



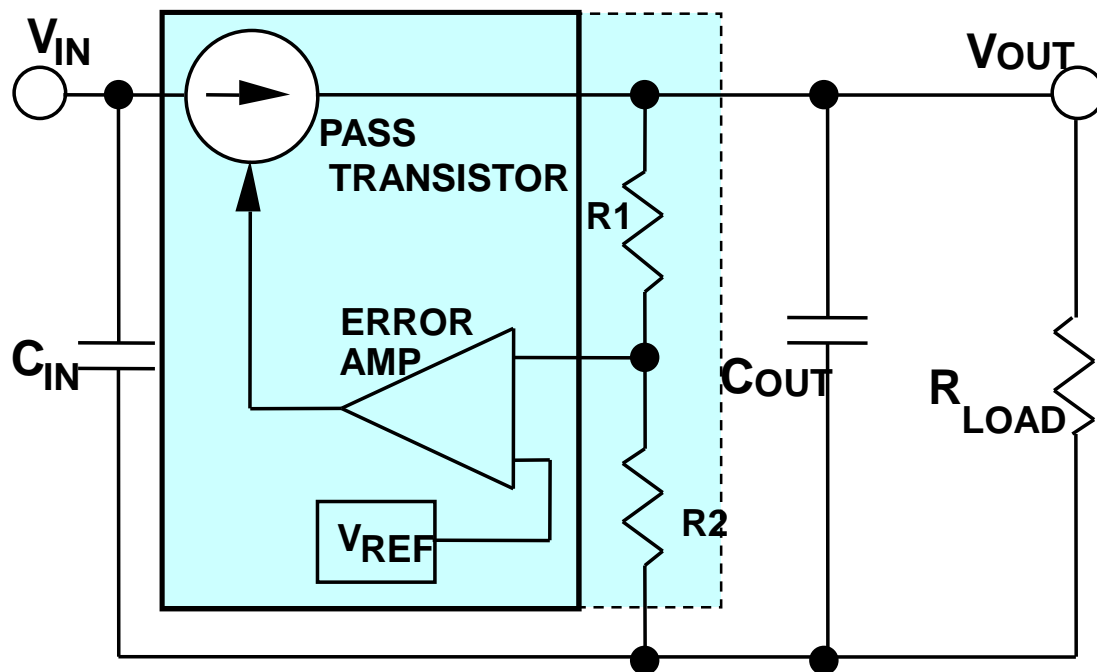
Linear Regulator Fundamentals

2.3 PNP



Linear-Regulator Operation

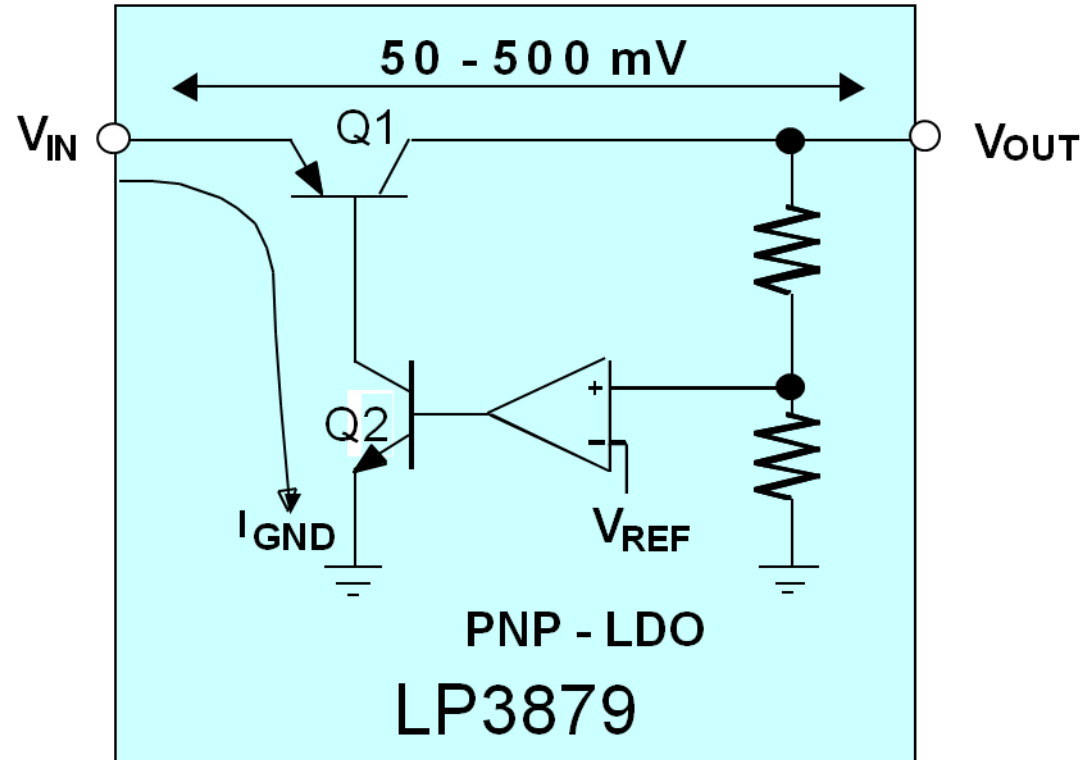
- Voltage feedback samples the output R1 and R2 may be internal or external
