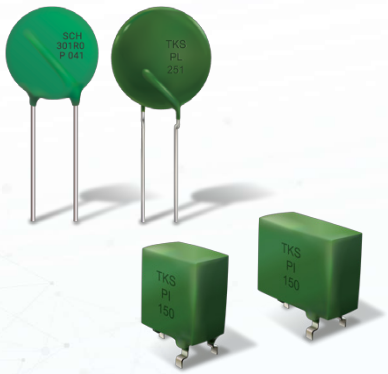
THINKING

PTC & NTC INRUSH CURRENT LIMITERS FOR HIGH POWER APPLICATIONS

Product Spotlight

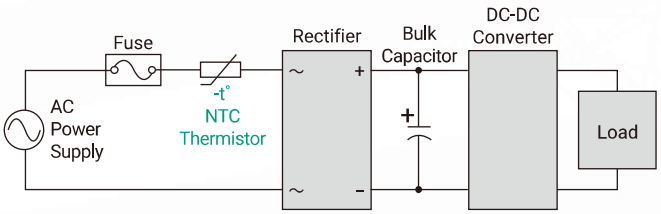
PRODUCT OVERVIEW



THINKING introduces the new PPL25 series PTC thermistor and SCH series NTC thermistor for inrush current limiting in high-power applications to meet increasing voltage and power requirements. With enhanced performance specifications, the PPL25 and SCH series thermistors can effectively suppress higher inrush currents caused by the charge in the bulk capacitor, allowing for the inclusion of a larger bulk capacitor and improving power density. Their superior performance also reduces the PCB space required for inrush current protection, providing designers with more space and flexibility. Additionally, the high resistance and voltage values of the PPL25 series make it well-suited for charge and discharge circuits in EV charging station and battery energy storage system.

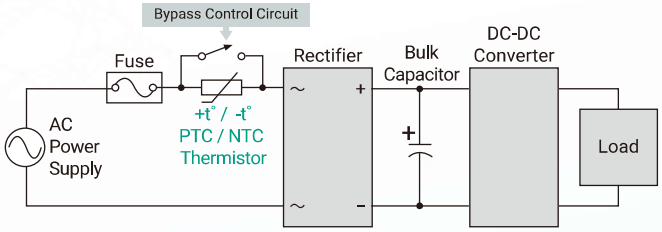
FEATURES

NTC ICL in Circuit Design without a Bypass Circuit



- NTC thermistor is a general, efficient, and cost-effective inrush current limiting solution

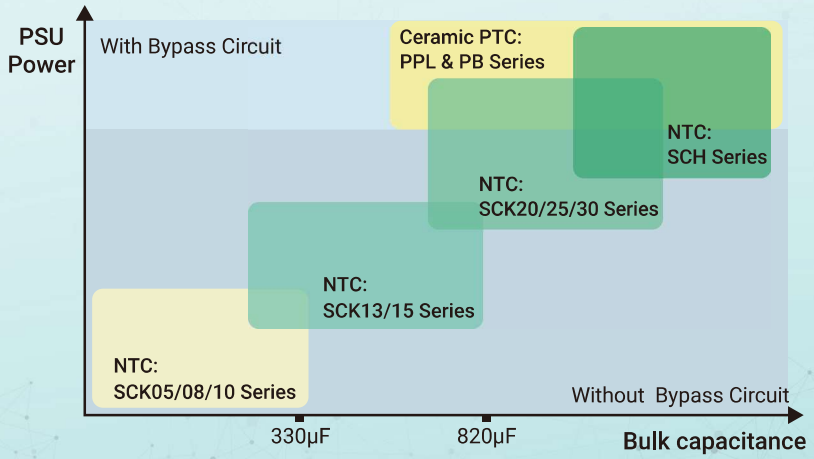
PTC / NTC ICL in Circuit Design with a Bypass Circuit



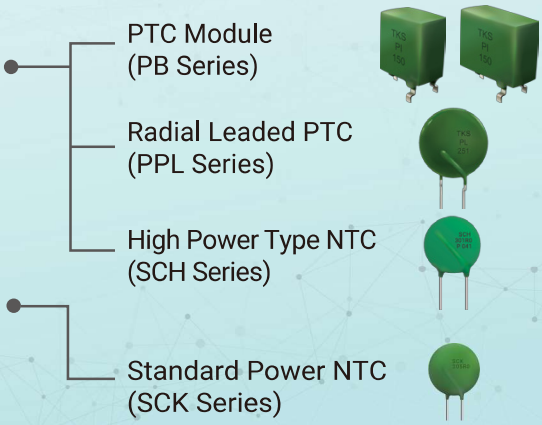
- Both NTC and PTC ICLs are suitable for high power circuit design that includes a bypass circuit

Inrush Current Limiter	Advantage	Limitation
PTC Thermistor	Suitable for low ambient temperature conditions	The cost is higher
NTC Thermistor	Cost-effective	Higher resistance at low ambient temperatures

THINKING Thermistor-Based Inrush Current Limiter Selection Guide



THINKING Thermistor-Based Inrush Current Limiter Product Portfolio



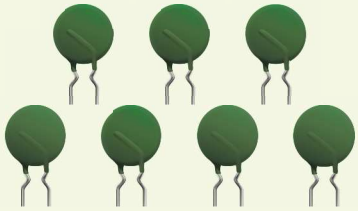
FEATURES

The Extended Radial Leaded PTC and NTC Thermistors Enable Miniaturization of High Power PSUs

- The upgraded PPL25 and SCH series thermistors enable designers to include a larger bulk capacitor and to reduce the number of thermistors required for inrush current protection, achieving the miniaturization of high power PSUs.

The New PTC Module Significantly Optimizes PCB Space

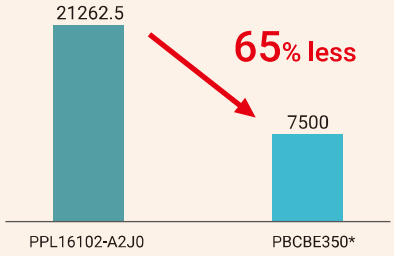
For DC 800V, Ta: 60 °C, 3500μF application



PPL16 Series (Radial Leaded)
PPL16102-A2J0: 18 x 7.5 x 22.5 mm, 7pcs

PB Series (Module)
PBCBE350* : 20 x 15 x 25 mm, 1pc

Required PCB Space (mm³)



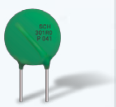
- In a high voltage discharge circuit, using a PTC module that combines thermistor discs in parallel as a single device significantly saves PCB space compared to radial-leaded PTC thermistors.

APPLICATIONS

Power supply unit, switching mode power supply, uninterruptible power supply, power conversion equipment, on-board charger, high power charging, charge and discharge circuit, server power supply, and PV inverter

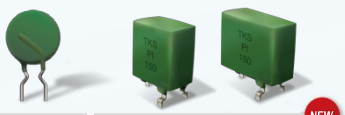
SPECIFICATIONS

High Power Type NTC Thermistor: SCH Series



Disc Size (mm)	Φ20, Φ25, Φ30
Imax (A)	3 to 38
Recommended Capacitance (μF)	1200 to 5200

Ceramic PTC Thermistor: PPL and PB Series



Product Series	PPL	PB NEW
Configuration	Radial leaded	Module
Disc Size / Dimensions (mm)	Φ11, Φ14, Φ16, Φ19, Φ20, **Φ25** NEW	20 x 15 x 25 39 x 14 x 25
Resistance (Ω)	3.8 to 1000	As low as 15
System Voltage (V)	AC: 240, 277, 480 DC: 800	AC: 600 DC: 400, 800, 1000