Part Pin-outs

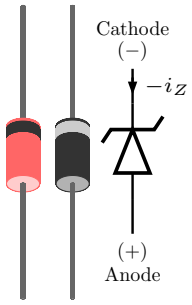
Lab 3: Voltage Regulators

ECE 327: *Electronic Devices and Circuits Laboratory I*

For *conventional* ***forward*** current i_Z:

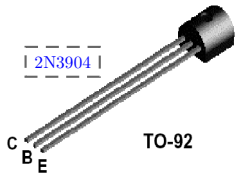
"**CCD**" — "**C**athode **C**urrent **D**eparts"

"**ACE**" — "**A**node **C**urrent **E**nters"

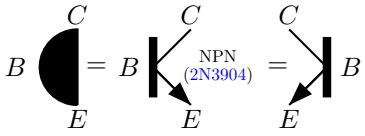


Zener:	v_Z	R_{on}	@	i_Z	($P_{Z,\text{max}}$ maximum)	$(v_Z - i_Z R_{\text{on}})$
1N4731:	−4.3 V	9 Ω	@	−58 mA	(1 Watt maximum)	(−3.778 V)
1N5229:	−4.3 V	22 Ω	@	−20 mA	(0.5 Watt maximum)	(−3.86 V)
1N751:	−5.1 V	17 Ω	@	−20 mA	(0.5 Watt maximum)	(−4.76 V)

1N4731/1N5229/1N751 Zener diode



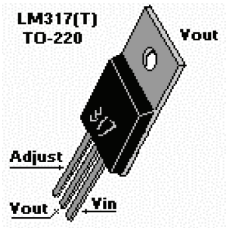
Top view of 2N3904

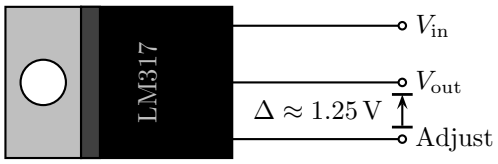


"**N**ot **P**ointing i**N**"

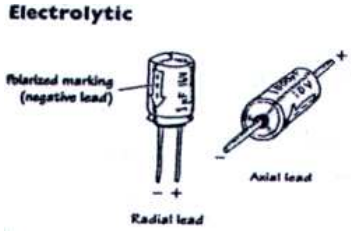
$V_{EB} \approx 0.65\,\text{V}$
$V_{EC,\text{saturation}} \approx 0.2\,\text{V}$
$\beta \approx 100$

2N3904 NPN BJT transistor





LM317 3-terminal adjustable regulator



"**ACE**" — "**A**node **C**urrent **E**nters"

"**CCD**" — "**C**athode **C**urrent **D**eparts"

(Anode) + — (Cathode)

Electrolytic capacitor