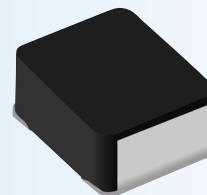


SRP2010PA SERIES  
Shielded Power Inductors

\*RoHS COMPLIANT  
AEC-Q200 COMPLIANT &  
\*\*HALOGEN FREE

## Features

- Shielded construction for low radiation
- Metal alloy powder core
- High saturation current
- Low profile
- AEC-Q200 compliant
- RoHS compliant\* and halogen free\*\*

## Applications

- Automotive systems
- DC-DC converters
- Miniature electronic devices

## Sustainability

- ISO 14001, low-impact energy
- Responsibly sourced and produced
- Meets EU 94/62/EC standards

## Product Overview

The Bourns® SRP2010PA Series Shielded Power Inductors feature a metal alloy powder core and shielded construction to minimize magnetic field radiation while supporting tight component placement on densely packed automotive

PCBs. These power inductors deliver saturation currents up to 9 A in a low profile design and operate across a -40 to +145 °C temperature range.

Electrical Specifications (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

| Bourns Part Number | Inductance @ 1 MHz/1 V |                  | Q<br>Typ. | SRF<br>(MHz)<br>Typ. | DCR<br>(mΩ)<br>Typ. | DCR<br>(mΩ)<br>Max. | I <sub>rms</sub><br>(A)<br>Typ. | I <sub>sat</sub><br>(A)<br>Typ. |
|--------------------|------------------------|------------------|-----------|----------------------|---------------------|---------------------|---------------------------------|---------------------------------|
|                    | L<br>(μH)              | Tolerance<br>(%) |           |                      |                     |                     |                                 |                                 |
| SRP2010PA-R10M     | 0.10                   | ±20              | 30        | >120                 | 10                  | 12                  | 6.6                             | 9.0                             |
| SRP2010PA-R15M     | 0.15                   | ±20              | 30        | >120                 | 10                  | 16                  | 7.5                             | 10.0                            |
| SRP2010PA-R22M     | 0.22                   | ±20              | 30        | >120                 | 15                  | 19                  | 6.0                             | 7.9                             |
| SRP2010PA-R24M     | 0.24                   | ±20              | 30        | >120                 | 17                  | 20                  | 5.8                             | 6.8                             |
| SRP2010PA-R33M     | 0.33                   | ±20              | 30        | >120                 | 21                  | 26                  | 4.7                             | 6.1                             |
| SRP2010PA-R47M     | 0.47                   | ±20              | 30        | >120                 | 27                  | 33                  | 4.5                             | 5.4                             |
| SRP2010PA-R56M     | 0.56                   | ±20              | 30        | >120                 | 29                  | 35                  | 4.2                             | 5.0                             |
| SRP2010PA-R68M     | 0.68                   | ±20              | 30        | >120                 | 40                  | 47                  | 4.0                             | 4.7                             |
| SRP2010PA-1R0M     | 1.00                   | ±20              | 30        | 90                   | 56                  | 65                  | 3.2                             | 3.3                             |
| SRP2010PA-1R5M     | 1.50                   | ±20              | 30        | 80                   | 86                  | 99                  | 2.4                             | 3.1                             |
| SRP2010PA-2R2M     | 2.20                   | ±20              | 30        | 60                   | 117                 | 140                 | 2.2                             | 2.4                             |

## General Specifications

Operating Temperature... -40 °C to +145 °C (Temperature rise included)  
 Storage Temperature... -50 °C to +145 °C (On-board)  
 Temperature Rise... 40 °C at rated I<sub>rms</sub>  
 Inductance Drop... 30 % typ. at I<sub>sat</sub>  
 Weight... 0.019 g  
 Moisture Sensitivity Level... 1  
 ESD Classification (HBM)... N/A

## Materials

Core ..... Metal alloy powder  
 Wire ..... Enameled Copper  
 Terminal Finish ..... Cu/Ni/Sn  
 Packaging ..... 3,000 pcs. per 7-inch reel

## Contact Information

| <a href="http://www.bourns.com">www.bourns.com</a> | Phone            | Email                                                        |
|----------------------------------------------------|------------------|--------------------------------------------------------------|
| Asia-Pacific                                       | +886-2 2562-4117 | <a href="mailto:asiacus@bourns.com">asiacus@bourns.com</a>   |
| Europe                                             | +36 88 885 877   | <a href="mailto:eurocus@bourns.com">eurocus@bourns.com</a>   |
| Mexico                                             | +52 614 478 0400 | <a href="mailto:mexicus@bourns.com">mexicus@bourns.com</a>   |
| The Americas                                       | +1-951 781-5500  | <a href="mailto:americus@bourns.com">americus@bourns.com</a> |

