



## Features

- Shielded construction
- Inductance range: 1 to 100  $\mu$ H
- Heating current up to 3.6 A
- AEC-Q200 qualified
- RoHS compliant\* and halogen free\*\*

## Applications

- Automotive systems:
  - Driver assistant
  - Infotainment
  - Lighting
- DC/DC converters
- Power supplies

# SRR3818A Series - Shielded Power Inductors

## Electrical Specifications @ 25 °C

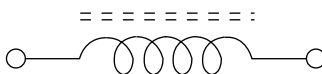
| Bourns Part Number | Inductance @ 100 kHz/0.1 V |          | SRF (MHz) Typ. | DCR (m $\Omega$ ) |      | I rms <sup>1</sup> (A) Typ. | I rms <sup>2</sup> (A) Typ. | I sat (A) |
|--------------------|----------------------------|----------|----------------|-------------------|------|-----------------------------|-----------------------------|-----------|
|                    | L ( $\mu$ H)               | Tol. (%) |                | Typ.              | Max. |                             |                             |           |
| SRR3818A-1R0Y      | 1.0                        | $\pm 30$ | 165            | 27.5              | 37   | 2.75                        | 3.6                         | 2.1       |
| SRR3818A-1R5Y      | 1.5                        | $\pm 30$ | 125            | 33                | 47   | 2.5                         | 3.1                         | 1.6       |
| SRR3818A-2R2Y      | 2.2                        | $\pm 30$ | 95             | 45.5              | 60   | 2                           | 2.6                         | 1.4       |
| SRR3818A-2R7Y      | 2.7                        | $\pm 30$ | 90             | 49.5              | 65   | 1.9                         | 2.5                         | 1.3       |
| SRR3818A-3R3Y      | 3.3                        | $\pm 30$ | 75             | 64.5              | 85   | 1.7                         | 2.1                         | 1.15      |
| SRR3818A-3R9Y      | 3.9                        | $\pm 30$ | 70             | 80                | 105  | 1.6                         | 2                           | 1.05      |
| SRR3818A-4R7Y      | 4.7                        | $\pm 30$ | 60             | 90                | 120  | 1.5                         | 1.9                         | 0.95      |
| SRR3818A-6R8Y      | 6.8                        | $\pm 30$ | 50             | 125               | 160  | 1.25                        | 1.6                         | 0.8       |
| SRR3818A-100M      | 10                         | $\pm 20$ | 40             | 180               | 235  | 1                           | 1.3                         | 0.65      |
| SRR3818A-150M      | 15                         | $\pm 20$ | 30             | 260               | 340  | 0.8                         | 1.05                        | 0.55      |
| SRR3818A-220M      | 22                         | $\pm 20$ | 25             | 395               | 500  | 0.65                        | 0.8                         | 0.43      |
| SRR3818A-330M      | 33                         | $\pm 20$ | 20             | 590               | 740  | 0.5                         | 0.65                        | 0.34      |
| SRR3818A-470M      | 47                         | $\pm 20$ | 15             | 825               | 1030 | 0.45                        | 0.56                        | 0.3       |
| SRR3818A-680M      | 68                         | $\pm 20$ | 13             | 1280              | 1600 | 0.38                        | 0.46                        | 0.24      |
| SRR3818A-101M      | 100                        | $\pm 20$ | 11             | 2040              | 2600 | 0.28                        | 0.34                        | 0.2       |

