

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 channel mosfet
3. dual P channel mosfet
4. Dual N channel 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 channel 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 .

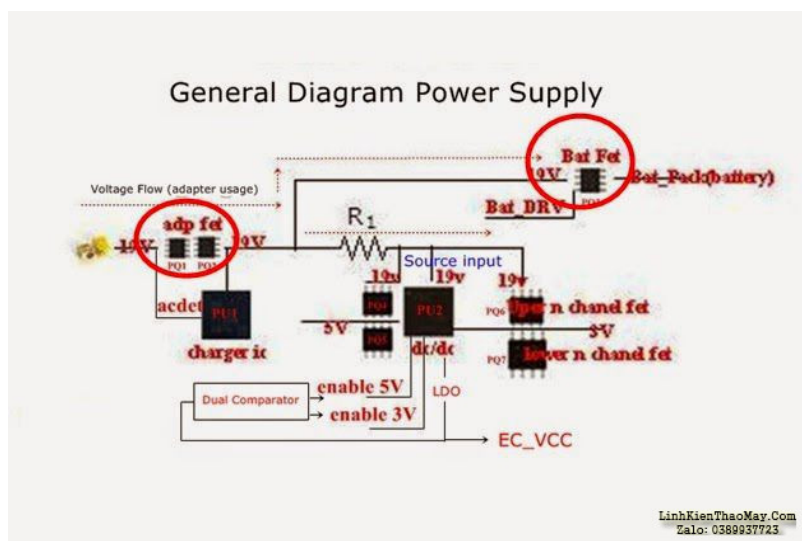


Others N channel mosfet examples: **AO 4800**

AO 4474-AP 4232-FDMC8844-SI 4812 ETC

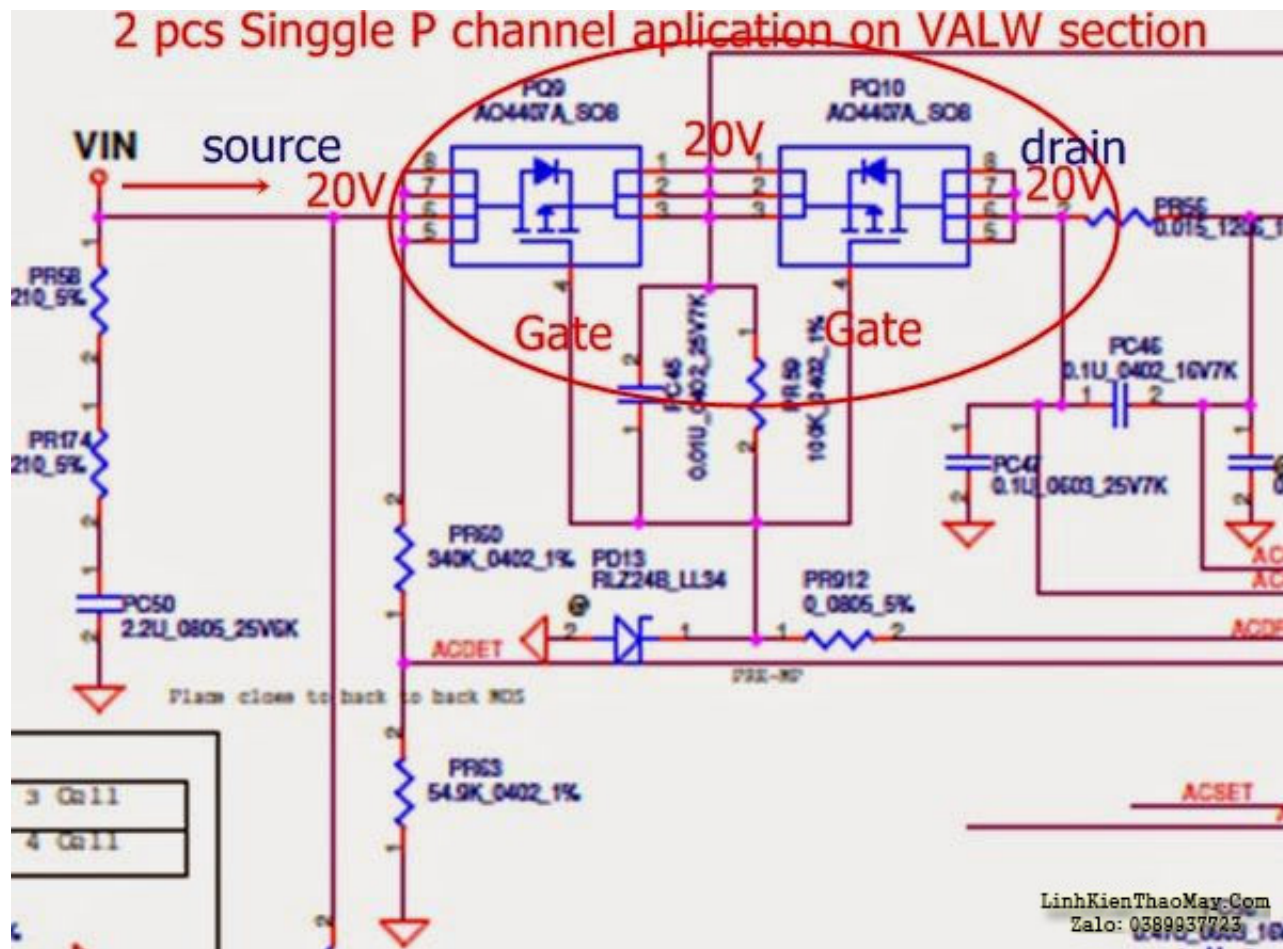
those mosfet identified only for SO8 mosfet.

