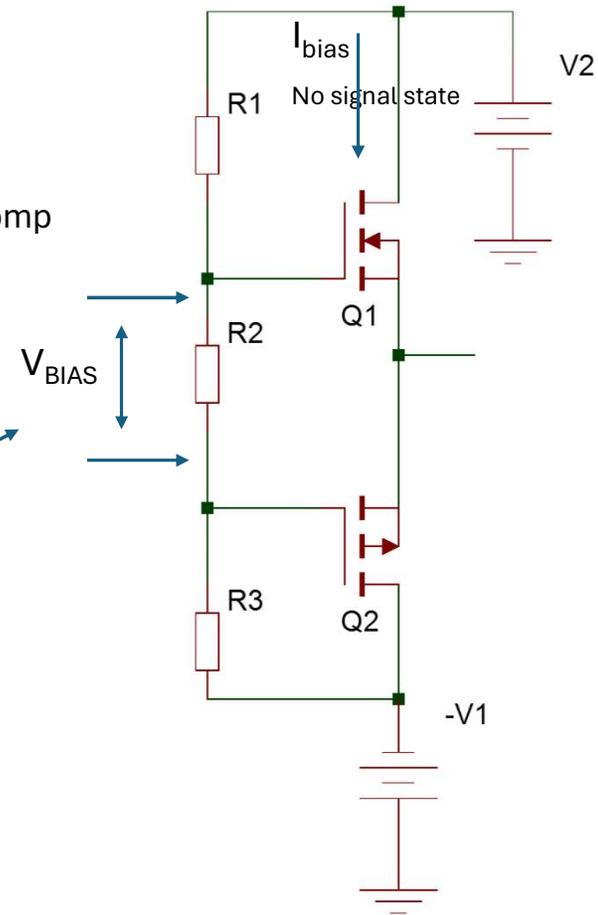


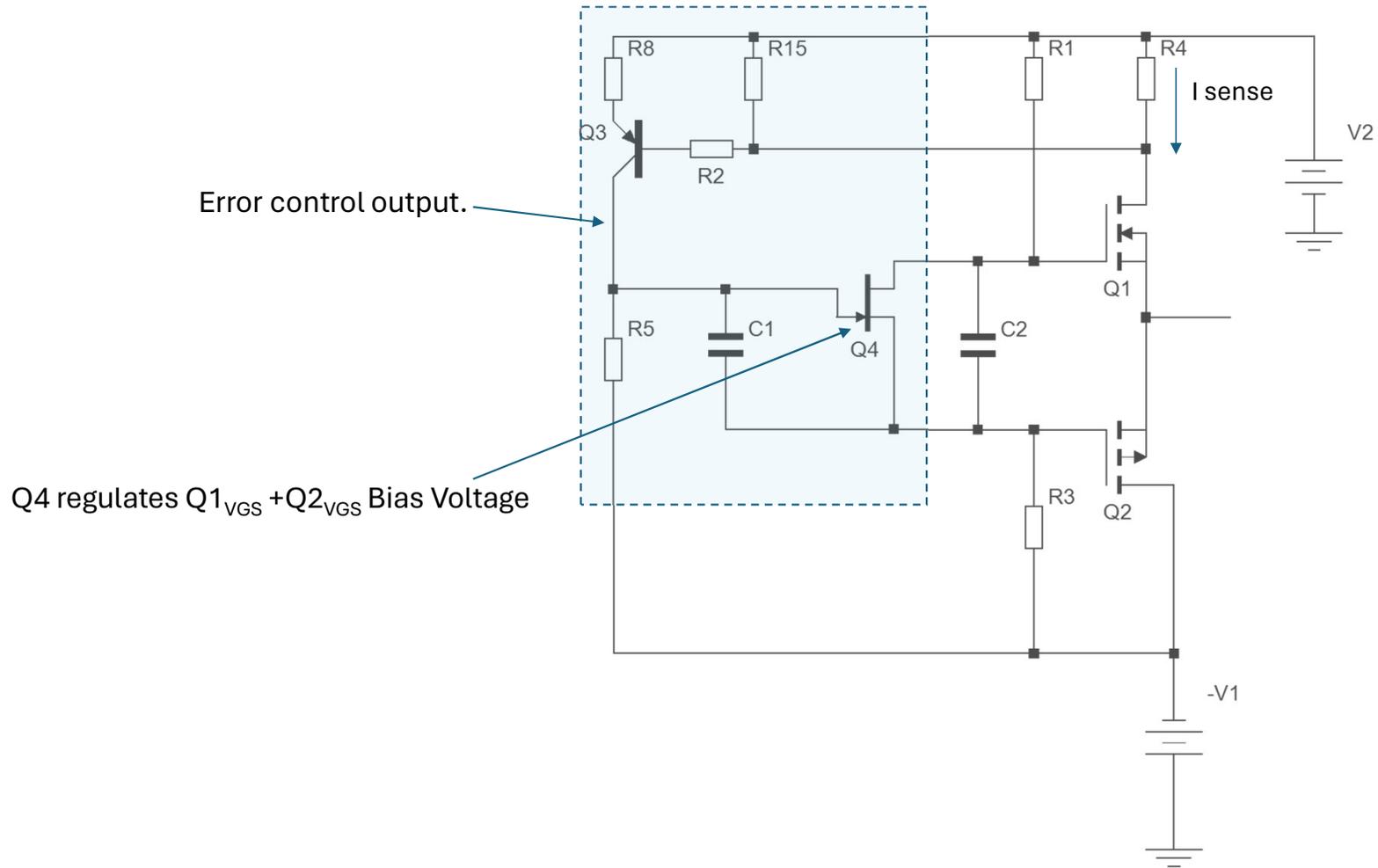
Auto Biasing For Class AB Amplifier using MOSFETS

