**Brushless DC Fan Driver**

High power brushless fans incorporate Hall effect rotor sensors which directly control stator winding driver transistors. Since these drivers must withstand high surge and continuous currents which occur in normal and stalled operation, expensive TO220 or TO126 Darlington transistors are commonly specified.

The 200°C and 1W capability of the E-Line (TO92 style) package coupled with the high efficiency matrix geometry of the ZTX603 Darlington transistor provides the necessary performance at a smaller size and cost. Featuring a saturation voltage of 0.95V at 1A for a base current of only 1mA, a 4A peak capability (1A continuous) and excellent switching characteristics, the ZTX603 is an efficient load tolerant driver for fans of powers up to 10W and above.

(Zetex manufacture a wide range of Darlington geometry transistors, with BVCEO ratings from 30 to 140V, and DC current ratings up to 1A in TO92.)

**Flashgun Converter**

Component size and capacitor re-charge times are a major consideration for camera flashguns. Regular TO220, TO126 or SM D-PAK packaged chips, although bigger, cannot match the performance of the E-Line (TO92 style) Matrix Bipolar chip family. Zetex transistors exhibit lower saturation voltages, higher $h_{FE}$, a higher current gain hold-up/silicon area, and a more efficient switching performance than any of the devices available from the aforementioned packages.

The ZTX849 features a saturation voltage of only 180mV at 5A (thus enabling a 5A continuous current capability in a TO-92 sized package), $h_{FE}$ specified from 10mA and up to 20A, and an $f_T$ of 100MHz thus allowing very efficient converter designs.

The simple circuit topology shown can provide a rapid capacitor recharge time of less than 5 seconds. Efficiency is also improved over competitive types, giving typically 24-36 more flash/recharge cycles per battery (Lithium).

A higher gain alternative, the ZTX869, is also available.