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

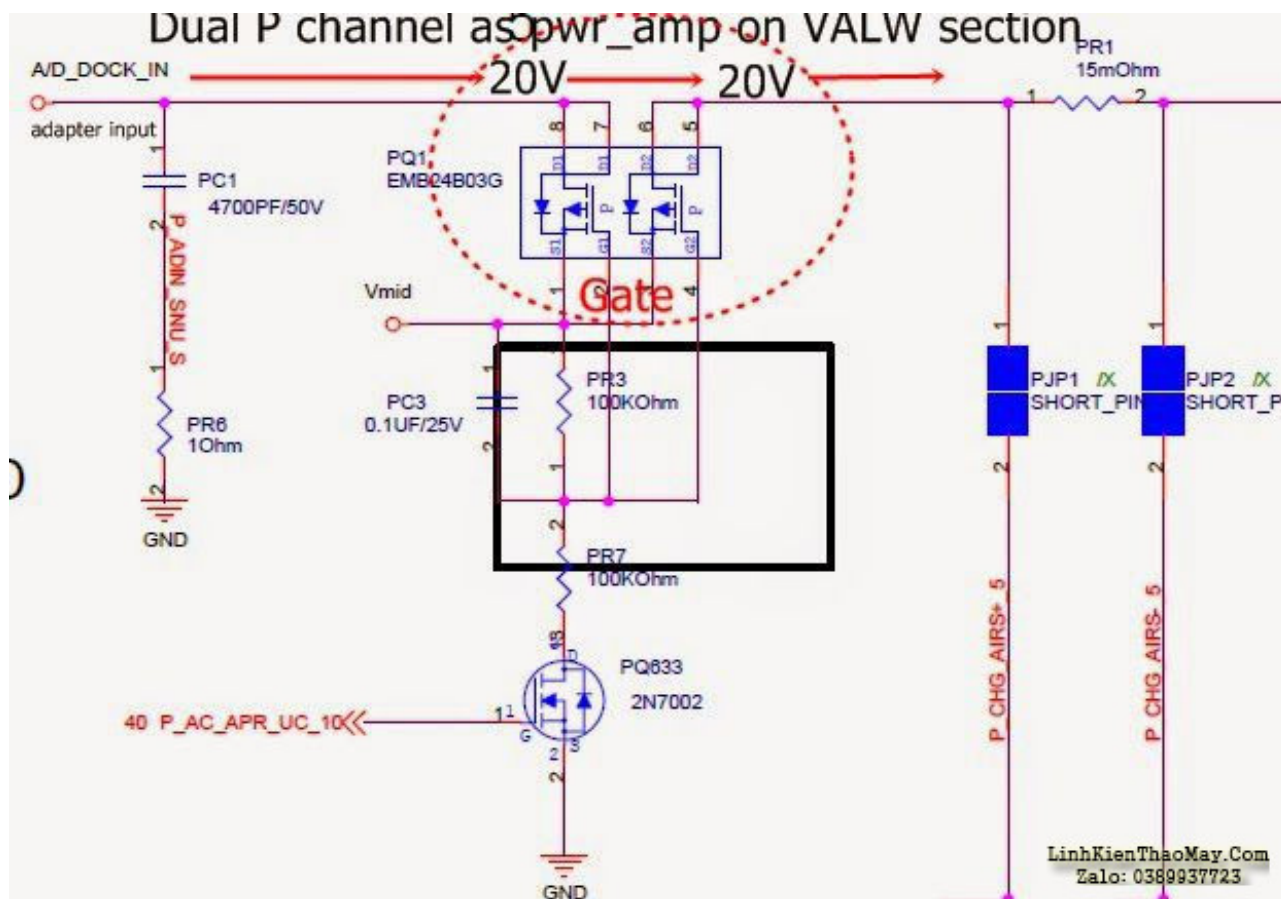


There are only 3 pcs P channel there ,2 pcs ADP(adapter) fet's and 1pcs Bat (battery)fet .some motherboard also may have 1 adp Fet,some replace with diodes to supply every adapter supply need.

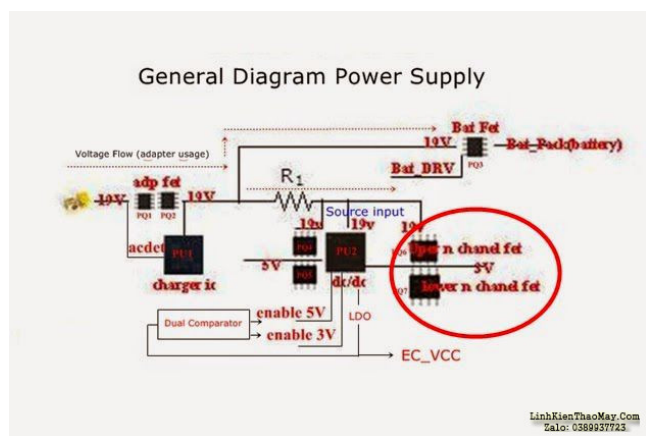
I call it "VALW MAIN LINE" .from this line Battery ic and dc/dc power supply ic get VCC to powered each ic and this main VALW line also distributed adapterVoltage to every N channel Source ,before they got enable trigger to produced 3 and 5V_ALW.....



