

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	($P_{Z,max}$ maximum)	($v_Z - i_Z R_{on}$)
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

2N3904
TO-92

Top view of
2N3904

NPN
(2N3904)

“Not
Pointing
iN”

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

2N3904 NPN BJT transistor

LM317(T)
TO-220

LM317

$\Delta \approx 1.25\text{ V}$

LM317 3-terminal adjustable regulator

Electrolytic

Polarized marking
(negative lead)

Radial lead

Axial lead

“**ACE**” — “**A**node **C**urrent **E**nters”

“**CCD**” — “**C**athode **C**urrent **D**eparts”

(Anode) + - (Cathode)

100 MF 16V

Electrolytic capacitor

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