- Feedback controls pass transistor's current to the load



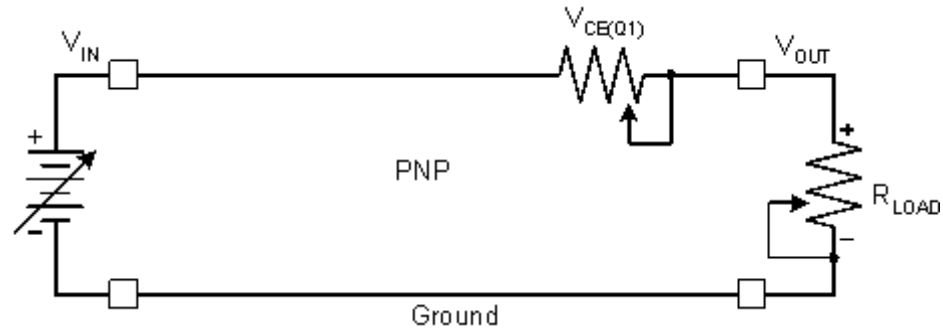


PNP-LDO Linear Regulator

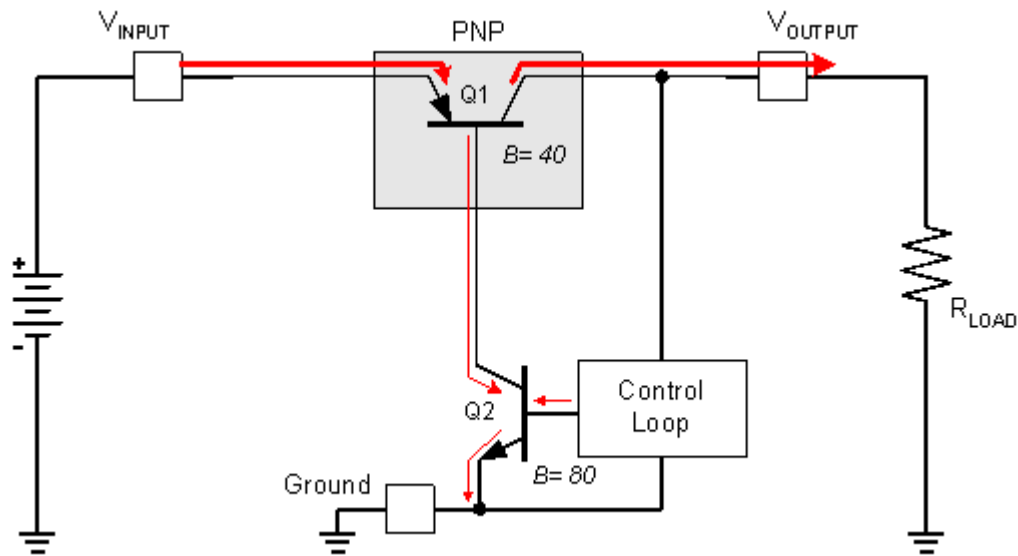
- Low drop-out voltage (V_{SAT} of PNP)
- Higher ground pin current (load dependent)
- Requires output capacitor