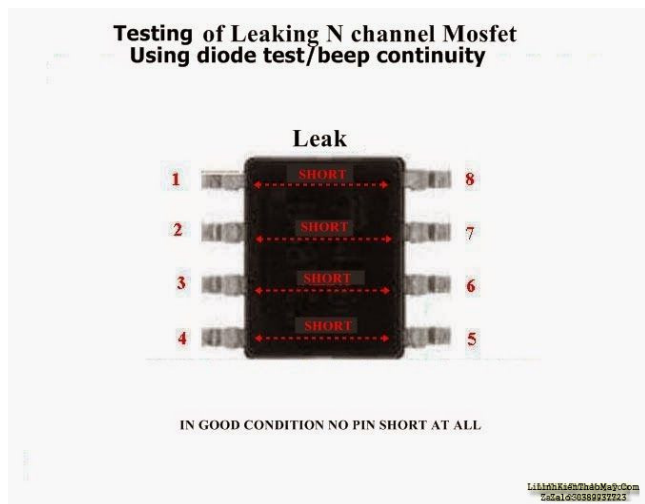
P-channel mosfet works drain is a input for negative supply and source is a output for negative supply ,and it's gate on with negative volt .same way if you want to drive positive supply from p-channel mosfet then souce is input and drain is output for positive supply . This is How 2 pcs P chanel replace by 1 Dual P chanel Mosfet



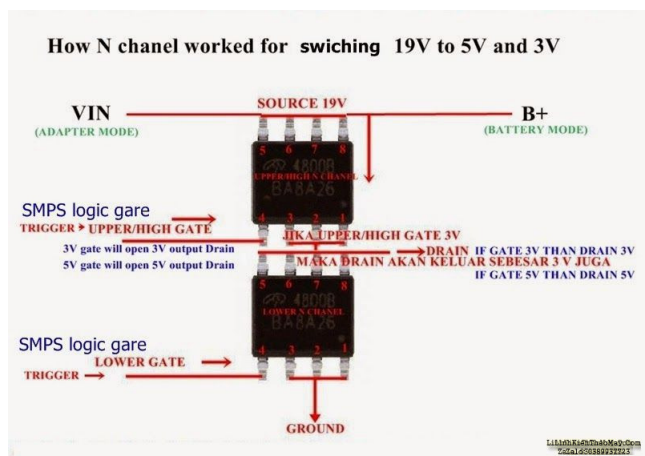
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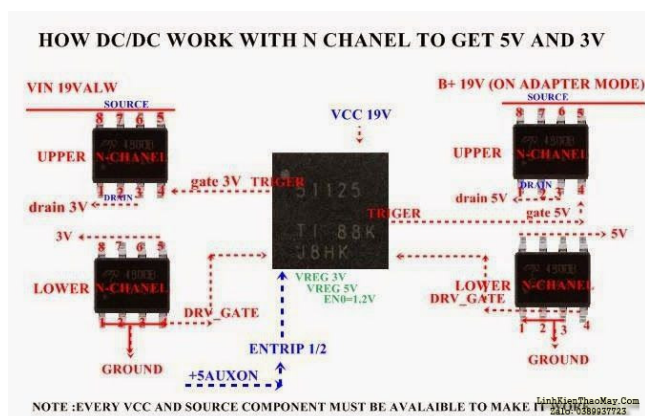
and **what happen if P or N channel leak and what if suppose N channel replace with and P channel and what damage it could be** on this link:



How DC/DC main power supply open/close gate N channel to produce 3V and 5V_ALW and important signal enable/disable function to activate the DC/DC main supply ic (ISL 6237-RT 8206-TPS 51247) on this link:



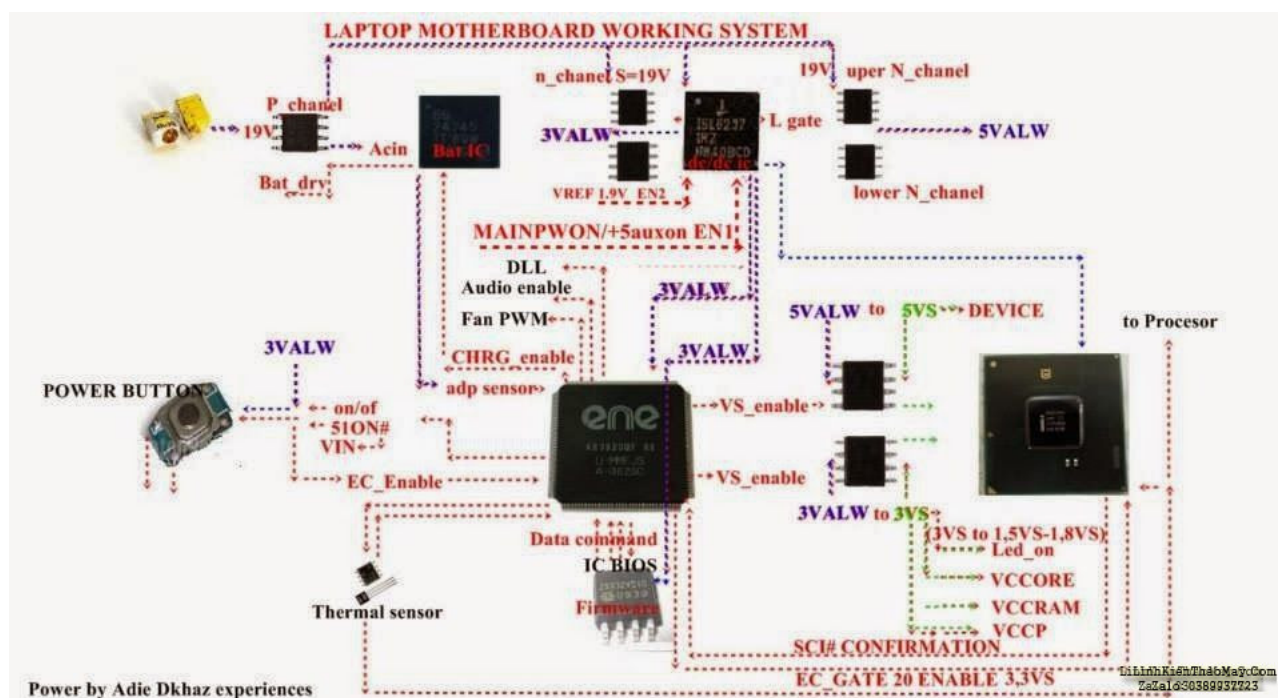
How do (RT8223-TPS 51125-TPS 51123)work and signal need on this link :



