



NXP GreenChip X-capacitor discharge IC TEA1708

Enable extreme low standby power using NXP's rugged automatic X-capacitor discharge IC

Equipped with a high-voltage (500 V) clamp, this device withstands surges of more than 6 kV, requires only one low-voltage capacitor, and consumes less than 1 mW at 230 Vac.

KEY FEATURES

- ▶ Integrated 500 V clamp
- ▶ Withstands >6 kV mains surges with $R1 = R2 = 200 \text{ k}\Omega$
See TEA1708 application diagram
- ▶ As little as 1 mW power consumption at 230 Vac
- ▶ Supply current of 4 μA
- ▶ Adjustable AC removal detection time
- ▶ Requires only one external low-voltage capacitor
- ▶ ~2.3 mA discharge current (internally limited)

APPLICATIONS

- ▶ AC-connected power supplies with X capacitors above 100 nF that require very low no-load standby power

The NXP TEA1708 is rugged for surges, consumes very little power and, because it reduces component count, enables a very compact design.

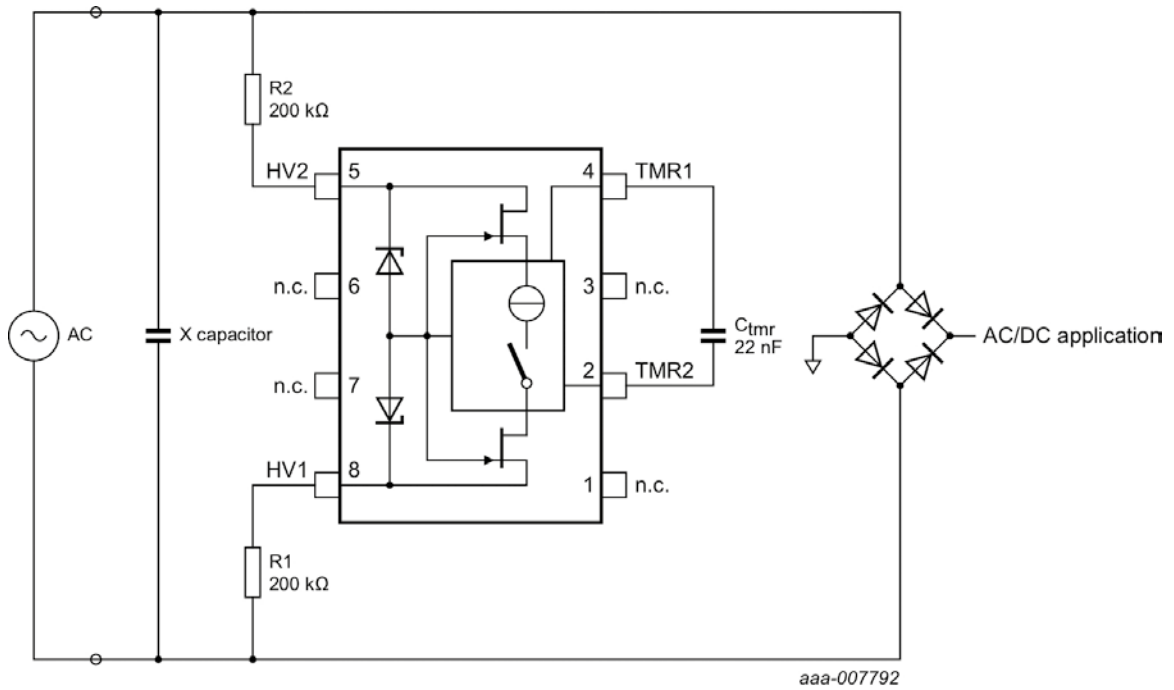
In typical configurations, the TEA1708 is connected across the X-capacitor via two resistors. The TEA1708 integrates a high-voltage clamping circuit, so there is no need for a Metal Oxide Varistor (MOV) to protect the X-capacitor discharge IC.

The high-voltage diodes connected to the L & N of a typical active X-cap discharge solution are not needed using the TEA1708, resulting in a lower BOM and fewer external components.

In surge tests, the TEA1708 delivers robust performance, withstanding a mains surge voltage in excess of 6 kV when connected via two resistors R1 and R2 of 200 k Ω .

The X-capacitor discharge current is internally limited to ~2.3 mA. The discharge delay time is set externally by a low-voltage capacitor.





TEA1708 application diagram

