nom)	B (Min)	C (Min)	D (Min)	N (Min)	*W1
24mm	330	1.5	13.0+0.5/-0.2	20.2	100	24.4+2.0/-0.0

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