If you confused ,you should read this before

Introduction of System Power Laptop Motherboard in

this link



and to avoid accident before repairing you should read

THINGS THAT SHOULD NOT BE TAKEN IN MOTHERBOARD REPAIR

We will also found (SO3) P channel ,(SO8) mean mosfet have 8pin and (SO3) mean they have 3 pin.And this (SO3) also have P or N channel type .so be ware if you want to make replacement .just make sure replace it whit same type .

Other way to Identified for (SO6) and (SO3) Mosfet transistors are by finding the marking code on ic than

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

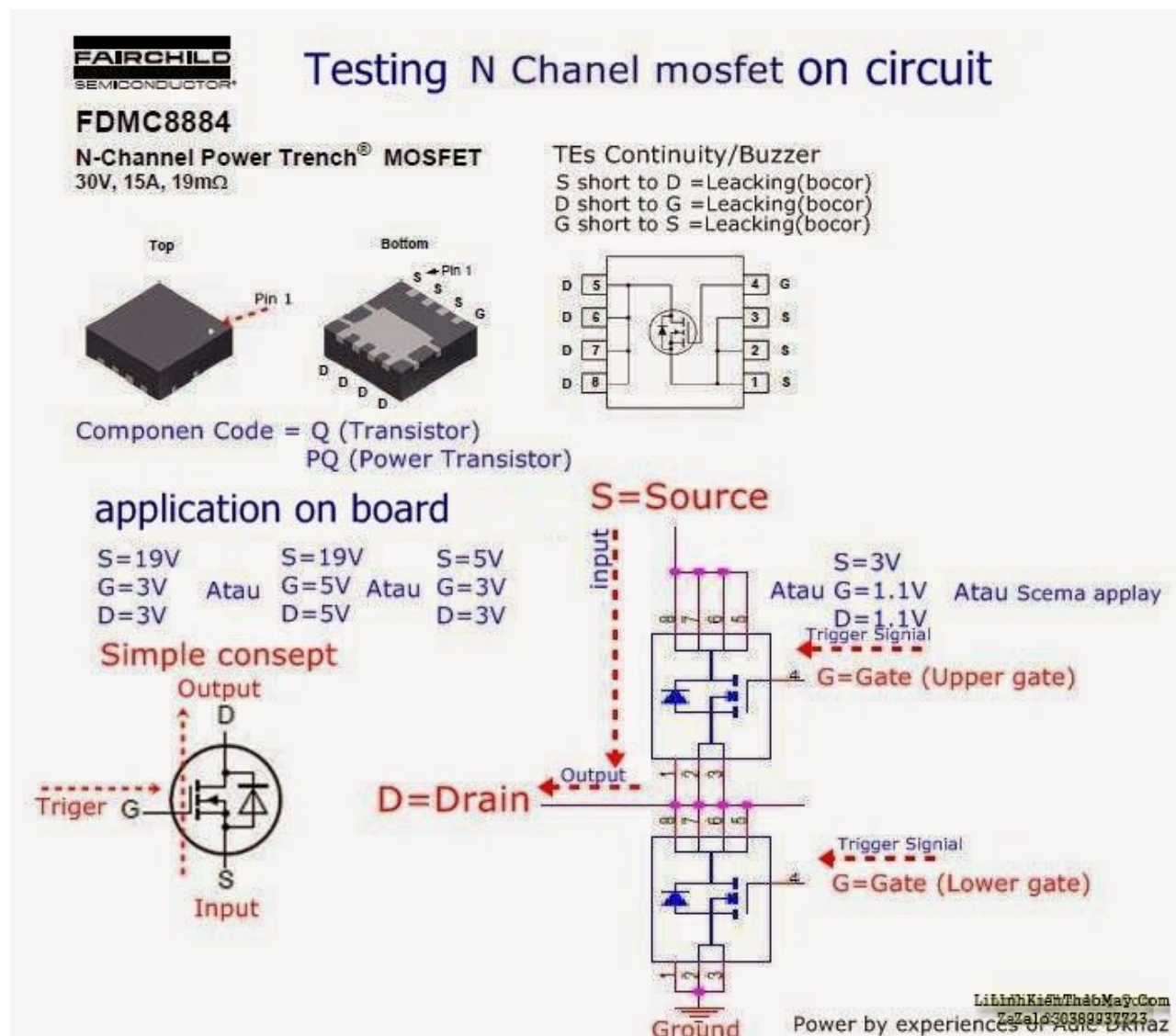


samples (SO3) P channel mosfet :