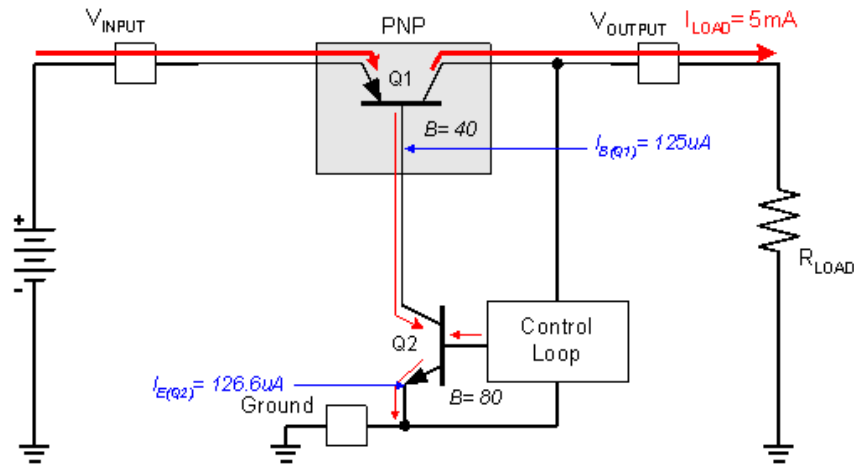
Simple Model of Losses in the PNP LDO Regulator



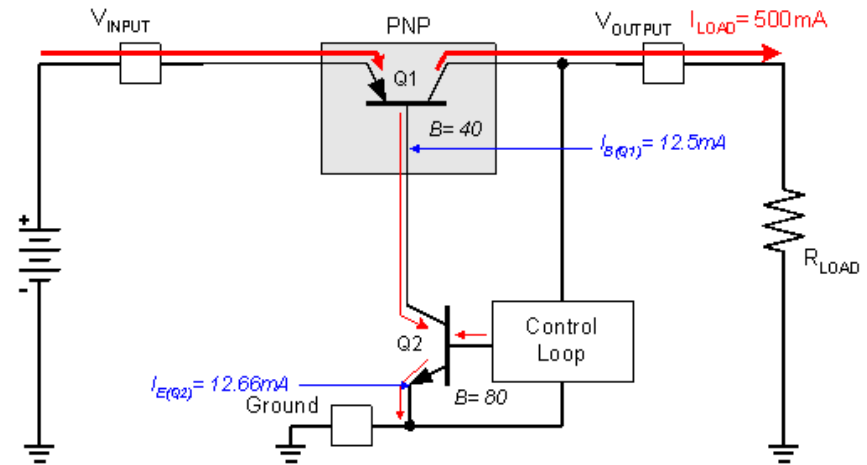
Driving the PNP LDO Pass Element



Drive Current vs. Low/High Load Current



The drive current for a load current requirement of 5mA



Increasing the load current requirement to 500mA

Summary



- The NPN-Quasi-LDO has the following Characteristics:
 - Requires that the input voltage be only 100mV to 700mV higher than the output voltage
 - Has a higher Ground pin current than NPN type
 - Requires careful selection of the output capacitor value and ESR ratings



Thank you!