- Class AB MOSFET amplifier has excellent linearity and efficiency provided quiescent bias is optimal
 - Too low a bias creates crossover distortion
 - Excessive bias causes high dissipation
- Two ways to adjust for optimal bias
 - Trim and temperature comp V_{BIAS} for desired I_{bias}
 - needs degeneration resistor, careful trimming and accurate temp comp
 - Sense I_{Bias} and regulate to appropriate V_{BIAS}
 - Challenge to control I_{bias} during large signal amplification

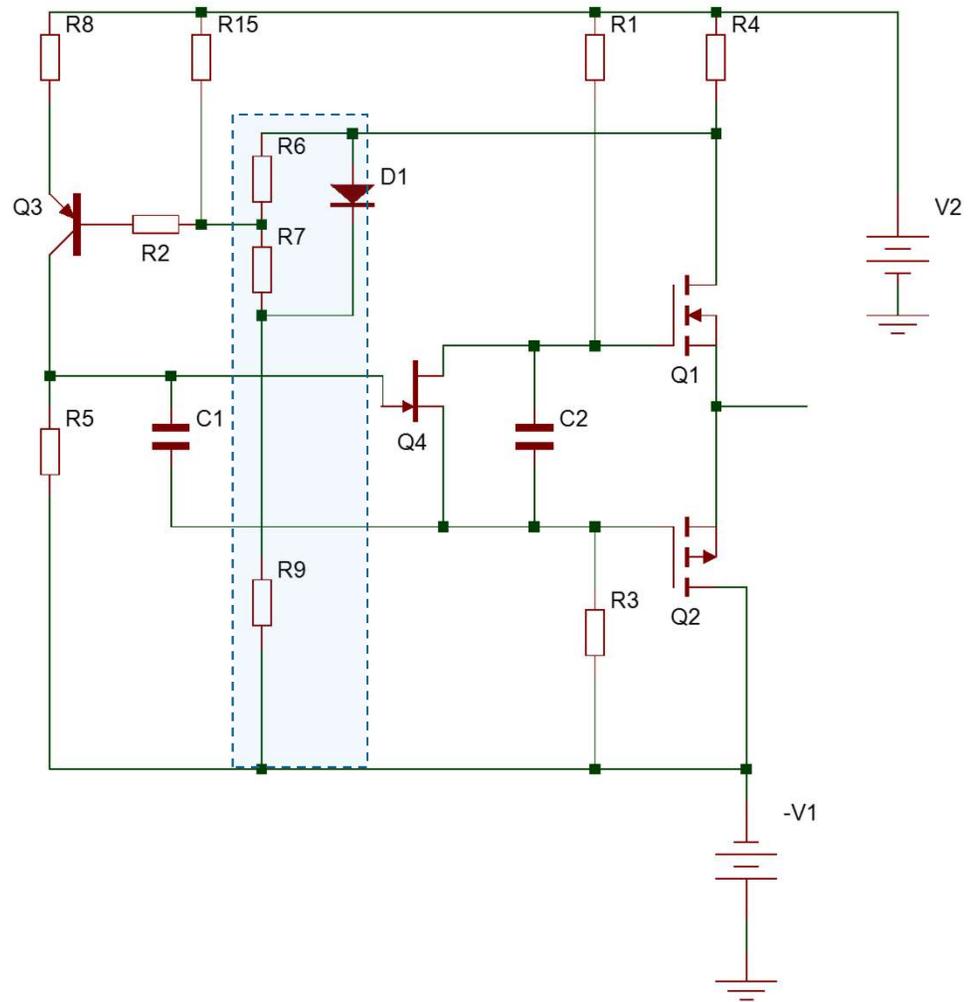
$$V_{BIAS} = V_{Q1_GS} + V_{Q2_GS}$$



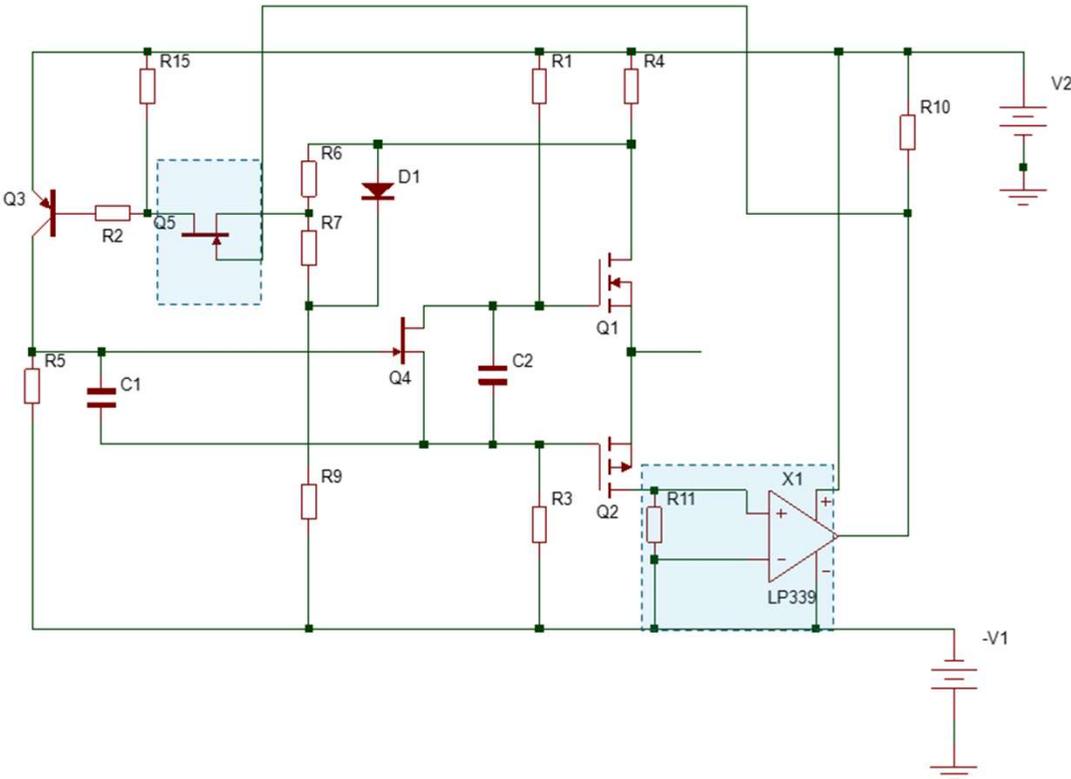
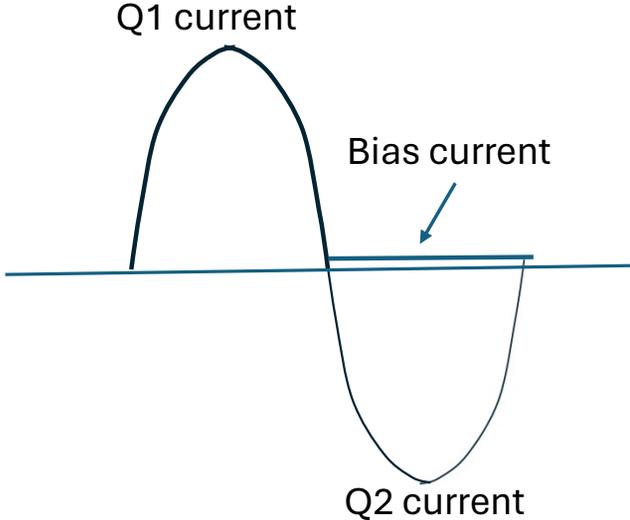
Discrete implementation of bias regulator