FDD6685 - SI12301 -TP0610K.

sample datasheet link for N channel (SO3) 2N7002

: <https://www.fairchildsemi.com/ds/2N/2N7000.pdf>



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 chanel caracter common base



2N7002

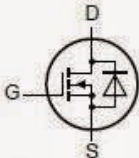
60 V, 300 mA N-channel Trench MOSFET

On Circuit Fet's Function Identification

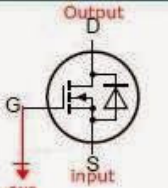
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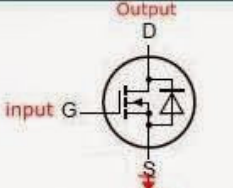
SOT23 (TO-236AB)



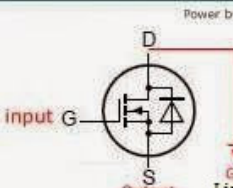
on board application



Gate amplifier



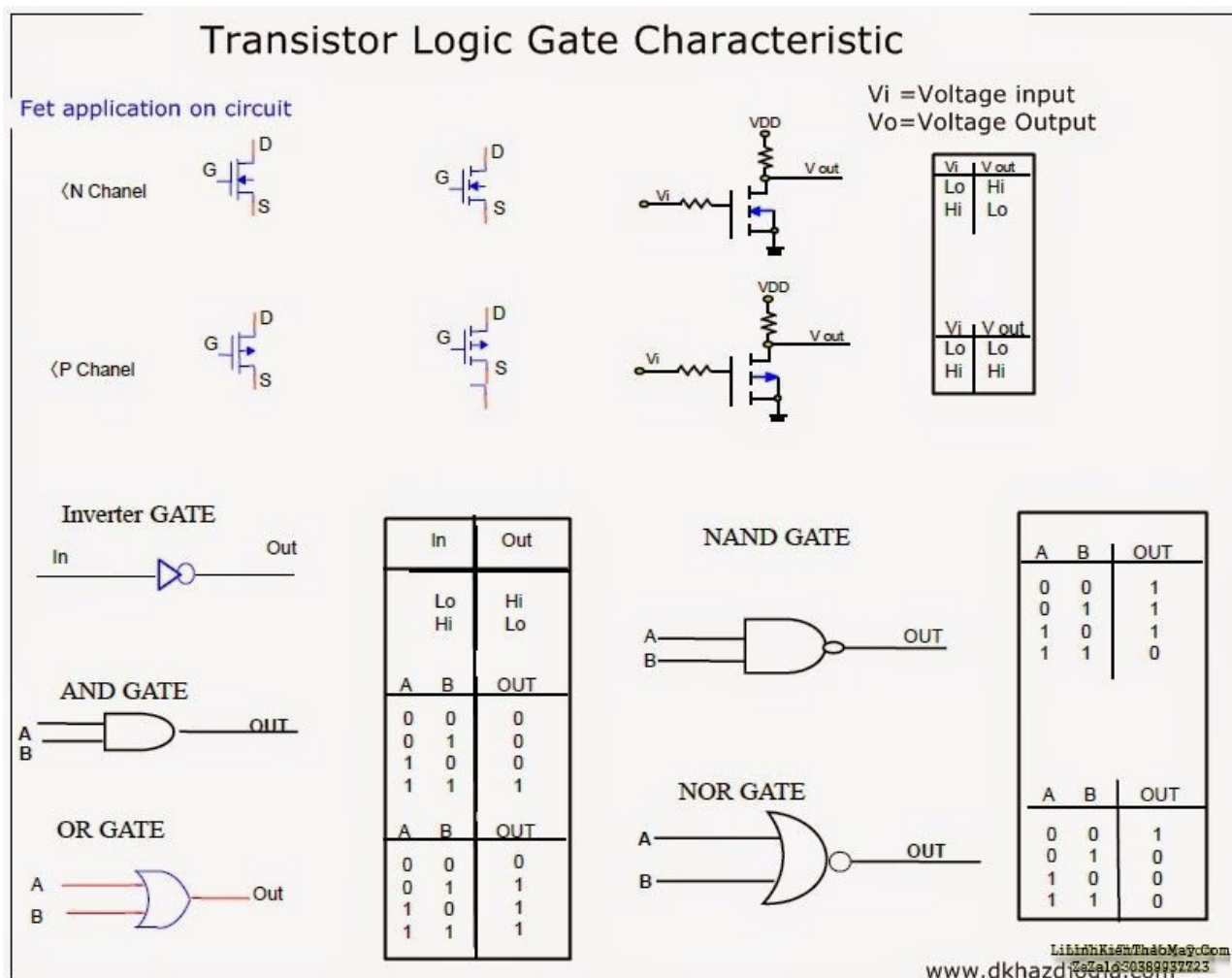
Source amplifier



Drain amplifier

Power by experiences of Adie dkhaz
LinhKienThaoMay.Com
Zalo: 0389937723

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 transistor base) if you want to drive negative volt from n-channel mosfet then negative volt drive source to drain mean for negative volt input is source and output is drain