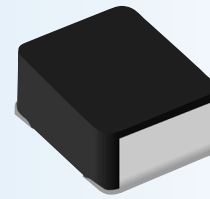
\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

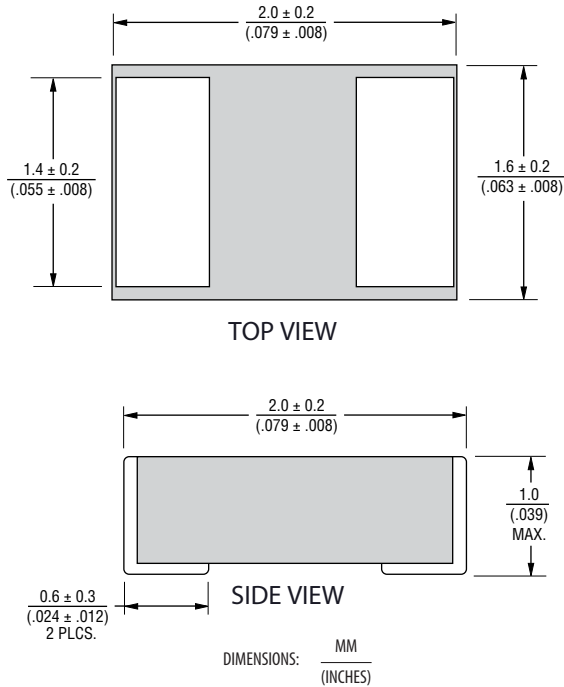
Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

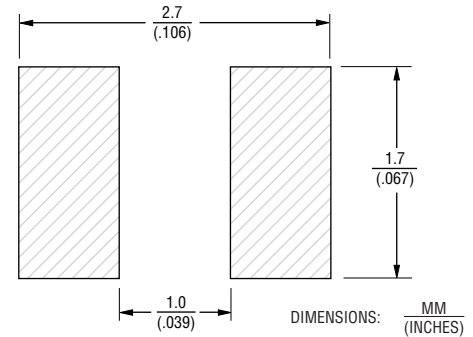
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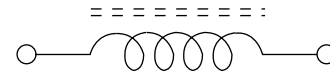
### Product Dimensions



### Recommended Layout



### Electrical Schematic

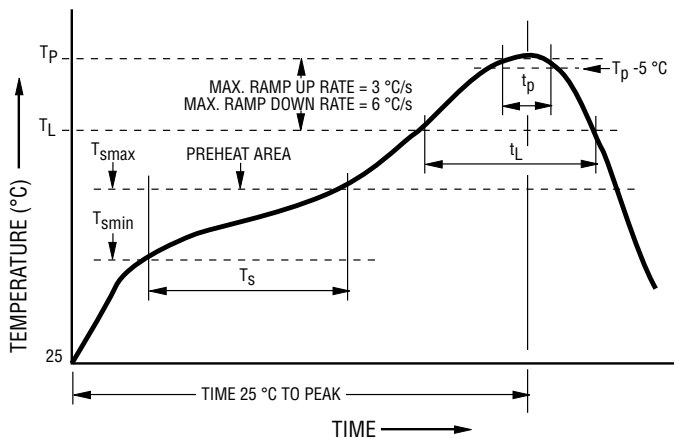


### How to Order

**SRP2010PA - R10 M**

Series \_\_\_\_\_  
Value Code \_\_\_\_\_  
Tolerance \_\_\_\_\_  
M = ±20 %

### Soldering Profile

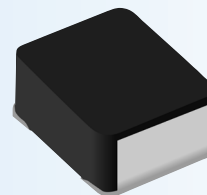


| Profile Feature                                                                                                                           | Pb-Free Assembly                   |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Preheat / Soak:<br>Temperature Min. ( $T_{smin}$ )<br>Temperature Max. ( $T_{smax}$ )<br>Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ ) | 150 °C<br>200 °C<br>60~120 seconds |
| Ramp Up Rate ( $T_L$ to $T_P$ )                                                                                                           | 3 °C / second max.                 |
| Liquidous Temperature ( $T_L$ )<br>Time ( $t_L$ ) maintained above $T_L$                                                                  | 217 °C<br>60~150 seconds           |
| Peak Package Body Temperature ( $T_P$ )                                                                                                   | 260 °C                             |
| Time ( $t_p$ ) within 5 °C of the Peak Temperature ( $T_P$ )                                                                              | < 30 seconds                       |
| Ramp Down Rate ( $T_P$ to $T_L$ )                                                                                                         | 6 °C / second max.                 |
| Time 25 °C to Peak Temperature                                                                                                            | 8 minutes max.                     |

