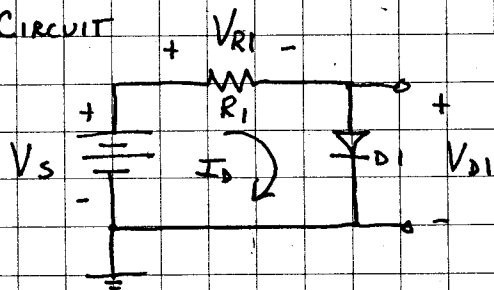


LAB 7: DIODE TRANSFER CHARACTERISTIC

C. CIRCUIT



- $V_S = 10.05V$ (MEASURED)

- VARY R_1 (AS SHOWN)

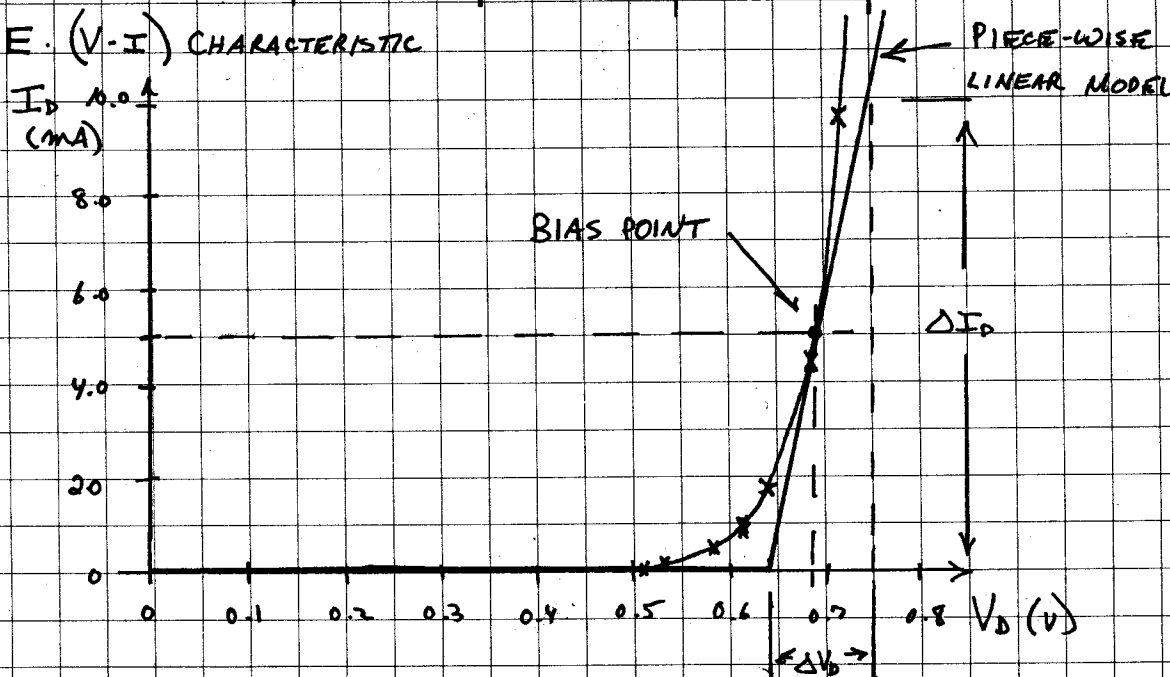
- MEASURE V_{R1}, V_D

- FIND $I_D = \frac{V_{R1}}{R_1}$

D. MEASUREMENTS

$R(NOM)$	$R(MEAS)$	VOLTS $V_{R1}(MEAS)$	VOLTS $V_{D1}(MEAS)$	mA $I_D(CALCULATED)$
1K	998 Ω	9.338	0.712	9.36
2K	2.07K	9.368	0.682	4.53
5.1K	5.16K	9.409	0.641	1.82
10K	9.91K	9.442	0.608	0.953
20K	20.2K	9.468	0.582	0.469
51K	51.7K	9.517	0.533	0.184
100K	103.3K	9.533	0.517	0.092

E. (V-I) CHARACTERISTIC



F. ESTIMATE r_d AT $I_D = 5mA$:

$$r_d \equiv \frac{\Delta V_D}{\Delta I_D} \approx \frac{0.75V - 0.64V}{10mA - 0mA} = \frac{0.11V}{10mA} = 11\Omega$$