

Mosfet Type on Laptop Motherboard

By Adie Dkhaz

There are 4 type of mosfet's SO8 on laptop motherboard

1. P channel mosfet
- 2.N chanel mosfet
- 3.dual P channel mosfet
- 4.Dual N chanel mosfet

each type could substitute as long as same type even with different marking code.

Easy way to identified look at the end number of marking code .

example :

AO 4433 look at end of marking code number is odd numbers (3)



this is P channel

example : **AO 4407** (7) is odd number ,this is P channel too,
they could be substitute each other even different manufacture and code.

Others P chanel examples :

AF 4825-AM 3423-FDS 6679-SI 4835 ETC

Other example : AOD 4466



look at last number of marking code it is even (6) numbers it's mean this is N channel mosfet and they could replace by other N channel even different manufacture and code .

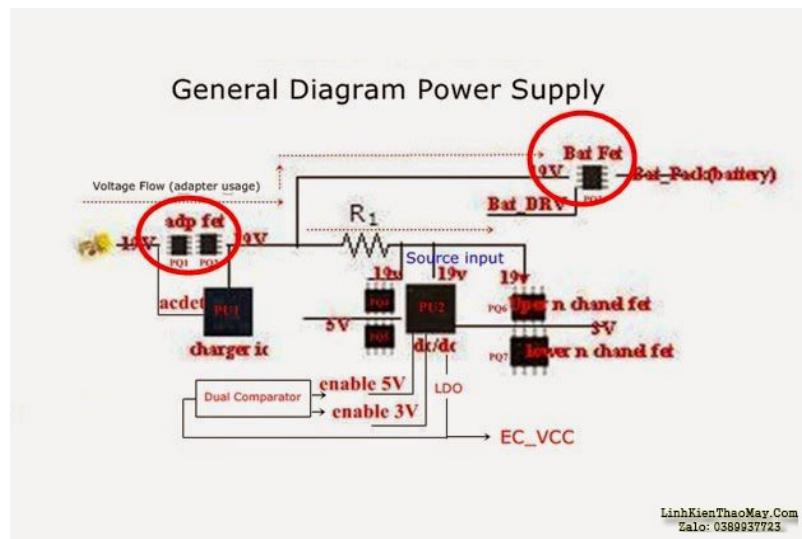


Others N channel mosfet examples: **AO 4800**

AO 4474-AP 4232-FDMC8844-SI 4812 ETC

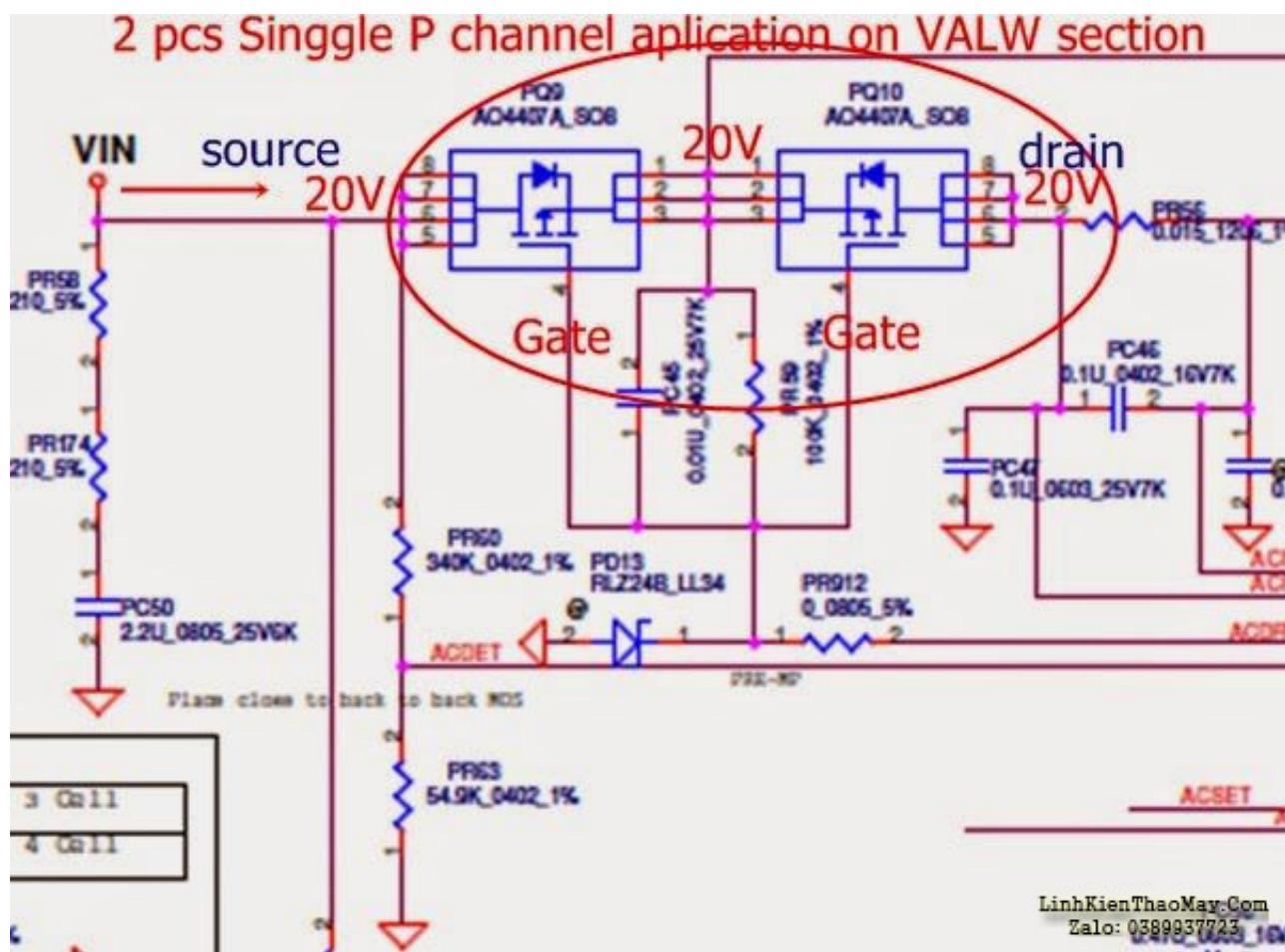
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We can see P channel mosfet function on this “**GENERAL LAPTOP MAIN POWER**” layout link :

