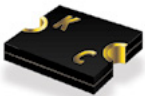


## Protecting Offline Flyback Converters

### Solution Products



MF-RHT070



MF-USHT075KX

### Situation

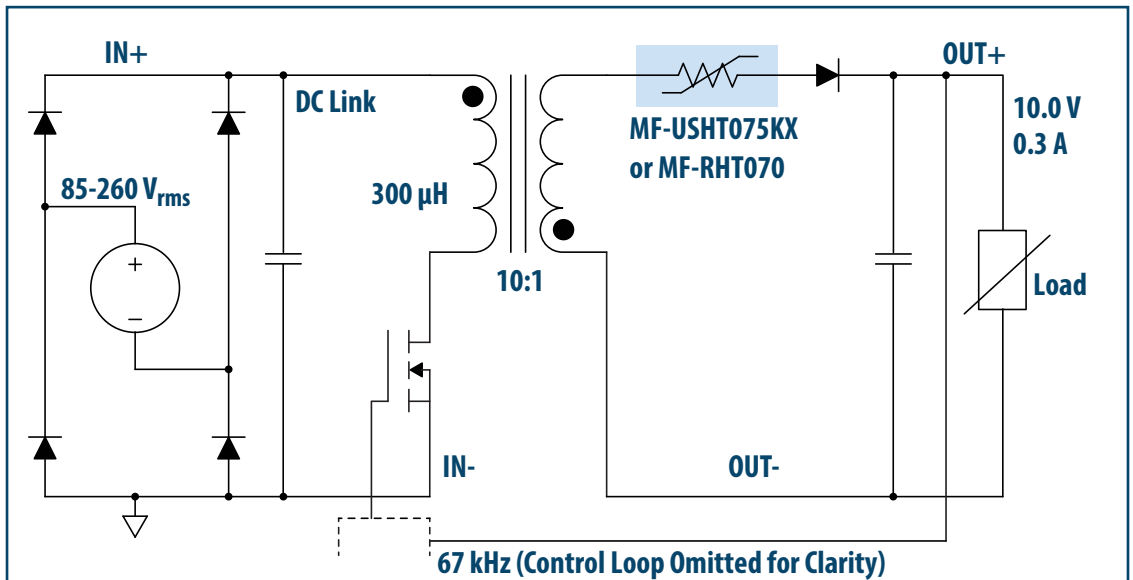
The transient overload testing required for low-power offline converters in power supplies can be stressful on the output diode and the transformer. The high turns ratio on these devices convert relatively low peak currents in the primary side into peak currents of several amps on the secondary side, which can damage or even destroy the diode and overheat the transformer.

Seen as an optimal protection solution for this scenario, Polymer Positive Temperature Coefficient (PPTC) resettable fuses go into high impedance during a transient condition, lowering the electrical stress to the diode and transformer, and then returning to their normal working condition once the transient condition subsides so that it doesn't hinder the operation of other components.

This Bourns® Power Play Solution™ outlines the feature advantages of designing a protection scheme with PPTC resettable fuses.

### Bourns® Power Play Solution™

The circuit shown below illustrates a DC power supply protection solution utilizing Bourns® Multifuse® PPTC resettable fuses.



The schematic above illustrates the application protection and does not constitute the complete circuit design. Customers should verify actual device performance in their specific applications.

Qty.	Component Description	Part Number & Data Sheet Link	Distributor Inventory
1	Multifuse® PPTC resettable fuse	<a href="#">Model MF-RHT070</a>	<a href="#">Check Stock</a>
	Multifuse(R) PPTC Resettable Fuse	<a href="#">MF-USHT075KX</a>	<a href="#">Check Stock</a>

## Protecting Offline Flyback Converters

### Solution Products



[MF-RHT070](#)



[MF-USHT075KX](#)

### Summary

**Industry:** Power Electronics

**Application:** Offline Flyback Converter

**Product:**

- [Bourns® Model MF-RHT Multifuse® PPTC Resettable Fuses](#)
- [Bourns® Model MF-USHT Multifuse® PPTC Resettable Fuses](#)

**Benefits:** Reduces the need for larger, more expensive diodes and larger core transformers

### Compliance

This Bourns® Power Play Solution™ passed the AEC-Q200 Stress Test Qualification for passive components in automotive applications. It also complies with EN 60335, IEC 60730 (low-power circuit test) and has cUL Recognition (File E174545) and TÜV Recognition (R50494578).

### Benefits

An additional benefit of this Bourns® Power Play Solution™ for offline flyback converters is that it helps reduce the need for larger, more expensive diodes and larger core transformers.

### Bourns® Power Play Solution™

Bourns® Model MF-RHT and MF-USHT Multifuse® PPTC resettable fuses are designed to provide effective high resistance protection and reduce short circuits even in demanding settings with high voltage temperatures. The high temperature coefficient, and ability to go from low impedance to high impedance protect the circuit by decreasing the unintended current through the diode and/or transformer.

Model MF-RHT and MF-USHT also provide an extended operating temperature range of up to 125 °C with a low thermal derating factor and supports higher hold currents at elevated temperatures. These resettable fuses also deliver a high current rating, feature low initial resistance and help reduce temperature-based nuisance tripping all in a space-saving package.

### Additional Resources

Check out the full library of [Bourns® Power Play Solutions™](#)

[www.bourns.com](http://www.bourns.com)

# BOURNS®

**Americas:** Tel +1-951 781-5500  
Email [americus@bourns.com](mailto:americus@bourns.com)

**EMEA:** Tel +36 88 520 390  
Email [eurocus@bourns.com](mailto:eurocus@bourns.com)

**Asia-Pacific:** Tel +886-2 256 241 17  
Email [asiacus@bourns.com](mailto:asiacus@bourns.com)