



Bourns Introduces TaN Thin Film Chip Resistors for Precision Circuits in Humid and Sulfur-Rich Environments

Tantalum nitride thin film construction provides tolerances as tight as ± 0.05 percent and TCR as low as ± 10 ppm/ $^{\circ}\text{C}$

RIVERSIDE, Calif., September 30, 2026 - Bourns today announced the [CRT-TN Series TaN Thin Film Chip Resistors](#) for precision circuits that require stable resistance characteristics in demanding environments. Available in 0402, 0603, 0805 and 1206 sizes, the series combines resistance tolerances as tight as ± 0.05 percent with temperature coefficient of resistance (TCR) options as low as ± 10 ppm/ $^{\circ}\text{C}$.

Precision resistor selection requires designers to account for resistance variation across temperature, humidity exposure and sulfur contamination. These conditions can affect long-term resistance stability and measurement accuracy. The CRT-TN Series uses a tantalum nitride thin film element and a sulfur-resistant design tested to ASTM B809-95, while supporting an operating temperature range of -55 $^{\circ}\text{C}$ to $+155$ $^{\circ}\text{C}$. Resistance values extend from $10\ \Omega$ to $1\ \text{M}\Omega$, depending on the model.

"Designers of precision circuits need resistor values to remain stable when equipment operates across temperature changes or in humid environments," said Walter Garcia, Product Line Manager, Resistors at Bourns. "The CRT-TN Series combines tantalum nitride thin film construction with tolerance options down to ± 0.05 percent and TCR options down to ± 10 ppm/ $^{\circ}\text{C}$. Its four package sizes and model-dependent resistance ranges give designers several choices for matching electrical and board-layout requirements."

Design Features

- **Tantalum nitride thin film** — supports precision and long-term resistance stability.
- **High stability in humid environments** — helps maintain resistance under humidity exposure.
- **TCR as low as ± 10 ppm/ $^{\circ}\text{C}$** — limits resistance change as temperature varies.
- **Tolerance as tight as ± 0.05 %** — supports precise resistance requirements.
- **RoHS compliant*** — meets the referenced RoHS directive.
- **Sulfur-resistant design (ASTM B809-95)** — helps resist sulfur contamination.

Electrical Specifications

Characteristic	CRT0402-TN	CRT0603-TN	CRT0805-TN	CRT1206-TN
Power rating at 85 °C	0.063 W	0.167 W	0.2 W	0.5 W
Operating temperature range	-55 °C – +155 °C	-55 °C – +155 °C	-55 °C – +155 °C	-55 °C – +155 °C
Derated to zero load at	+155 °C	+155 °C	+155 °C	+155 °C
Maximum working voltage	50 V	75 V	100 V	200 V
Maximum overload voltage	100 V	150 V	200 V	400 V
Resistance range	40 Ω – 35 k Ω	40 Ω – 130 k Ω	10 Ω – 350 k Ω	10 Ω – 1 M Ω
TCR options	± 10 , ± 15 , ± 25 , ± 50 ppm/°C	± 10 , ± 15 , ± 25 , ± 50 ppm/°C	± 10 , ± 15 , ± 25 , ± 50 ppm/°C	± 10 , ± 15 , ± 25 , ± 50 ppm/°C
Resistance tolerance options	± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %	± 0.05 %, ± 0.1 %, ± 0.25 %, ± 0.5 %, ± 1 %

Target Applications

- Industrial equipment
- Precision circuits
- Navigation equipment
- Telecommunications
- Precision testing devices

Availability

Full specifications and ordering information are available at [bourns.com/products/resistors/thin-film-chip-resistors](https://www.bourns.com/products/resistors/thin-film-chip-resistors). Samples may be requested at [Bourns Customer Service](#).

About Bourns

Bourns is the global electronic components partner for design engineers whose systems must keep working—in vehicles, aircraft, defense and navigation systems, medical devices†, data centers, satellites, consumer electronics, energy systems, and the networks that connect them. Across power, protection, sensing, timing, and thermal management, Bourns builds solutions for the demanding requirements those systems create. The family that founded Bourns in 1947 still governs the company—a stewardship that lets Bourns commit to its people, technologies, and customers for decades rather than quarters. For more information, visit [bourns.com](https://www.bourns.com).

Bourns® and the Bourns logo are registered trademarks of Bourns, Inc. and may be used only with the permission of Bourns and proper acknowledgment. Other listed names and brands are trademarks or registered trademarks of their respective owners.

†Bourns® products have not been designed for and are not intended for use in "lifesaving," "life-critical" or "life-sustaining" applications nor any other applications where failure or malfunction of the Bourns® product may result in personal injury or death. See Legal Disclaimer Notice www.bourns.com/docs/legal/disclaimer.pdf

Media Contacts

Company Contact:

Anneliese Treckmann

Bourns, Inc.

Anneliese.Treckmann@bourns.com

###