n channel mosfet logic low (v_i) that mean mosfet not close circuit between the drain and source , v_{out} you got vdd voltage via resistance . (Hi)

when you apply $v_i = \text{Hi}$ 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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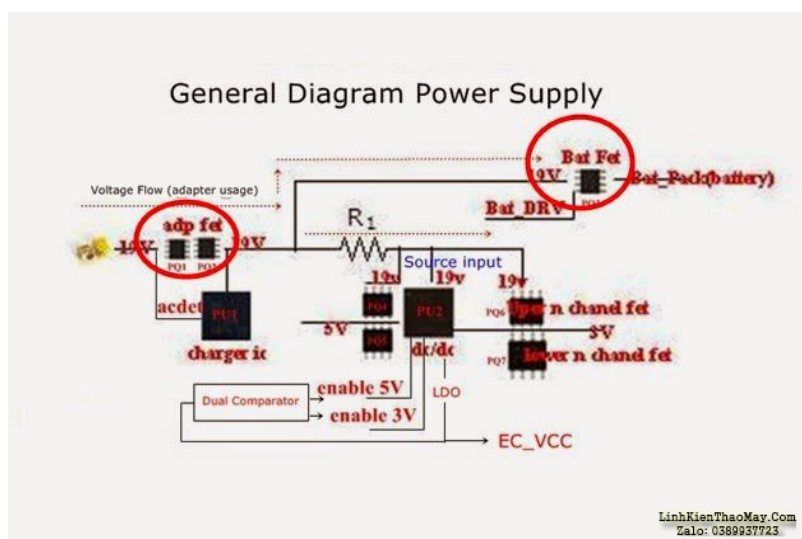


