

14 MAY 13

TRANSISTOR SELECTION.

IDEALLY, WANT SOMETHING WITH LOW R_{DS} , BUT CAN BE DRIVEN BY 5V

10A CONTINUOUS DRAIN CURRENT - MORE IS BETTER
PULSE DRAIN CURRENT TO 40A

TO-220 PACKAGE

LOWER C_{gs} - ELSE POWER CONSUMED IN SWITCHING, NOT STAYING ON.
COULD LOWER SWITCHING FREQ, BUT THEN NEED BIGGER CAPACITORS.

NXP SEMICONDUCTOR PSMN5R0 - 80PS

TYPICAL 5.5 mΩ R_{DS} @ $V_{GS} = 5V$

UP TO ABOUT 75A

INFINEON 1PPO48N12M3G 100A

TYP 7 mΩ @ $V_{GS} = 5V$ TO 55A

771 - PSMN5R0 - 80PS ¹²⁷ \$1.82

512 - FDPF085H10A $V_{DS} = 0.6V$ @ $V_{GS} = 5V$, 40A
NOT GREAT, BUT ISOLATED PACKAGE - CASE ≠ DRAIN

1PPO48N12M3G $R_{DS} \approx 7m\Omega$ @ $V_{GS} = 5V$, $I_D = 40A$
 $C_{gs} = 9000 pF$

→ IRFB4110PBF $C_{gs} = 9000 pF$ $V_{GS} = 5V \rightarrow V_{DS} < 0.2V$ @ $I_D = 40A$
LOW R_{DS} RES. \$5.18

MOUSER SEARCH: TO-220 PKG (ANY KIND) N-CHANNEL MOSFET
 V_{DS} BREAKDOWN = 80-150V

512 - FDP027H08B-F102 $C_{gs} \approx 10000 pF$ $I_D = 60A$ up @ $V_{GS} = 5V$

→ $V_{DS} > 0.4V$ @ $V_{GS} = 5V$, REJECT

01 Jul 13
Roderick

MOUSER ORDER

1720017 PHOENIX CONNECTORS

1000 μ F 50V LOW ESR CAPS

512-MNBT6427 DARLINGTON

625-B2T52C5V1-V ZENER SMD-123 5.1V

MEYCO 3238 W/ STRAIN RELIEF

3444 BLK 3445 GRN

NTSJ300100CTA - TO-220AB SCOTTICK, WILL IT
WITHSTAND 75V?

PMP BCX71K

CAPS TO FIX

DESKTOP COMPUTER

Module 1

555

22 μ F 1206 CAPS

1 μ F 1206 "

.1 μ F " "

10mm LEADS?

oshpark.com -
community PCB
orders

MOSFET PROTOTYPING CHOICES

03AUG 2013

Roderick.

TOTEM-POLE MOSFET CHOICES. ONE SOT-23 FOR ACTUAL BOARD, BUT CAN USE TO-92 FOR PROTOTYPING. WANT LOGIC LEVEL DRIVE, AND 500mA ~~CAN~~ DRAIN CURRENT.

OH Mouser, P-~~check~~ TO-92 only 26 choices in stock.

TP606N3-G \$0.84 ea. 500mA @ $V_{GS} = -5V$

TP60443-G \$1.24 SLIGHTLY HIGHER CURRENT

VP3203 \$1.30 $C_{in} = 200pF$ 2A @ $V_{GS} = -5V$
ALSO COMES IN SOT-89 (108 PKG)


