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Electrical/optical dual-function redox potential transistor

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Fig.1 Shows a commercial ECC83 triode operating characteristics, where an anode current (Ia) variation with anode voltage (Va) and grid voltage (Vg) is given. The characteristics are very similar to the device we demonstrated. The difference is the sequence of grid voltage applied here is opposite from the gate voltage in our device. The device we invented here does not require a hot cathode and the drive voltage is two orders of magnitude lower.

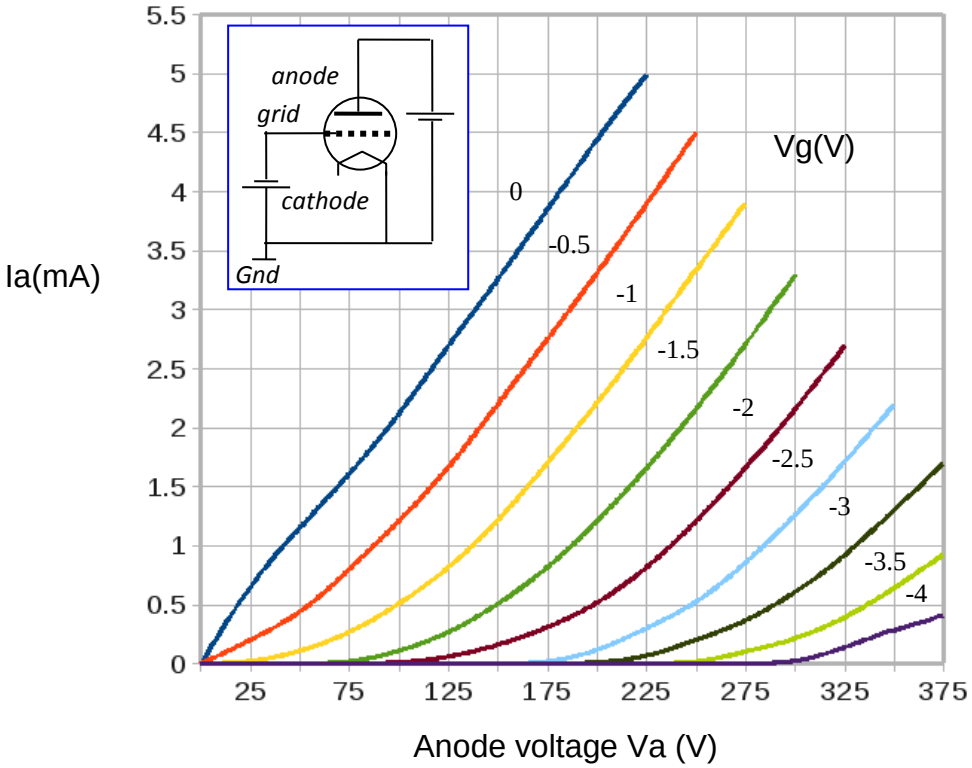


Fig.1 Operating characteristics of commercial ECC83 Triode

Fig.2 shows one of typical design of current switcher for road-light control application where photoconductor, resistors, transistors, and diode are used to sense environment light condition, to change bias voltage applied on transistor and current directions. When the environment lighting intensity is low the road light switches ON automatically.

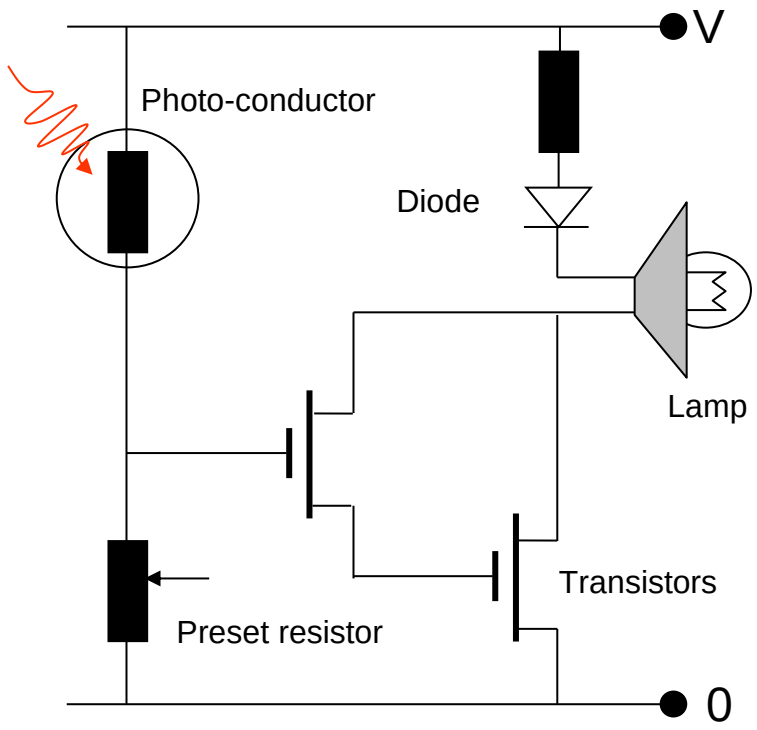


Fig.2 A typical current switcher circuit for road light control

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