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## **MATRIC N<sup>O</sup>**: 18/ENG05/056

## **DEPARTMENT:** Mechatronics Engineering

**COURSE:** ENG 222 (Electrical Engineering II) Assignment 1

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18/ENG05/056	
Manhatronica Enginperine	
Mechatronics Engineering ENG 222 Assignment	
ENO ZEZ isolymienti	
1) A zonar diade regulator is a	(i) Circuit Diagram:
1.) A zener diode regulator is a	
type of voltage regulator. They	+VO Note: Vz is DC
are designed to have a specific reverse	A /
breakdown voltage called the Zener	SP.
Voltage (Vz). It works like a regula	
Signal diode, although when it	
is in the release blas. It does	$V_{in}(V_s)$
not conduct electricity until	
the threshold value (VZ) is	$V_{out} = V_Z$ $R_L$
exceeded.	
ner current at fullbad of	
(1) Symbol: cathode The And	
	Rs = Series Restator =
D. 500	Vin= Input Voltage Ward
1-V Characteristic Curve:	Vout = Output Voltage -
Forwards A TF MONT	IL = Load Curren - monst
	It=tener Current Ser
Gias / demest =	WE = Zener Voltage T = 9 (1
Leverse 1 [Frill - Frill - Frill -	
Bids -VE	1-
Tacmin) T VE Forward Bibs	
0.3-0.2V 0103	
Izionazi / Reverse	2.0
constant IR Current	VOLEEV
- Zenervoltage	

Circuit diagram: RS 0 Vin Load with 112 and carrent IL. Vmax Z Rs= 12.732-10 300/000 V = 20 /max 0.5 distributed a landa Vin= 2V Rs = 5.464.02 V:n = 2×20 (ii) Zener current at full load of - 12.732V  $500 \Omega = Izmin$ -zmax = 500mA = 0.5A  $T_{L} = \frac{V_{2}}{R_{L}} = \frac{10}{500} \#$  $P_2 = SW$ RL 5=? = 0:02A starstorm  $I_{2min} = ? , I_{L} = ?$ = 20mA P= Izmax × Vz Izmin = Izmax - IL = 500m A - 20m A V2 = P2 = 480mA Izmax = 5 0.5 . V== 10V Rs = Vin-Vz IZmax