LP0701 $C_{in} = 120pF$ 2A @ $V_{GS} = -5V$
ALSO COMES IN SOT-8

N-channel, 86 choices $C_{in} = 29pF$ 800mA @ $V_{GS} = 5V$

BS170 ALSO IN SOT-23 2A @ $V_{GS} = 5V$

ZNA210A $C_{in} \sim 100pF$ ONLY IN TO-92

TH0104 \$0.89 $C_{in} = 70pF$ 1A @ $V_{GS} = 5V$

TH0604 \$1.00 $C_{in} = 140pF$ 1.5A @ $V_{GS} = 5V$ 

TH0702 N3-G 20V PART, 130pF 2A @ $V_{GS} = 5V$ ONLY TO-92

VM3205 $C_{in} = 220pF$ 3A @ $V_{GS} = 4V$

Mouser PMV160UP, 215 $C_{in} = 365pF$ X ALSO IN ~~TO-89~~ SOT-89 N4444

05AUG13

Roderick

PTC DESIGN IS TOO UNSTABLE TO GO TO FAB. NEED MORE EXPERIMENTS. HAVE TO ORDER SOME PARTS -

TO-220 TRANSISTOR NMOS, NEED TO-220 TO BE ABLE TO HEAT SINK

NMOS, PMOS DRIVERS, BOTH TO-92, AND SOT-89

DARLINGTONS FOR FLASHER

PHOENIX CONNECTORS

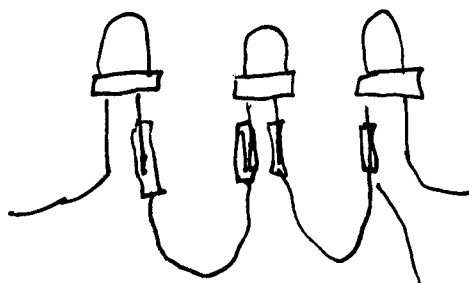
BULK CAPACITORS ZENER

316K & OTHER COMMON VALUES

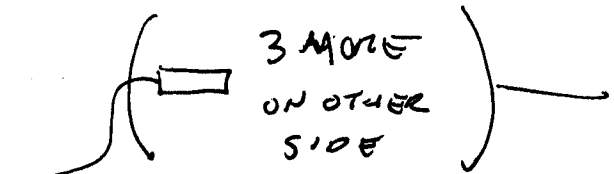
USB OSCILLOSCOPE - BID LATE TUES NIGHT, 60.01, OR

VERY EARLY TUES MORNING. IF NO WIN, GET emilyandlily one.

LED TAIL LIGHTS



HEAT SHRINK



LOOKS LIKE CAN GET NMOS, PMOS DRIVERS IN TO-92/SOT-23, TP21054 & TN2106 FROM SUPERTEX.

Ø7 AUG 13

MORE MOS DRIVER CHOICES - MOSFET

P CAN

BSS84 - 180mA 950723 $C_{10} = 73\text{pF}$

AS EFFICIENT OVERVOLTAGE CUTOFF, BUT COULD
ALSO BE MOS DRIVER

BSS84AK - 180mA

TP0604 TO12 $\sim 0.43\text{A}$ 95pF

→ TP2104 TO92 & 50723 35pF TIP
 $R_{DS\ ON} \sim 8\Omega$ $V_T = 1 \text{ TO } 2\text{V}$

→ TN2106 TO12 0.5A 23 $R_{DS\ ON} \sim 5\Omega$
 $C_{10} = 35\text{pF}$

NEED SOMETHING THAT CAN BE TO-92 FOR BREADBOARD,

SURFACE MOUNT FOR PC BOARD

MAIN RECTIFIER DIODE CHOICES. TO-220, 80V MINIMUM

NTST 30120 CTG 120V 0.5V_F @ 5A DUAL

07 AUG 13

5 BA499

MOUSE
ORDER

2 BCX71K

2 BZT52C 5V1

2 LM393 SO-8

10 MMBT 6427

~~1 VN3205 T092 TN2106 T092~~

~~2 VN3205 SOT8 TN2106 T23K1~~

~~1 VP3203 T092 TP2104 T092~~

~~2 VP3203 SOT8 TP2104 SOT23~~

~~1 PPT SOT23~~

5 1000µF, 50V CASE = 16mm DIA
7.5mm LEAD SPACING.

2 PROEX 1720017 COM4.

2 BZG03C47TR 47V 3W ZENER
600W SURGE .25

10 ea.	10Ω	✓ 1M
	✓ 10Ω	✓ 20K
	✓ 100Ω	✓ 3.16K
	✓ 1KΩ	✓ 316K
	✓ 10K	✓ 46.4K

1206 RESISTORS
124 QTY 1
.015 QTY 10
10/154 ALWAYS
GET 10