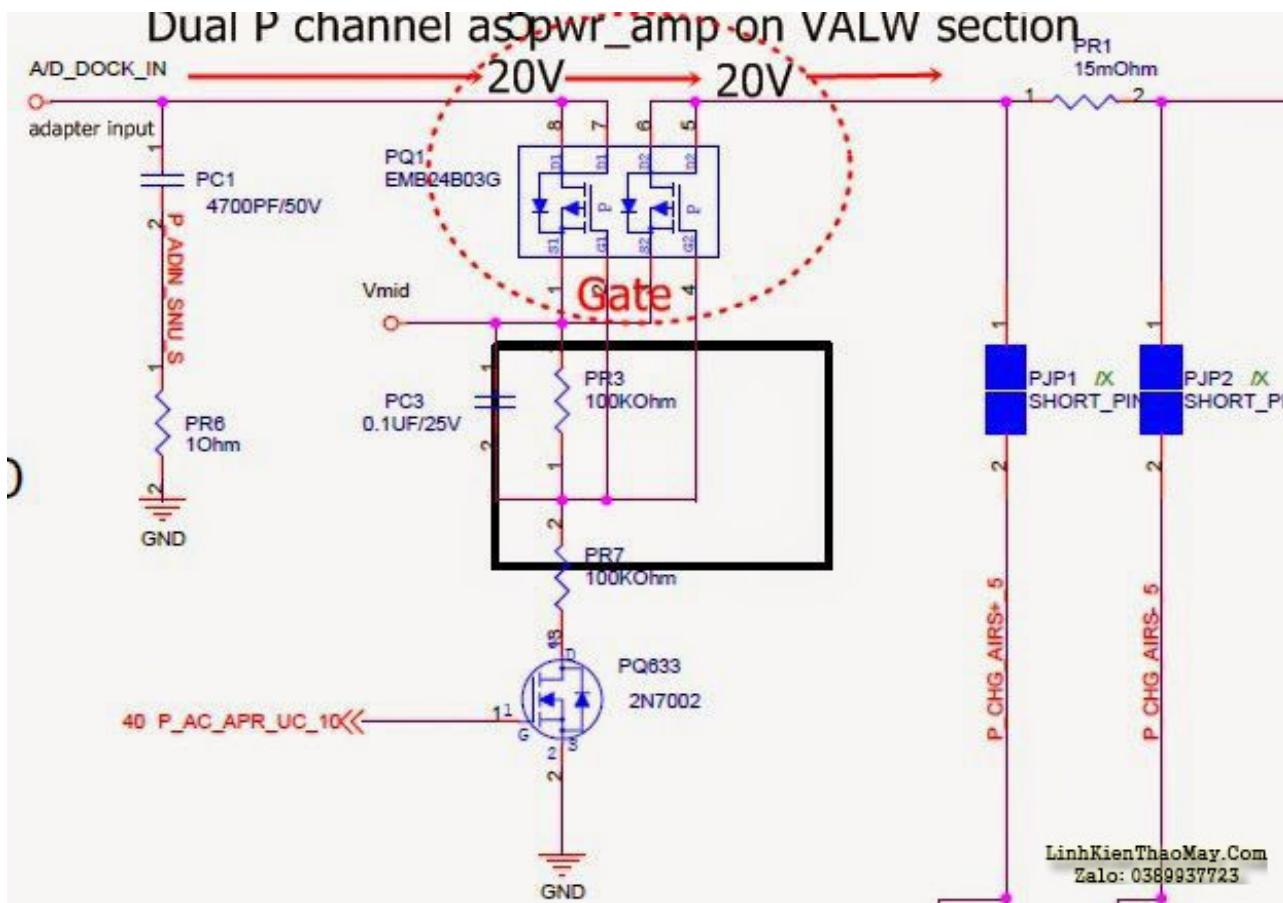


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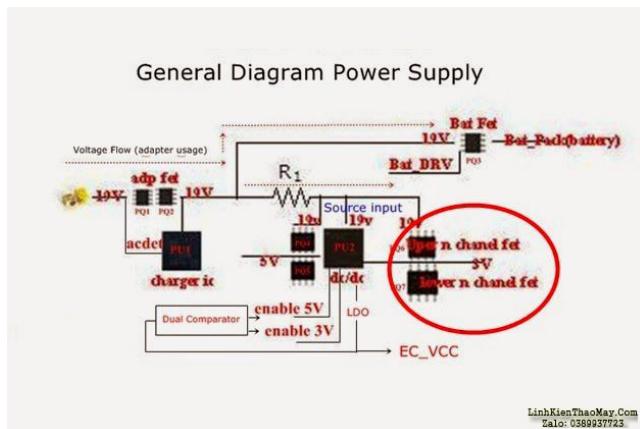
I call it "VALW MAIN LINE" .from this line Battery ic and dc/dc power supply ic get VCC to powered each ic and this main VALW line also distributed adapterVoltage to every N channel Source ,before they got enable trigger to produced 3 and 5V_ALW.....