## How to Order

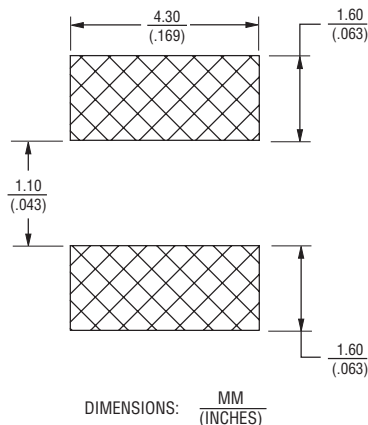
**SRR3818A - 1R0Y**

Model \_\_\_\_\_  
Value Code (see table) \_\_\_\_\_

## Electrical Schematic



## Recommended Layout



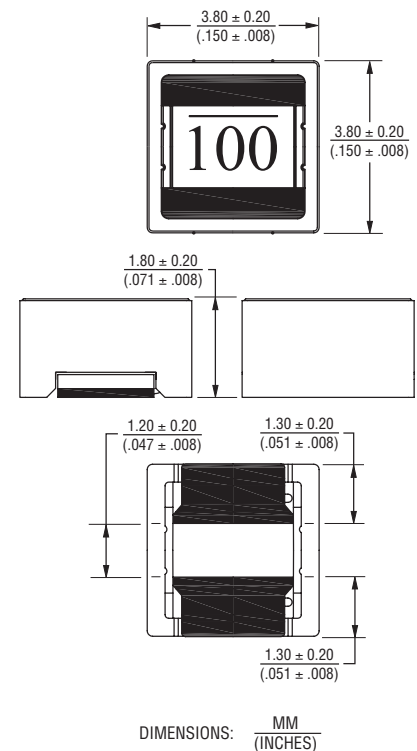
## General Specifications

Operating Temp..... -40 °C to +150 °C  
(Temperature rise included)  
Storage Temperature .. -40 °C to +150 °C  
Temperature Rise  
..... 20 °C typ. at rated I rms<sup>1</sup>  
..... 40 °C typ. at rated I rms<sup>2</sup>  
