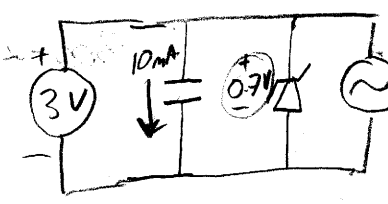


DIODE GIVES US GOOD REF VOLTAGE

BALANCES NOISE W/BREAKDOWN REGION

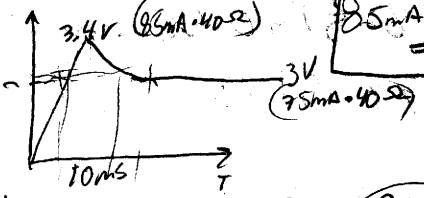
MOTOR PEAK CURRENT 85mA
- OPERATING CURRENT 75mA

CAPACITOR RESISTS CHANGES IN VOLTAGE

$i = C \frac{dV}{dt}$

12000 RPM
200 rpsec
T = 5ms

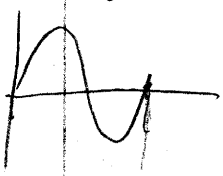
9000 rpm
↳ 150 rpsec



85mA · 75Ω = 6.375V

$10mA = C \frac{dV}{dt}$

$C = \frac{10mA}{\left(\frac{dV}{dt}\right)}$



$\frac{dV}{dT} \approx \frac{0.4}{5ms} = \frac{0.4}{0.005} = 80 \frac{V}{s}$

$C = \frac{10mA}{80 \frac{V}{s}} = \frac{10 \text{ m Columb/sec}}{80 \text{ V/sec}}$

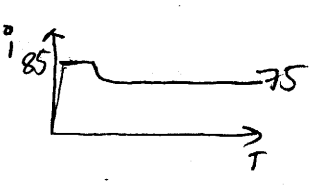
T = 6.66ms

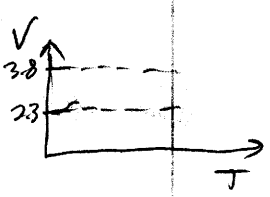
Round DOWN for faster RPM

$C = 125 \mu F$ Huge

↳ RADIO control Hobbiest 24kHz
↳ 3000 rpm 0.01μF

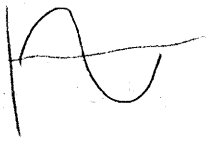
Rated Current = 75mA
TERMINAL RESISTANCE = 75Ω
START Volt 2.3V
START current 85mA

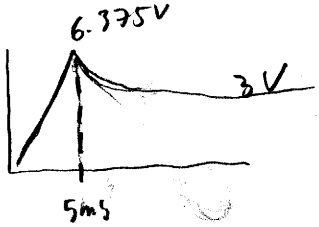




12000 rpm
200 rpsec
T = 5ms

85mA · 75Ω = 6.375V





$\frac{dV}{dt} = \frac{3.375V}{5ms} = 675 \frac{V}{s} = C = \frac{10mA}{675 \frac{V}{s}}$

(85mA − 10mA)

$C = \frac{10 \text{ m Coul/sec}}{675 \text{ V/s}}$

$C = 1.482 \times 10^{-5}$

$C = 14.82 \mu F$