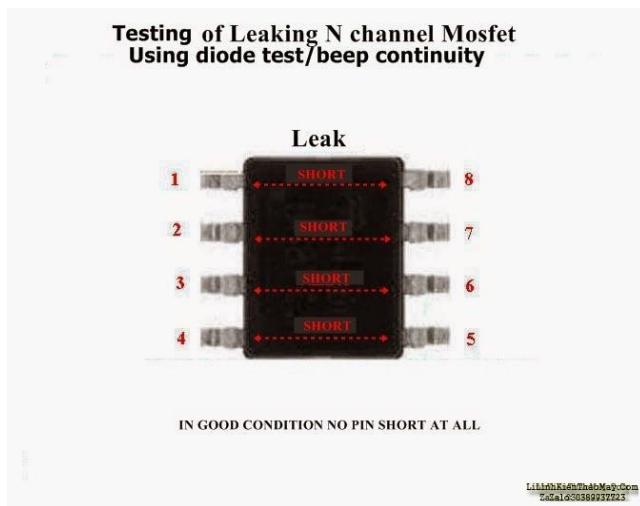
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This is How 2 pcs P chanle replace by 1 Dual P chanle Mosfet



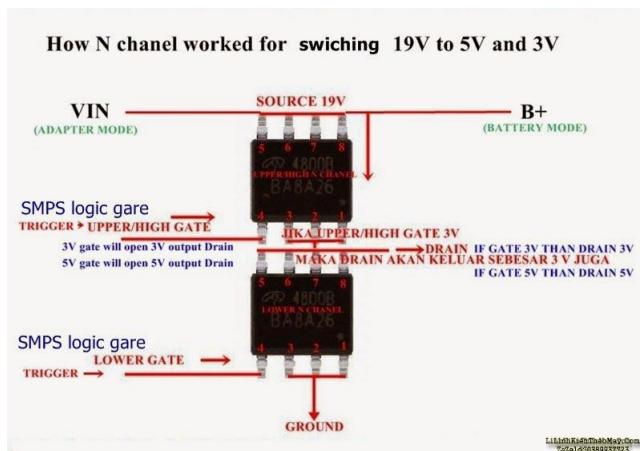
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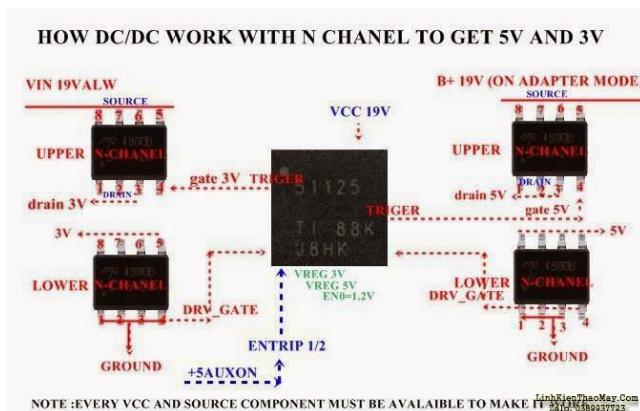
and what happen if P or N channel leak and what if suppose N channel replace with and P channel and what damage it could be on this link:



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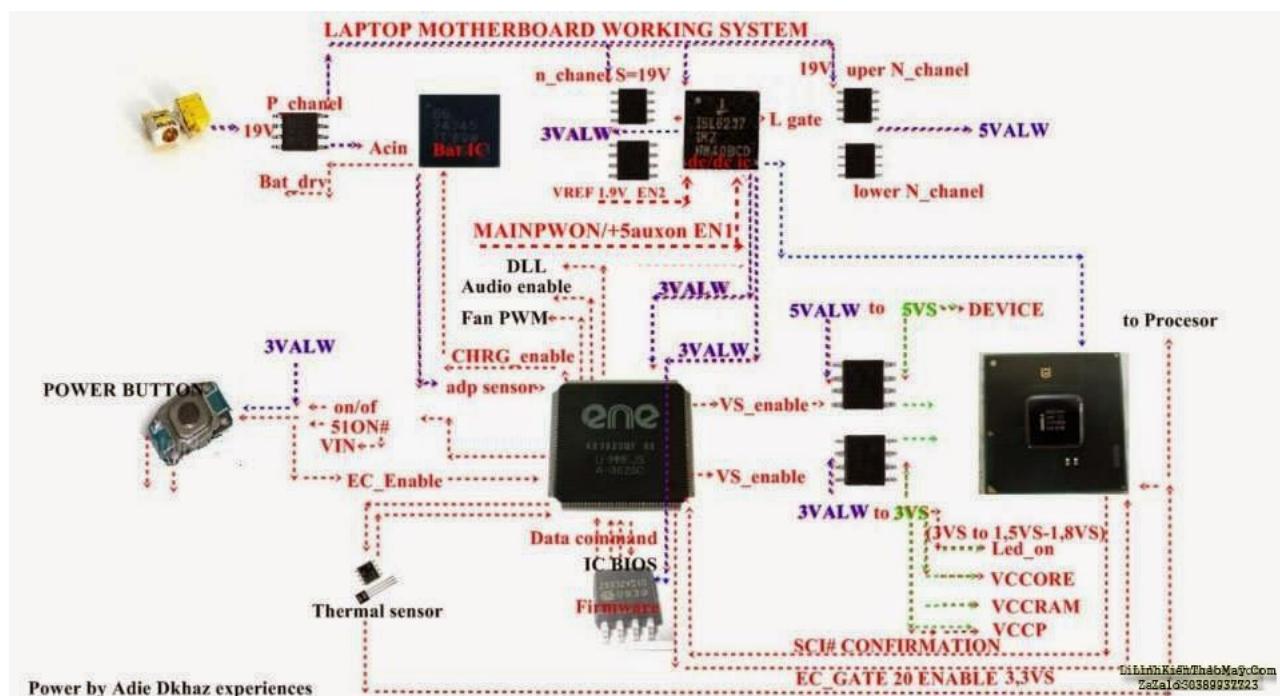
How do (RT8223-TPS 51125-TPS 51123) work and signal need on this link :