Rated Current  
..... Inductance drops 35 % at I sat  
Moisture Sensitivity Level ..... 1  
ESD Classification (HBM) ..... 3B

## Materials

Core ..... Ferrite  
Wire ..... Enameled copper  
Terminal Finish ..... Sn  
Packaging ..... 1000 pcs. per 7-inch reel

## Product Dimensions



\*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.

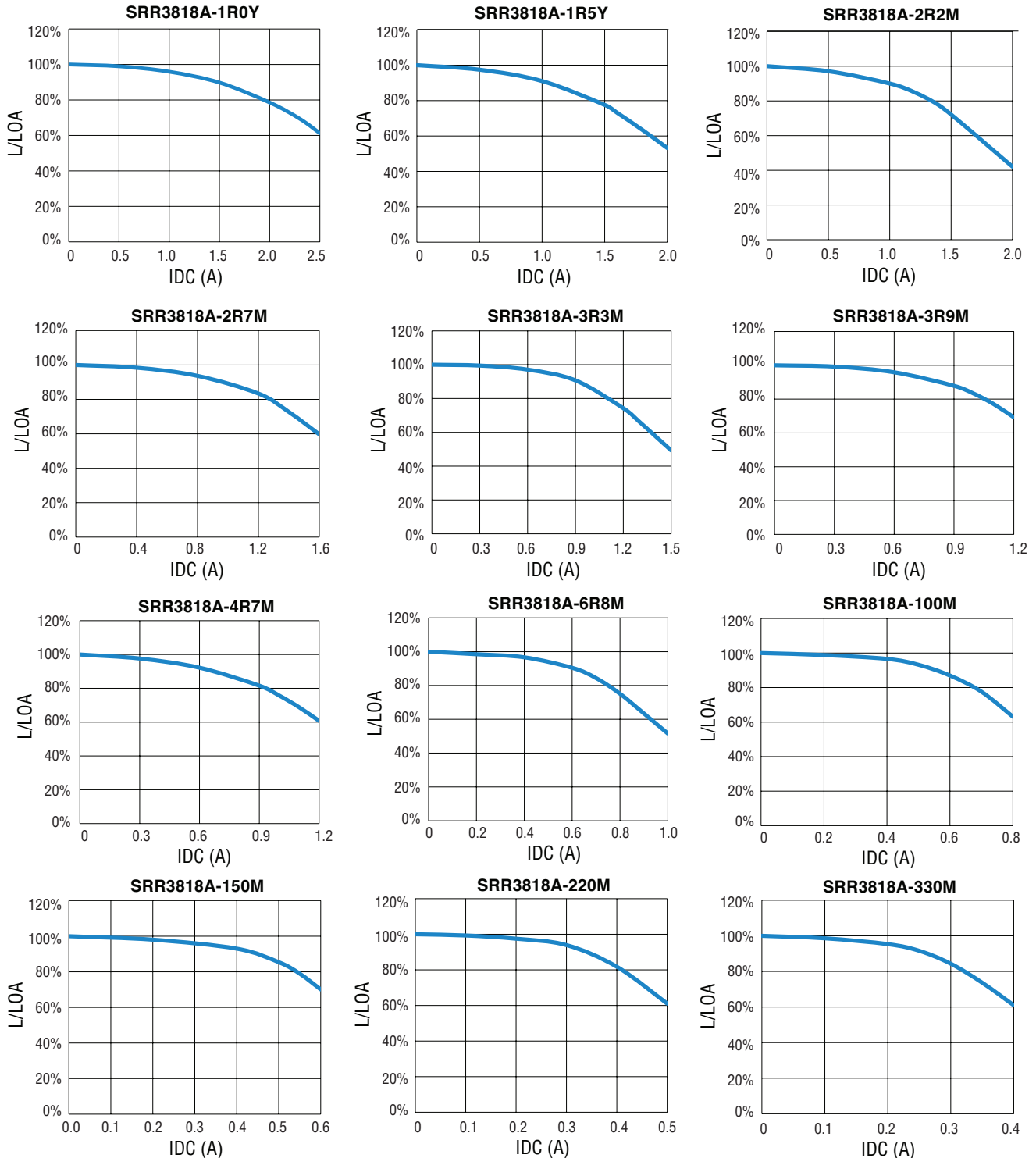
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

