



NEW PRODUCT RELEASE

MINI-BREAKER TCO DEVICES



Bourns Introduces its Smallest Surface Mount 54 Volt Miniature Thermal Cutoff Overtemperature Protection Devices

SE Series

Riverside, California - August 29, 2025 – Bourns is pleased to introduce its new [SE Series](#) of resettable miniature Thermal Cutoff (TCO) devices.

The SE Series is currently the industry's smallest 54 V SMD breaker, with a footprint size of 4.7 mm x 2.8 mm. The height is only 1.23 mm. The new SE Series uses the footprint of the SC Series released in 2019, with trip temperature settings of 72 °C, 77 °C, 82 °C, and 85 °C, each with a ± 5 °C tolerance range, similar to the SC Series.

The future growth of USB proliferation across the European Union will accelerate the demand for fast charging and higher powered cables. Furthermore, the Common Charger Directive, which was applied in the European Union in 2024, will require mobile phones, tablets, headphones, etc., to be equipped with a USB-C connector. However, fast charging increases the risk of heat generation from connector ingress situations, hence, the desire for greater levels of overtemperature protection.

The SE Series can support the full range of USB power delivery requirements for this growing demand and is newly developed to support 240 W to meet the upper limit of the USB PD standard.

The new SE Series is RoHS compliant*, and Bourns designed the family to better endure humid environments compared to standard TCO devices by constructing them using the Company's highest-rated corrosion resistance bimetal mechanism.

Features

- Miniature Thermal Cutoff (TCO) device
- Surface mount, smallest footprint
- Overtemperature and overcurrent protection
- Controls abnormal, excessive current virtually instantaneously, up to rated limits
- Wide range of temperature options
- High corrosion resistance
- Supports USB PD 240 W (48 V / 5 A) specification
- RoHS compliant*
- Halogen free**

Applications

- Overtemperature protection for:
 - USB Type C cables (e.g., smartphones and notebooks, max. 240 W)
 - Electronic cigarettes
 - Heaters***
- Battery cell protection for:
 - Wearables
 - Portable equipment

Please visit the Bourns website at www.bourns.com for additional product details and contact [Bourns Customer Service/Inside Sales](#) if you have any questions.

Additional Information

[DATA SHEET](#)[PRODUCT SELECTOR](#)[TECHNICAL LIBRARY](#)[INVENTORY](#)[SAMPLES](#)[CONTACT](#)

* 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

*** Excluding life-saving, life-critical or life-sustaining applications.

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