If you confused ,you should read this before

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browse the data sheet , if they not found get mosfet location code on board than find on schema by typing marking code to adobe reader search column to look the correct marking code than browsing the datasheet again to get know mosfet type and get substitution...

this is one of sample N channel (SO3) code : 2N7002 -P0603BDG



samples (SO3) P channel mosfet :

FDD6685 - SI12301 -TP0610K.

sample datasheet link for N channel (SO3) 2N7002
 : <https://www.fairchildsemi.com/ds/2N/2N7000.pdf>

Testing N Chanel mosfet on circuit

FDMC8884
N-Channel Power Trench® MOSFET
 30V, 15A, 19mΩ

Top
Bottom
Component Code = Q (Transistor)
 PQ (Power Transistor)

TEs Continuity/Buzzer
 S short to D = Leacking(bocor)
 D short to G = Leacking(bocor)
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application on board

S=19V G=3V D=3V	S=19V Atau G=5V D=5V	S=5V Atau G=3V D=3V
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Simple concept

D=Drain

S=Source

Trigger Signal
 S=3V Atau G=1.1V Atau Scema apply
 D=1.1V

G=Gate (Upper gate)
G=Gate (Lower gate)

LinhKienThaoMay.Com
 Zalo: 0389937723
 Power by experiences of Adic DKaz

2 mosfet in one package ,it is a simply vrm switching mosfet circuit in single mosfet package ,drain connected with diode cathode and source is connected with anode that how to identified a N-Channel mosfet.

N chanle caracter common base



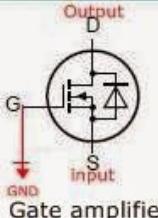
2N7002

60 V, 300 mA N-channel Trench MOSFET

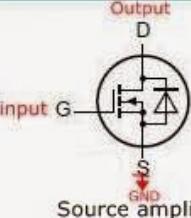
On Circuit Fet's Function Identification

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	G	gate		
2	S	source		
3	D	drain		

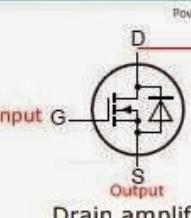
on board application



Gate amplifier



Source amplifier



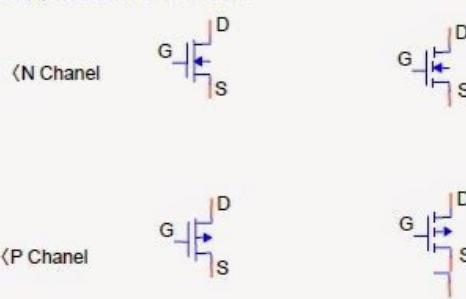
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Drain amplifier

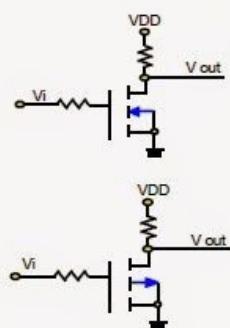
n-channel mosfet voltage flow is drain to source for positive supply - when you apply + positive volt in gate then this mosfet drive voltage drain to souce (gate works same as transister base) if you want to drive nagative volt from n-channel mosfet then nagative volt drive source to drain mean for nagative volt input is source and output is drain

Transistor Logic Gate Characteristic

Fet application on circuit



V_i = Voltage input
V_o = Voltage Output



V _i	V _{out}
Lo	Hi
Hi	Lo

V _i	V _{out}
Lo	Lo
Hi	Hi

Inverter GATE



AND GATE



OR GATE



NAND GATE



NOR GATE



A	B	OUT
0	0	1
0	1	1
1	0	1
1	1	0

A	B	OUT
0	0	1
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n channel mosfet logic low (vi) that mean mosfet not close circuit between the drain and source ,v_out you got vdd voltage via resistance . (Hi)

when you apply vi = Hi in N-Channel mosfet ,mean drain to source connected (close circuit) in this case you got v_out source low you can got at v_out .same way in P-channel but gate work reverse as n-channel mosfet work