**NOTE:** The product has been tested under this reflow condition. Deviations from this, especially higher temperatures or longer durations, could impact performance.

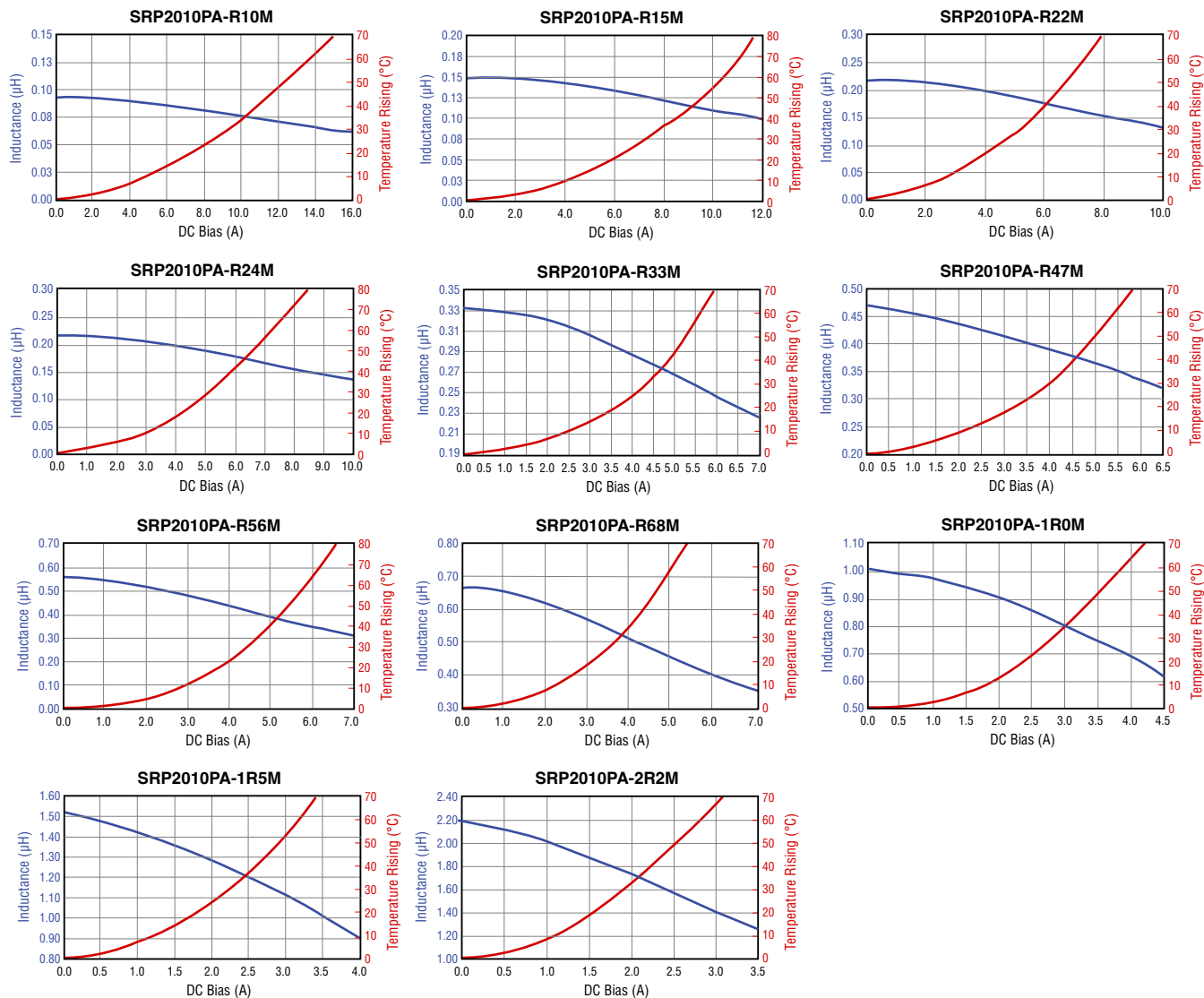
## SRP2010PA SERIES

### Shielded Power Inductors



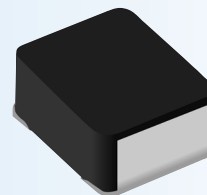
\*RoHS COMPLIANT  
AEC-Q200 COMPLIANT &  
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#### Characteristic Changes vs. IDC

