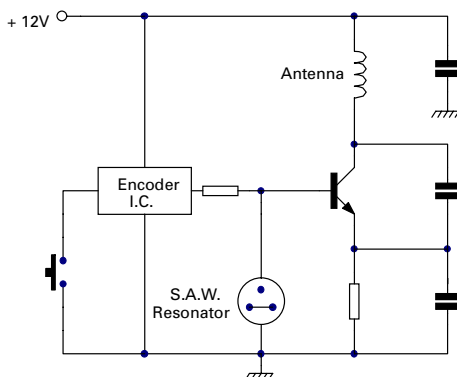


## Automotive Security Systems and RF Transistor Products



The majority of modern automotive alarms employ coded RF systems that key a VHF carrier wave with a unique (or at least, one of many) code. The encoding ICs available are able to keep component count to a minimum, and for efficient, cost-effective and non-critical operation, a high performance RF driver is therefore essential.

The transmitter circuit shown, is typical of such systems. It requires a device with tightly controlled DC and RF parameters, as there is no provision for component variability.

World-wide, different frequencies have been allocated for this application and this defines device selection. For the UK where a band at 418MHz has been set, the ZTX325 with a peak  $F_T$  of 3.2GHz is ideal. The US band of 314MHz is well

served by the Zetex MPSH10 with an  $F_T$  of 1.6GHz peak and various European frequencies in the range of 200-300MHz are covered by the ZTX321 with an  $F_T$  peaking at 880MHz.

All these devices are available in the compact E-Line (TO92 style -though much slimmer) package or for ultra miniature designs, in SOT23.

RF output power is normally regulation limited to 0.5 -1W. Supply currents of 10 - 20mA are necessary to provide these levels due to antenna shrouding by the operators hand. At these current levels careful attention must be paid to available RF gain,  $F_T$  profiles, and biasing. The aforementioned transistors have all been characterised in this respect, and 's' parameters are available for the BFS17 and MPSH10.