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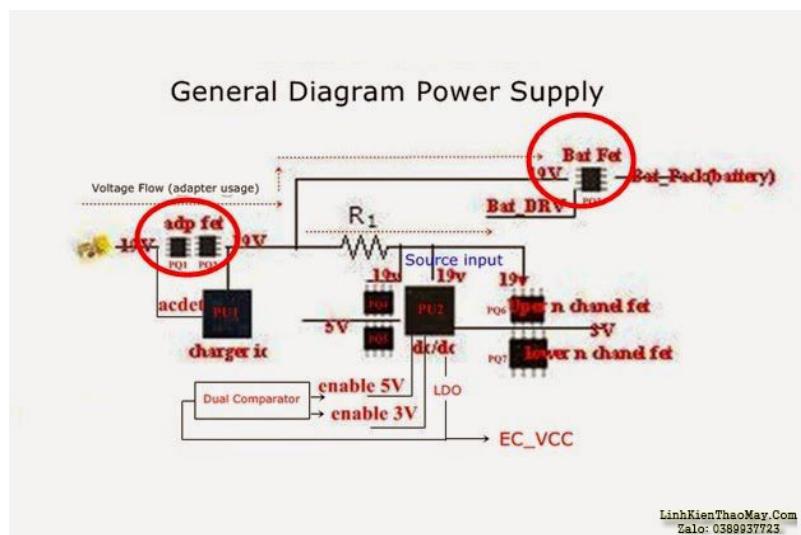


