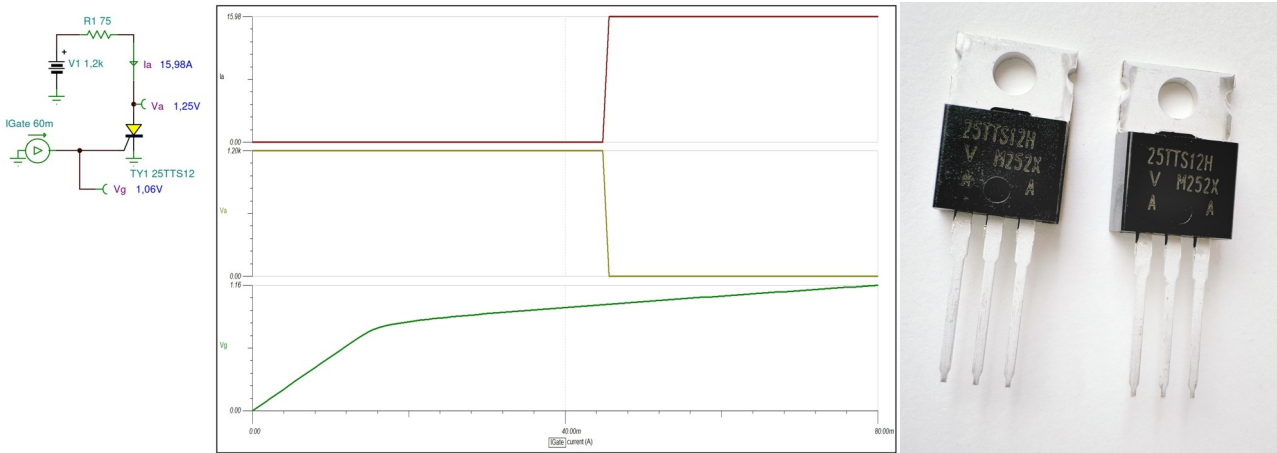
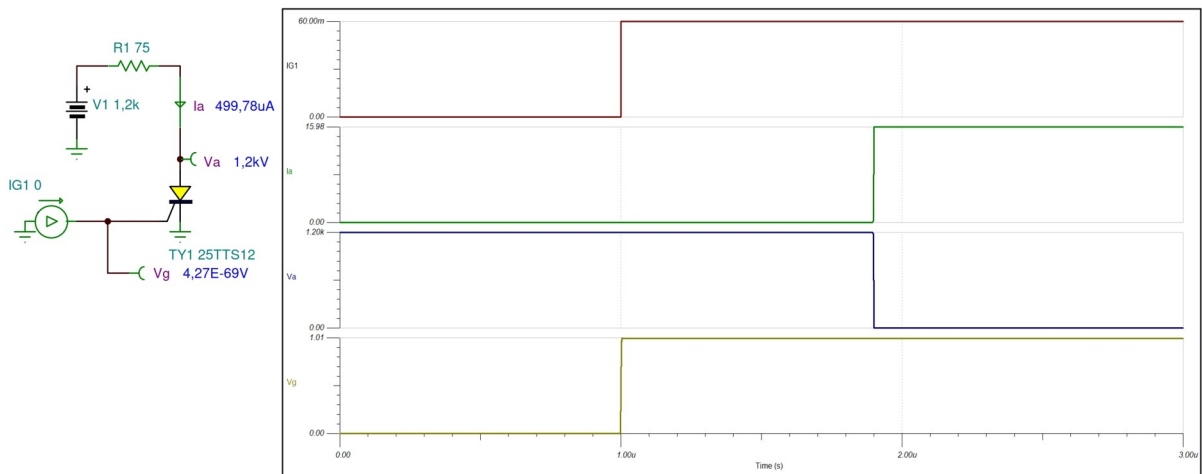


# 25TTS12 Phase Control SCR Macro Model

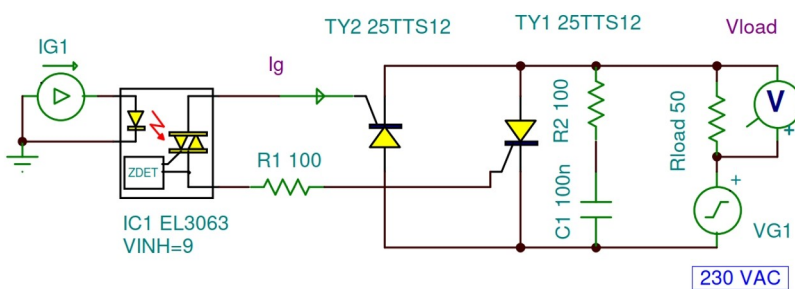
## DC Characteristics



## Typical Turn-on Time



## Zero Crossing Inverse-Parallel SCR Driver Circuit



Zero voltage crossing turn-on opto-drivers are designed to limit turn-on voltage to less than 20 V. Since the voltage is limited to 20 V or less, the series gate resistor that limits the gate drive current has to be much lower with a zero crossing opto-driver. With typical inhibit voltage of 9 V, a Thyristor gate could

require 60 mA at  $-10^{\circ}\text{C}$  ( $R_{\text{max}}=9\text{ V}/60\text{ mA} = 150\ \Omega$ ). By using  $100\ \Omega$  for the gate resistor, a current of at least 50 mA is supplied with only 5 V, but limited to 0.2 A if the voltage goes to 20 V.

Thyristor gate resistors and diodes are only required for sensitive gate SCRs. Normal SCRs contain an integrated low value resistor between K-G ( $30\ \Omega\text{...}300\ \Omega$ ).

The timing diagram is shown on the next page.