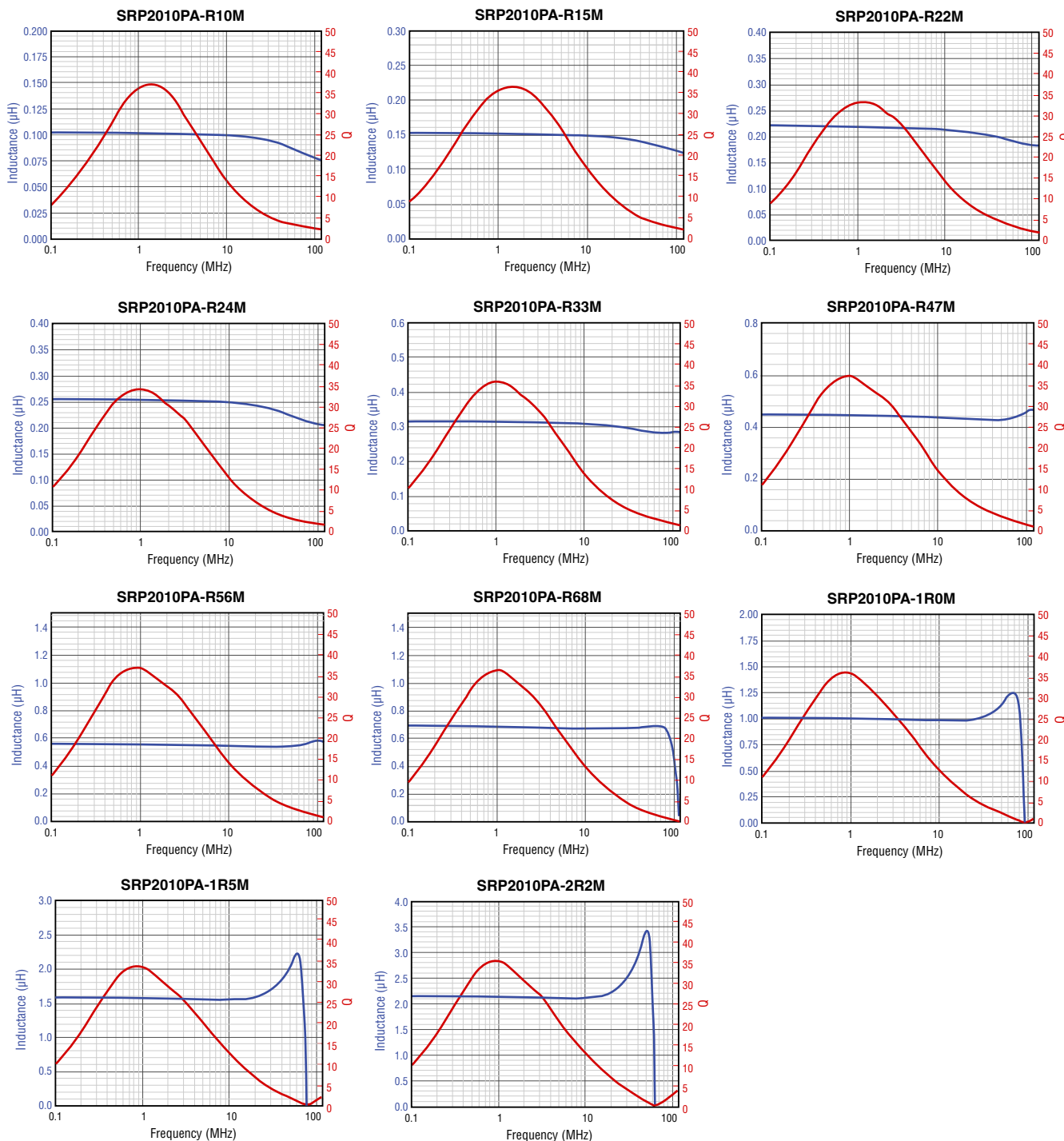


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#### Characteristic Changes vs. Frequency