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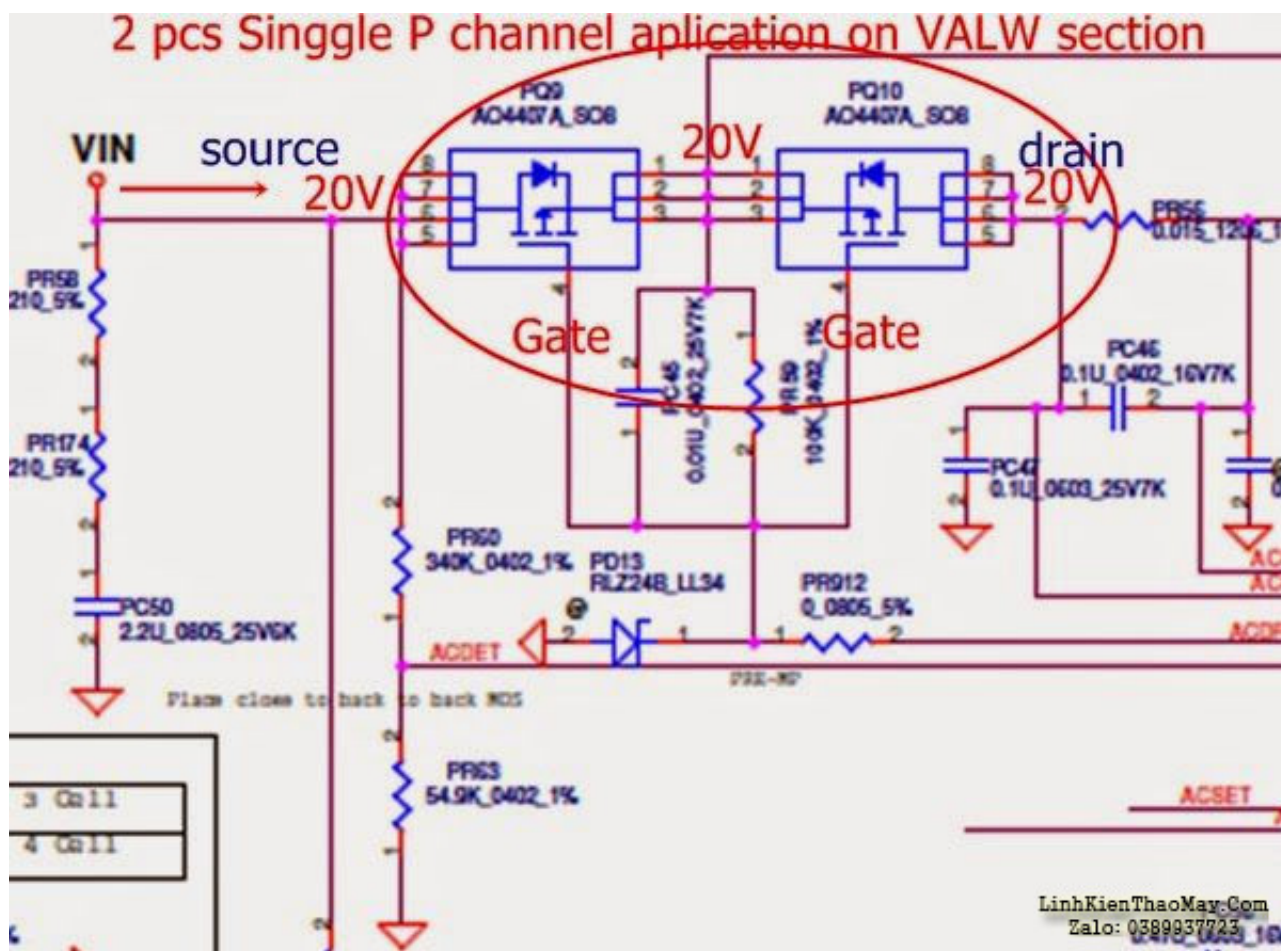
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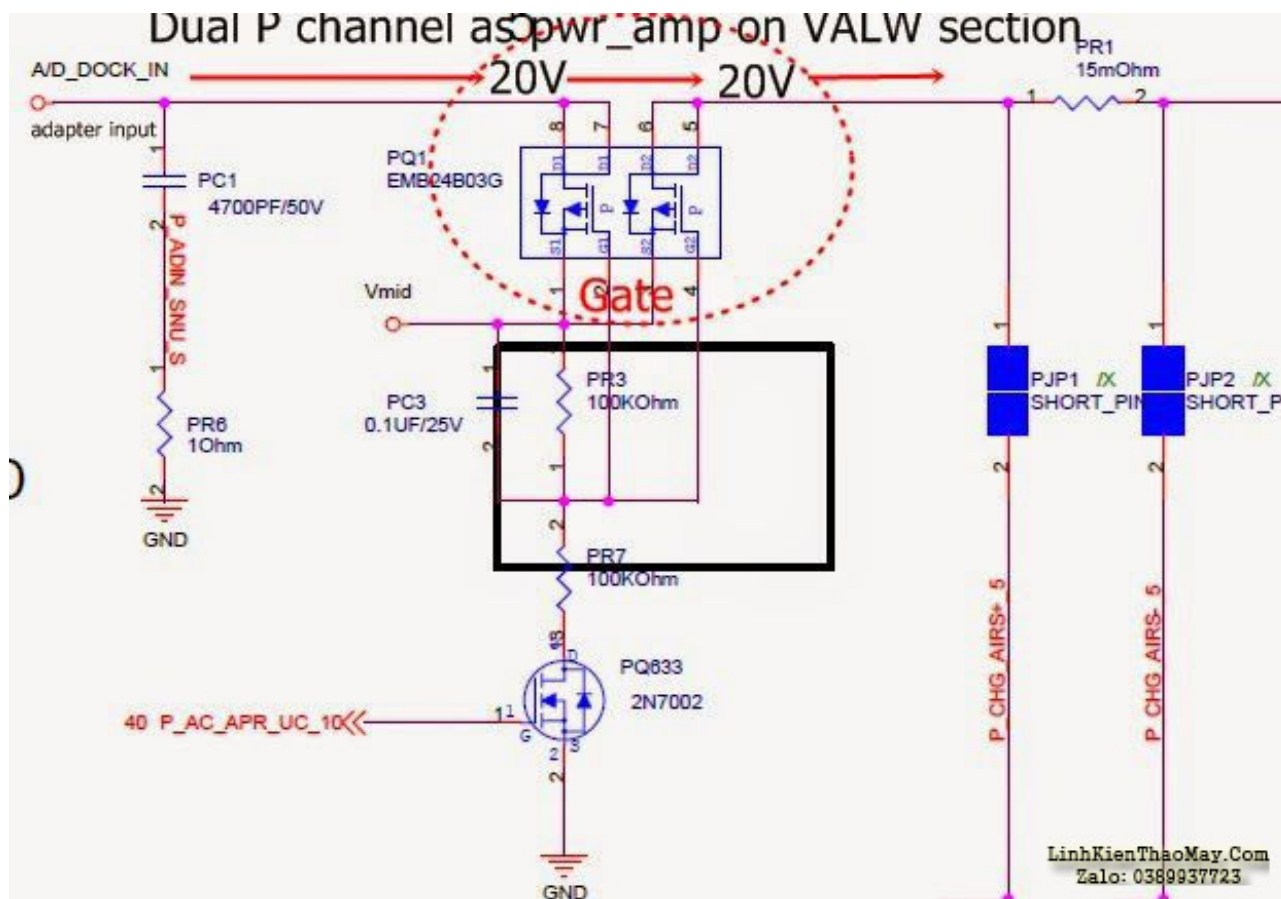
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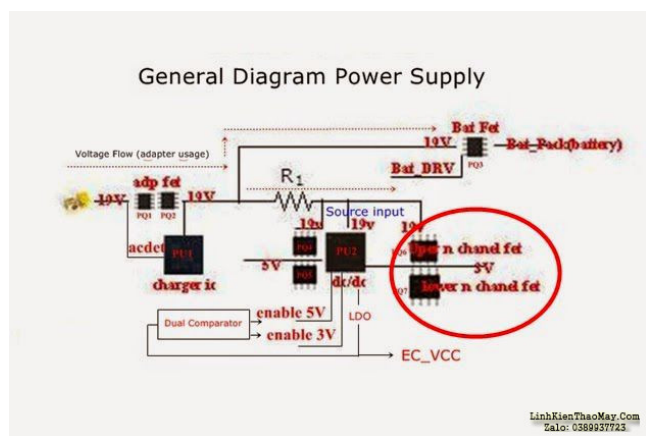
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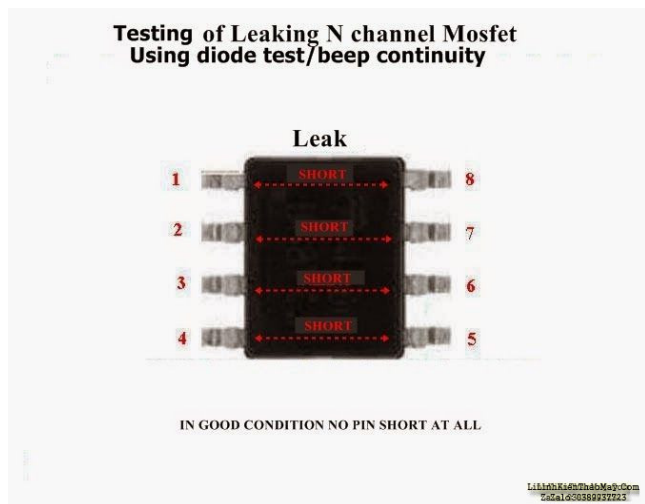
