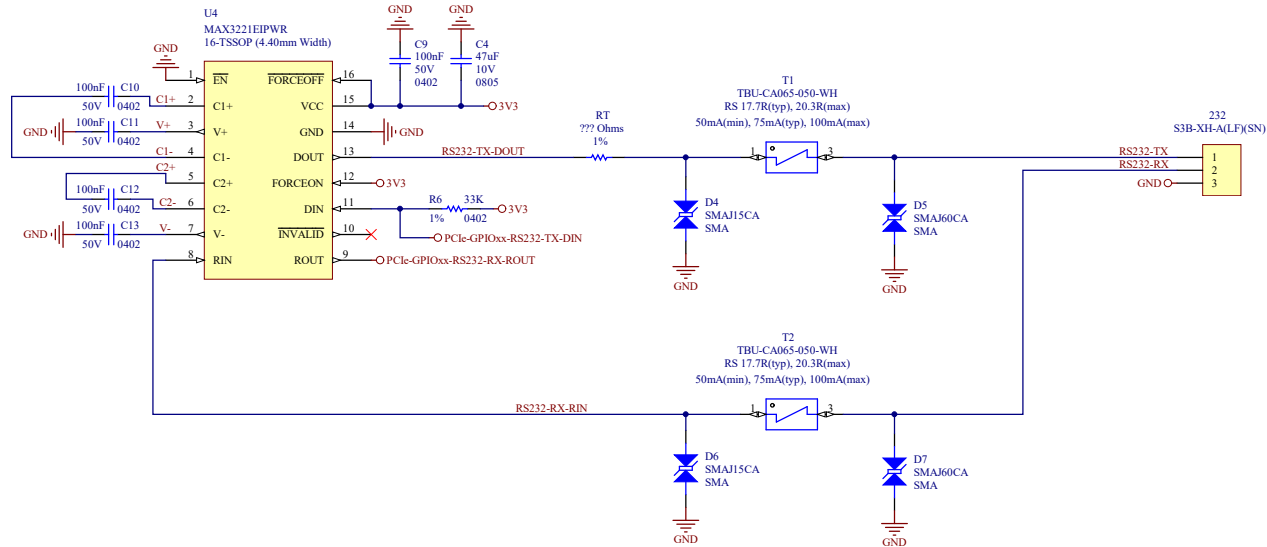# RS232

- Ground (0V) or +60V at maximum might be connected for a very long time to the RS232 TX and RX pins of the connector at right side.

- The TBUs will always limit at a maximum of 100mA the current coming from the connector into the SMAJ15CA TVS diodes.

- I suppose, based on experiences with TBU+TVS, that the voltage at TVS diodes SMAJ15CA will reach a maximum of 20V, so what would be a good choice of resistor value for resistor RT to protect the output of the RS232 driver, the driver of MAX3221EIPWR?

- This circuit is to be used in vehicles with batteries of 12V and 48V. Much Probably if 40V or more be applied to RX or TX pins of the connector, the TBU will trigger by over-current and keep a small current passing through it until the external voltage be removed. Then, for 48V system its fine, but in a 12V vehicle, applying 12V to the connector pins TX/RX the TBU might not trigger and will keep conducing with a small resistance RS. Then in this case there will be 12V at the right side of RT and the worst case together with this is when the output DOUT of MAX3221EIPWR is negative.

- The 60V TVS is to protect the TBU, which protects the 15V TVS, which protects the transceiver.

- Any suggestion of an adequate resistor value for RT?

- By adding RT in series with the driver output, does it affect the performance of the transmission?