# SRR3818A Series - Shielded Power Inductors

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## Inductance vs. IDC



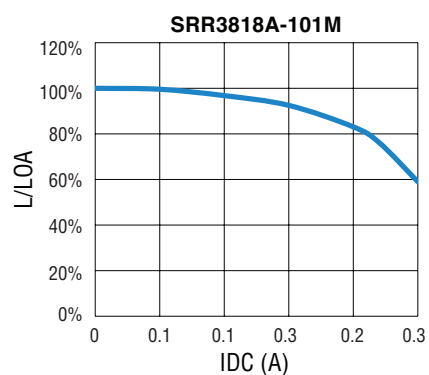
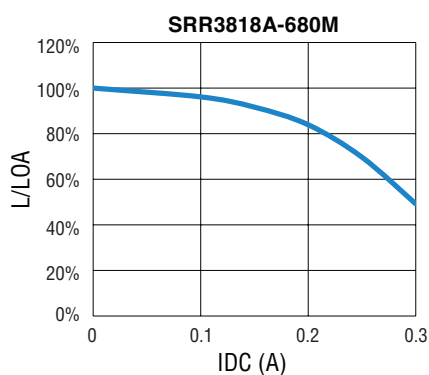
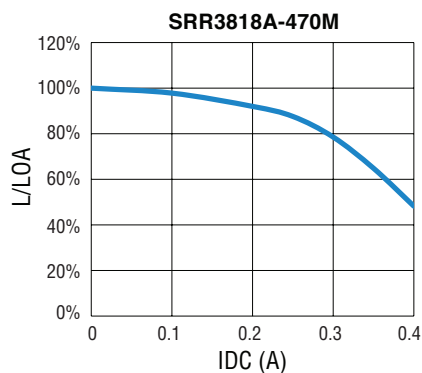
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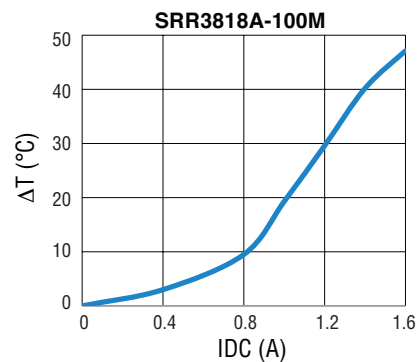
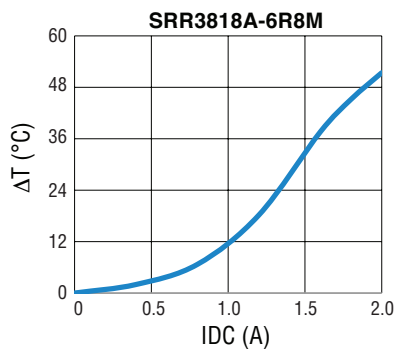
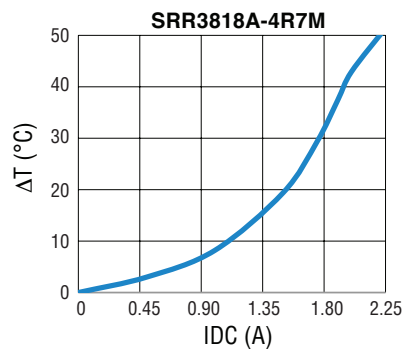
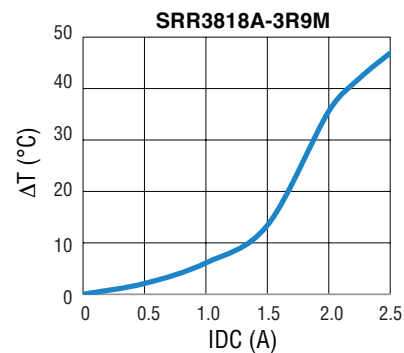
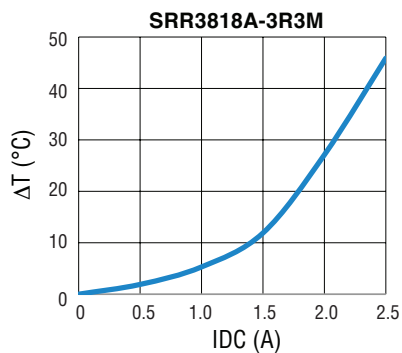
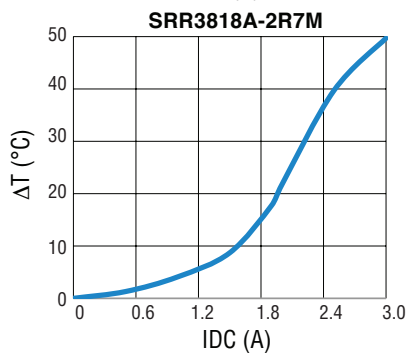
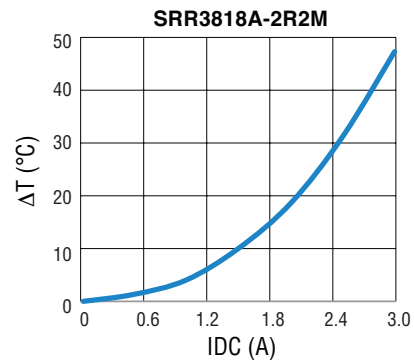
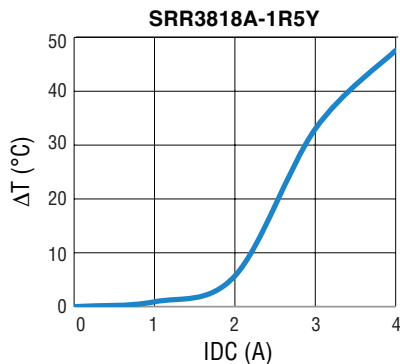
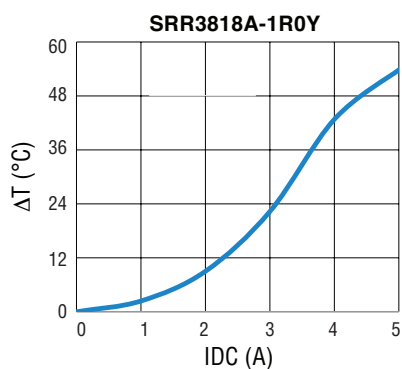
# SRR3818A Series - Shielded Power Inductors

