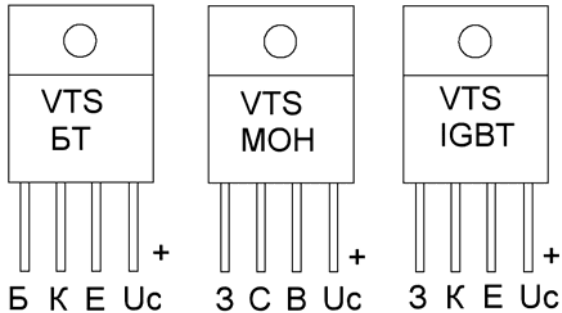


5.15. TRANSISTOR SWITCHES WITH THYRISTOR CONTROL

They are designed for the use in the devices of power electronics as power switches with full thyristor control functions such as regenerative power on / off by low-current short pulses, locking when changing the direction of power current on the reverse.

The modified macromodels of the switches are developed on discrete elements - on the basis of power bipolar, field and IGBT transistors respectively: VST-BT (VTS-BT); VST-MON (VTS-MOH); VTS-IGBT, where the electrodes are marked: K - collector, E - emitter, Б - base, C - drain, B - leak, 3 - shutter, U_c - service power supply voltage.



Advantages:

- voltage drops only on two p-n - transitions;
- additional reduction of voltage drop when using transistors of type IGBT-4E, BTD-4E (БТД-4Е);
- turning off by a low-current short pulse;
- reduced holding current to the current level of a leakage of power transistors;

- increased switching frequency;

- ability to work in two modes - thyristor with full control and transistor.

It is recommended for the integral execution of these switches with their subsequent application in the devices of power electronics with increased efficiency and enhanced functionality.