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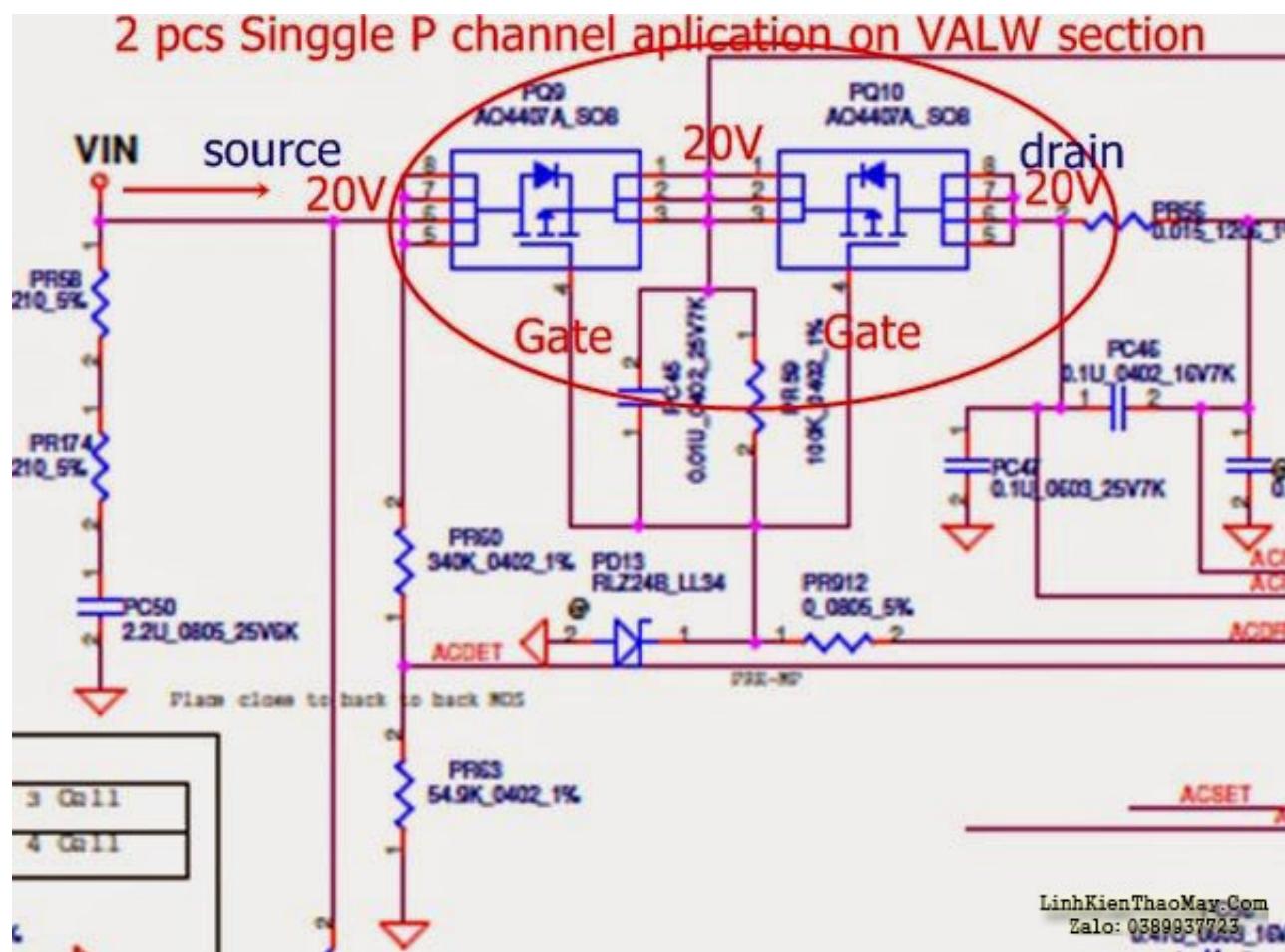
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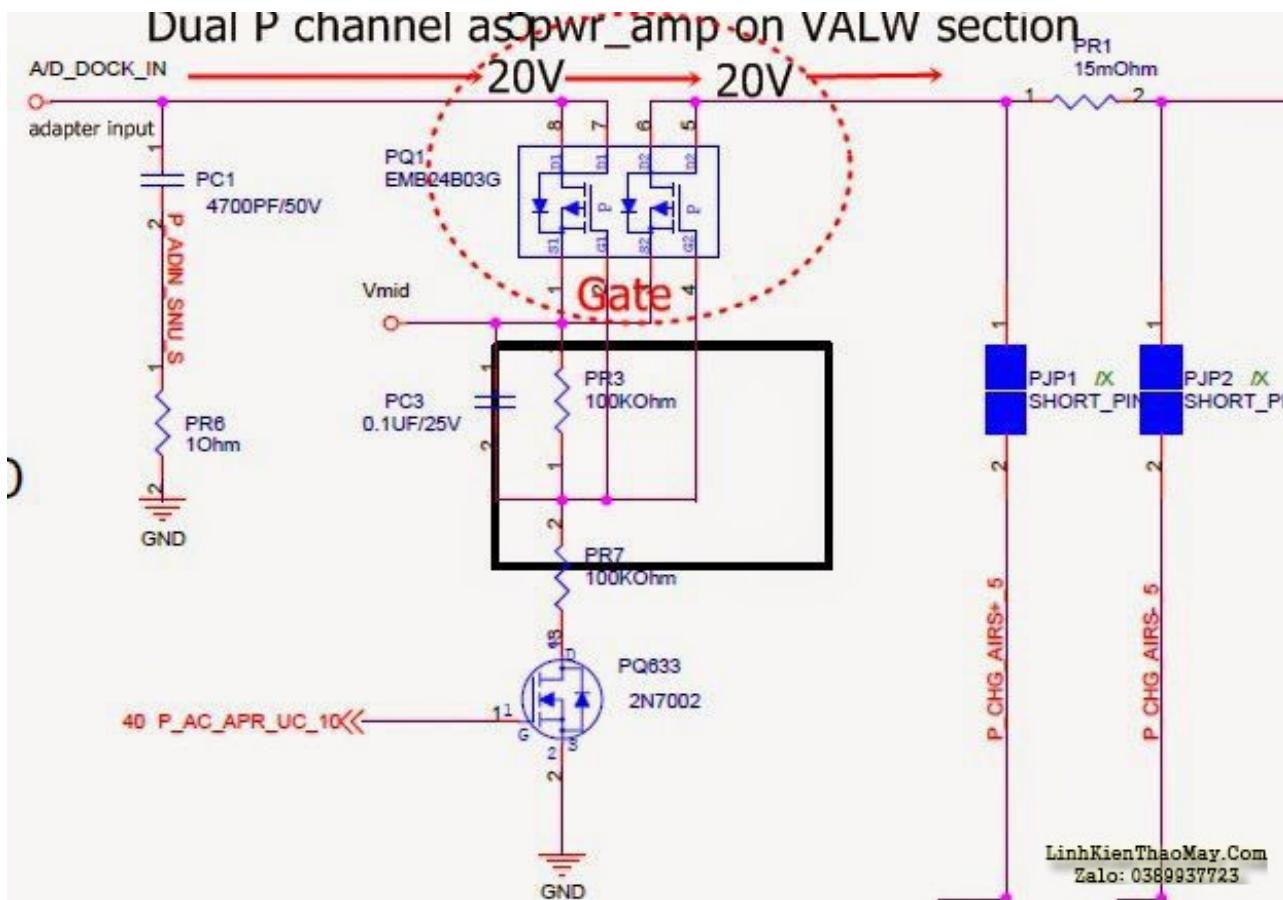
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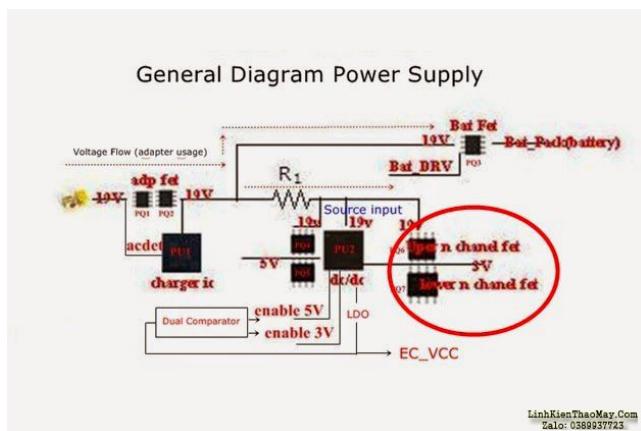