Reducing Q3 threshold to lower R4 value
Increases efficiency and waveform headroom capacity

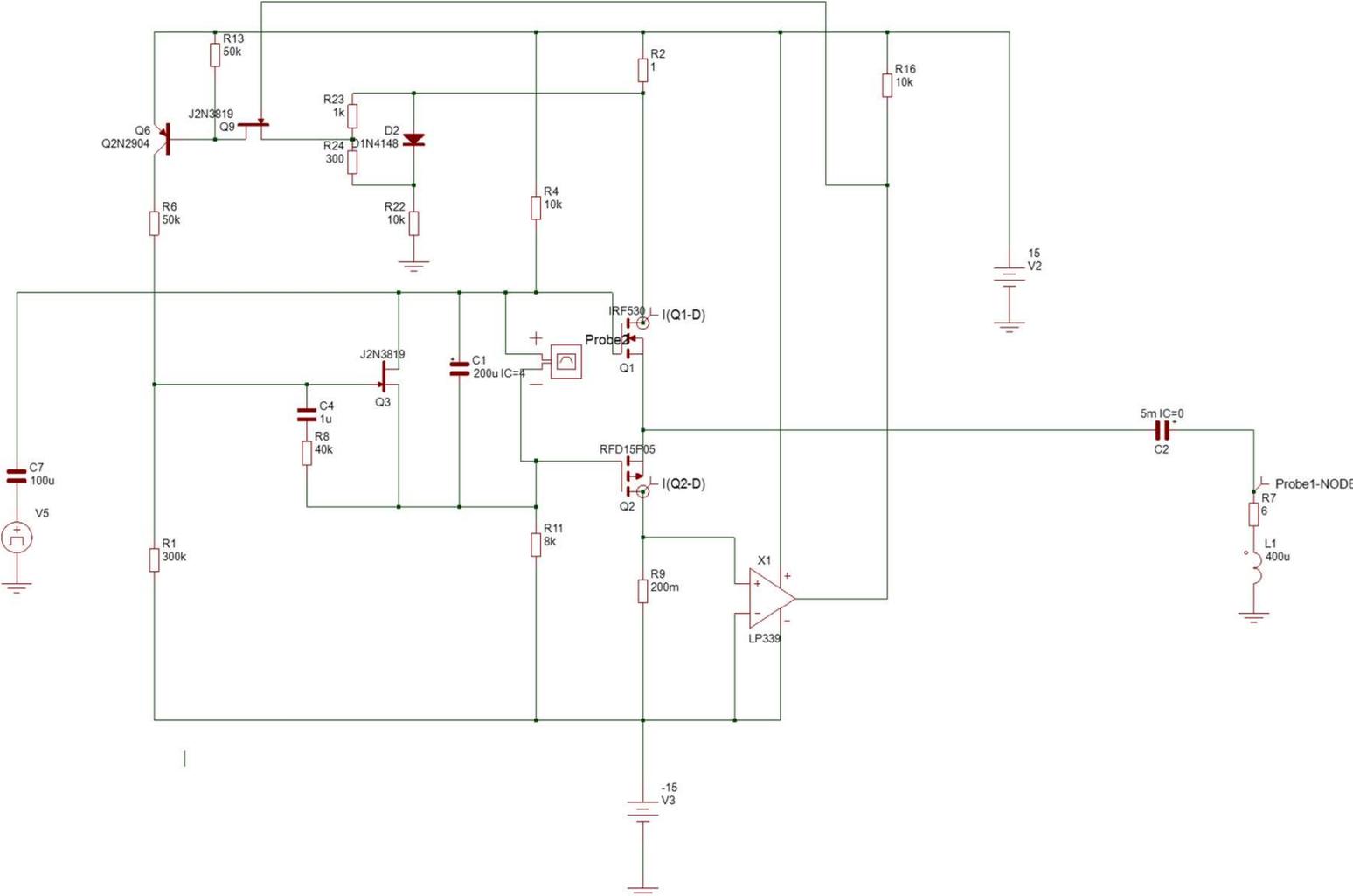


Sense Quiescent i of Q1 when Q2 is conducting above quiescent i



Bias current is only monitored (Q5 on) when Q2 is conducting above bias threshold – the feedback is averaged by C2

Complete Design



Q1 current

Q2 current

Output voltage

Regulated bias