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## Inductance vs. IDC (Continued)



## Temperature vs. IDC



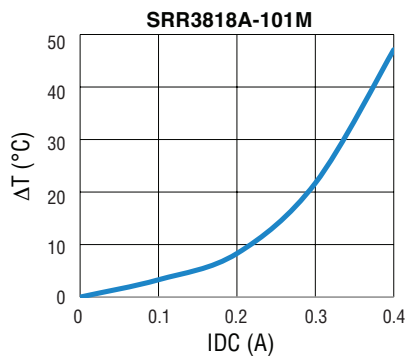
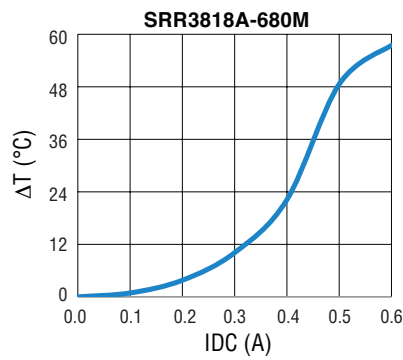
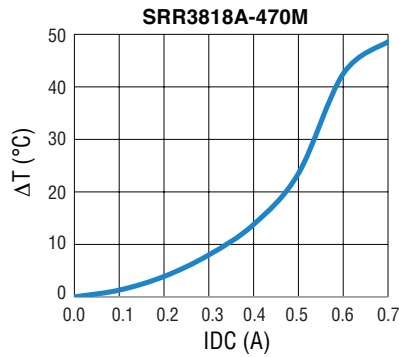
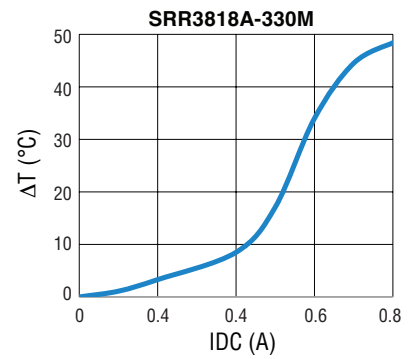
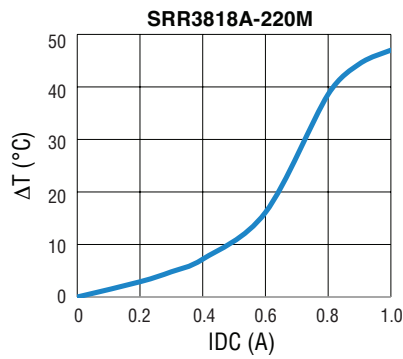
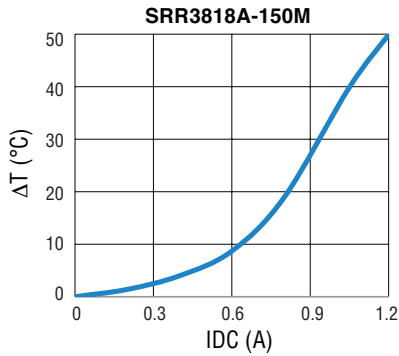
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## SRR3818A Series - Shielded Power Inductors

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### Temperature vs. IDC (Continued)



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The graph illustrates the temperature profile over time for a reflow soldering process. The Y-axis represents Temperature in degrees Celsius (°C), ranging from 0 to 250. The X-axis represents Time in Seconds, ranging from 0 to 250. The profile is divided into four distinct zones:

- Temperature Rising Area:** The initial heating phase, with a maximum rate of  $+4.0\text{ }^{\circ}\text{C/Sec. Max.}$ .
- Preheat Area:** The phase where the temperature is raised to the reflow range, with a duration of  $150\text{--}200\text{ }^{\circ}\text{C} / 60\text{--}120\text{ Sec.}$ .
- Reflow Area:** The phase where the temperature is maintained at the peak reflow temperature, with a maximum rate of  $+3.0\text{ }^{\circ}\text{C/Sec. Max.}$ .
- Forced Cooling Area:** The final phase where the temperature is rapidly reduced, with a maximum rate of  $-(1.0\text{--}5.0)\text{ }^{\circ}\text{C/Sec. Max.}$ .

Key temperature points and time durations are marked on the graph:

- Peak Temperature:**  $260\text{ }^{\circ}\text{C}$
- Temperature at 217 °C:** The duration from the start of the reflow area to this temperature is  $60\text{--}150\text{ Sec.}$ .
- Temperature at 217 °C (Max. Duration):** The maximum duration at this temperature is  $60\text{ Sec. Max.}$ .
- Temperature at 150 °C:** The duration from the start of the preheat area to this temperature is  $60\text{--}120\text{ Sec.}$ .

Technical drawing of a 35mm film strip showing end view, side view, and layout view with dimensions in inches and millimeters.

**End View (Left):**

- Outer diameter:  $178 \text{ DIA. (7.001)}$
- Inner diameter:  $13.0 \text{ DIA. (.512)}$
- Central hole diameter:  $21.0 \pm 0.8 \text{ (.827} \pm .031)$

**Side View (Middle):**

- Top flange thickness:  $16.5 \text{ (.650)}$
- Bottom flange thickness:  $14.0 \pm 0 \text{ (.551} \pm 0)$
- Central hole diameter:  $13.0 \text{ DIA. (.512)}$
- Distance between flanges:  $50.0 - 0 \text{ (1.969 - 0)}$

**End View (Right):**

- Thickness:  $0.10 \text{ (.004) MAX.}$
- Embossed cavity
- Embossed carrier
- Distance between embossed features:  $12.0 \text{ (.472)}$

**Layout View (Bottom):**

- Dimensions:  $2.0 \text{ (.079)}$  and  $8.0 \text{ (.315)}$
- Labels: END, START
- Sections: Leader no component 200 m/m min., Components, Trailer no component 400 m/m min.

DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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