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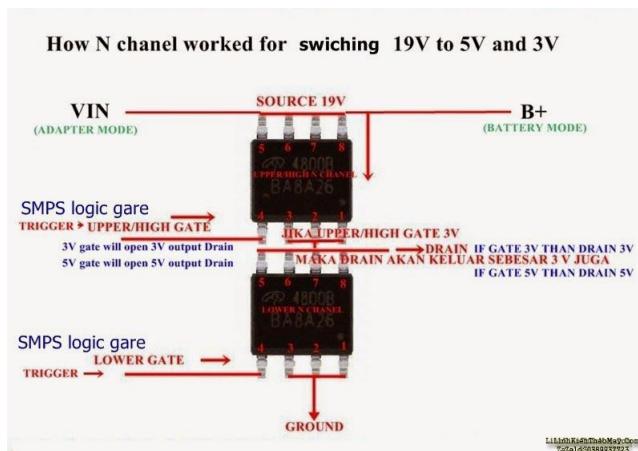
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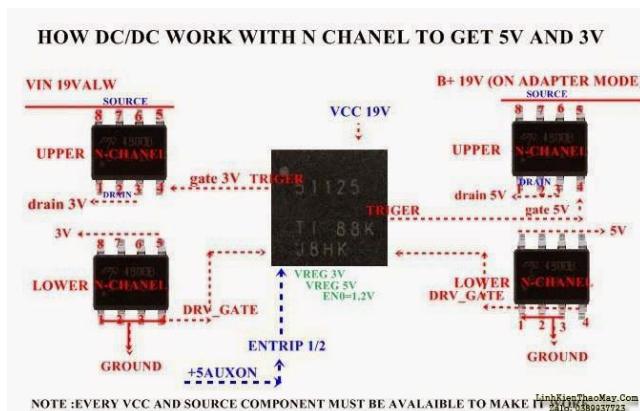
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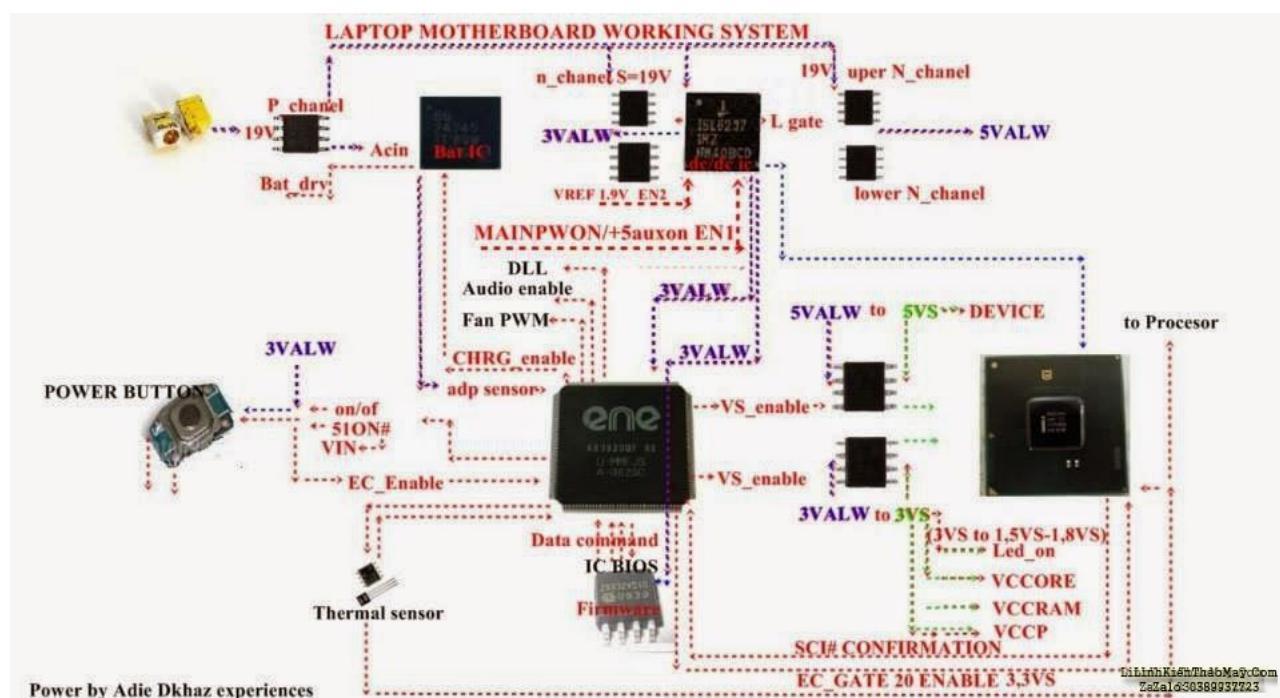
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on board application	
	SOT23 (TO-236AB)