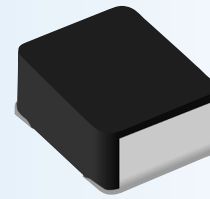


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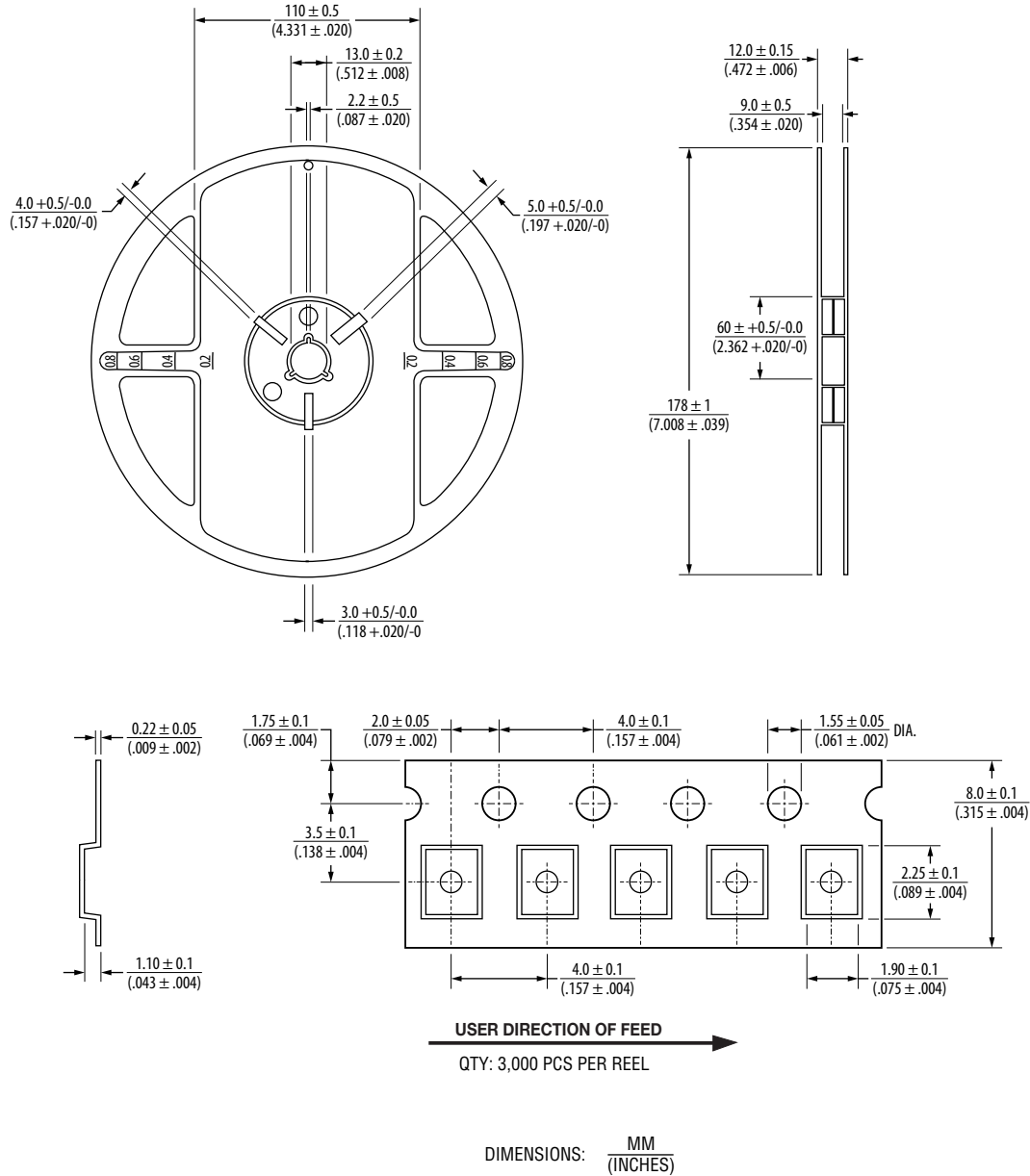
# SRP2010PA SERIES

## Shielded Power Inductors



**\*RoHS COMPLIANT  
AEC-Q200 COMPLIANT &  
\*\*HALOGEN FREE**

### Packaging Specifications



REV. 06/26

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