TRUNG TÂM SỬA CHỮA ĐIỆN TỬ QUẢNG BÌNH

MR. XÔ - 0901.679.359 - 80 Võ Thị Sáu, Phường Quảng Thuận, tx Ba Đồn, tỉnh Quảng Bình

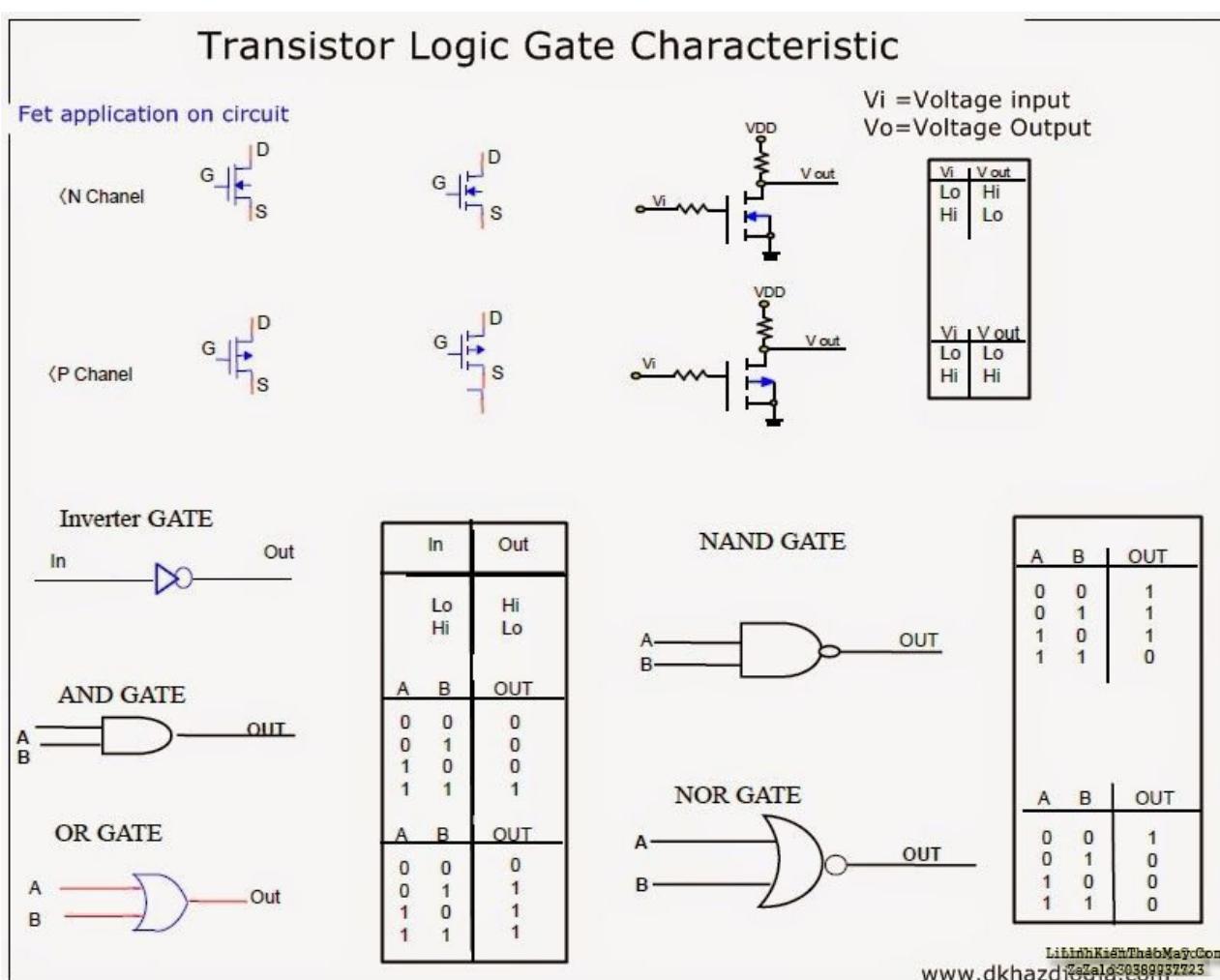


TRUNG TÂM SỬA CHỮA ĐIỆN TỬ XÔ NGUYỄN

- Dịch vụ sửa chữa điện tử tại nhà
- Cung cấp linh kiện điện tử
- Tư vấn lắp đặt nhà thông minh

Đc: Quảng Thuận, tx Ba Đồn,
tỉnh Quảng Bình - 0901.679.359

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Các bài viết tương tự:

1. [Các loại IC \(Integrated Circuit\) thường gặp trên mainboard](#)
2. [Các loại RAM và mạch nguồn RAM trên mainboard Laptop](#)
3. [cách độ nguồn LCD nhiều loại - LCD Samsung bị cháy IC nguồn, dùng loại 6 chân nào để độ vậy các bạn](#)
4. [cách nạp bổ xung ga cho điều hòa - xin chào các bác. e mới vào nghề.mùa hè này e có kế hoạch đi vệ sinh điều hòa và nạp bổ xung ga cho khách. các bác cho e hỏi trên thị trường có nhiều loại như vậy thì mình nạp bổ xung ga như thế nào. ví dụ như dòng daikin. lg](#)
5. [Can giup do xac dinh cac mac nguon tren main laptop - Em muon do tim va cach xac dinh cac mac nguon tren main bo laptop](#)
6. [chao cac ban. - dan am thanh KENWOOD rat mong cac ban gop y giup minh chuyen la the nay minh moi nhan dc cua khach nho sua chua cho dan am thanh kenwood chay radio va doc dia CD nhung may khach mang toi trong tinh trang chap phan cong suat](#)

.DIA va RADIO van hoat dong binh thuong nhung bi chap CONG SUAT nen kep loa vao dinh u neu de lau loa se bi chay .hien gio minh van chua dam lam gi ca moi kiem tra so bo thi thay chay con STK4150 minh nhin ma da thay chuoi roi vi hang xach tay ma lai thay con STK4150 minh chua thay gap con nay bao gio vi vay nho cac ban gop y va giup minh xem tren thi truong co con nay khong vay?tro gioi lieu co ko cac ban nhe?ban nao da tung lam qua ban nay xin giup do minh mot tay.thank cac ban nhieu.

7. Nhận biết các linh kiện trên mainboard Laptop-Phần 1
8. Nhận biết và phân loại các IC nguồn trên mainboard Laptop
9. Phân loại và chi tiết nguyên lý hoạt động của các loại Diode thông dụng
10. Thực hành tra cứu các loại IC trên mainboard Desktop
11. tivi Samsung 21z50mn bị khoá chói - Chào các ae lâu quá ko lên dd, ae cho em hỏi tivi Samsung 21z50mn slim có cao áp nhưng ko có chói. em đो có tim đèn, có 200v,g2 còn có 150v..em tìm cao áp 21a004thay thử nhưng ko có loại này. có thể thay loại nào tương đương ak. có phải phải máy bị đèn yếu khoá chói ko ak. máy chạy tổng tda 1202, VERTLA7814, nguồn str 6750.
12. Toshiba - Cho em hỏi công tắc cửa toshiba loại 3 rắc cắm có thay dk cho loại 4 rắc cắm k các bác