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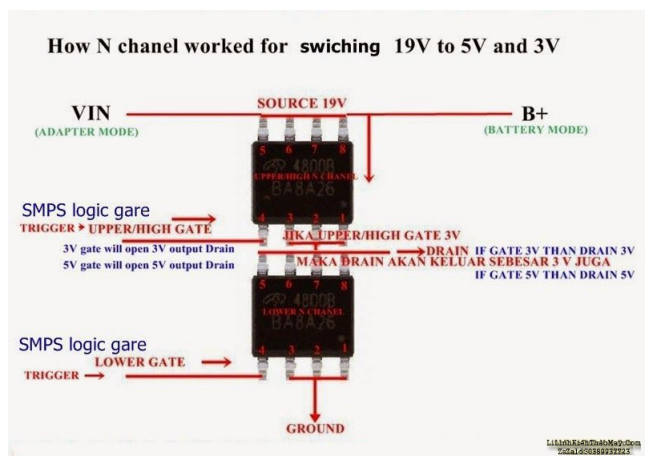
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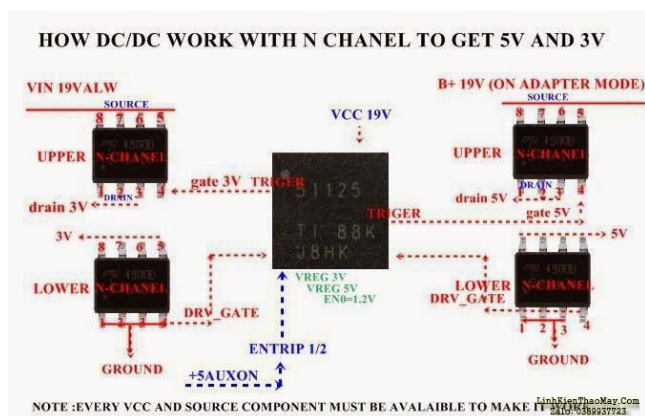
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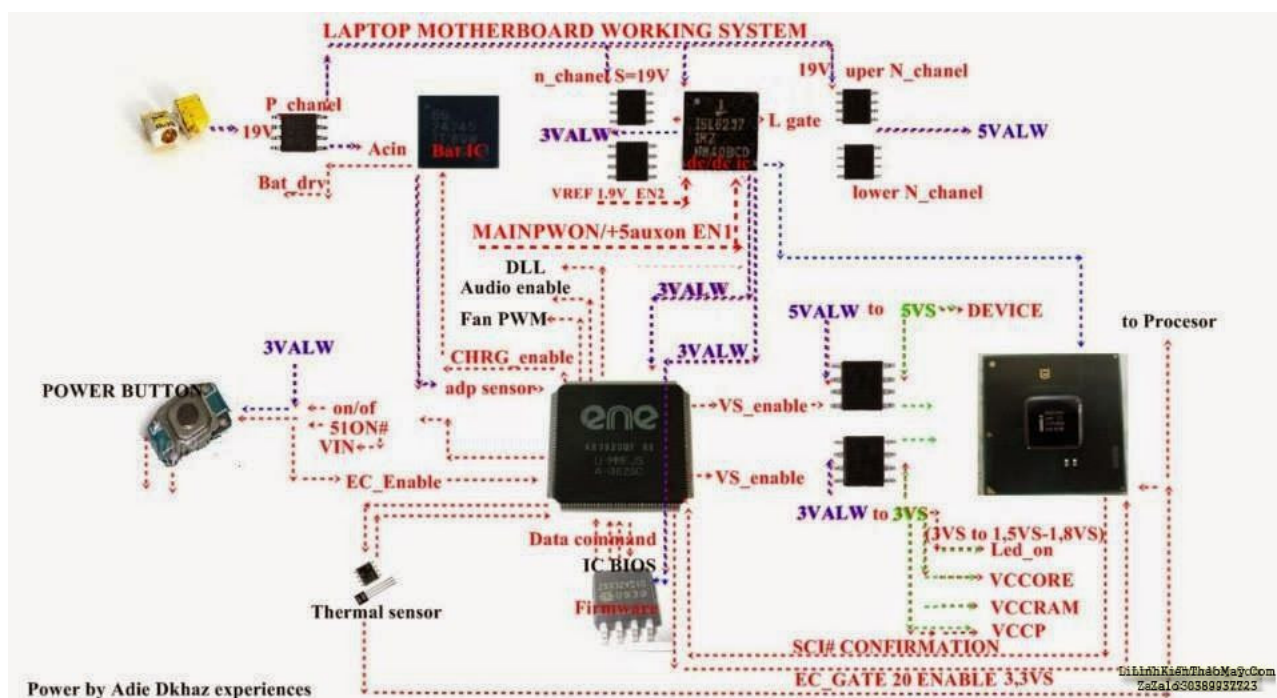
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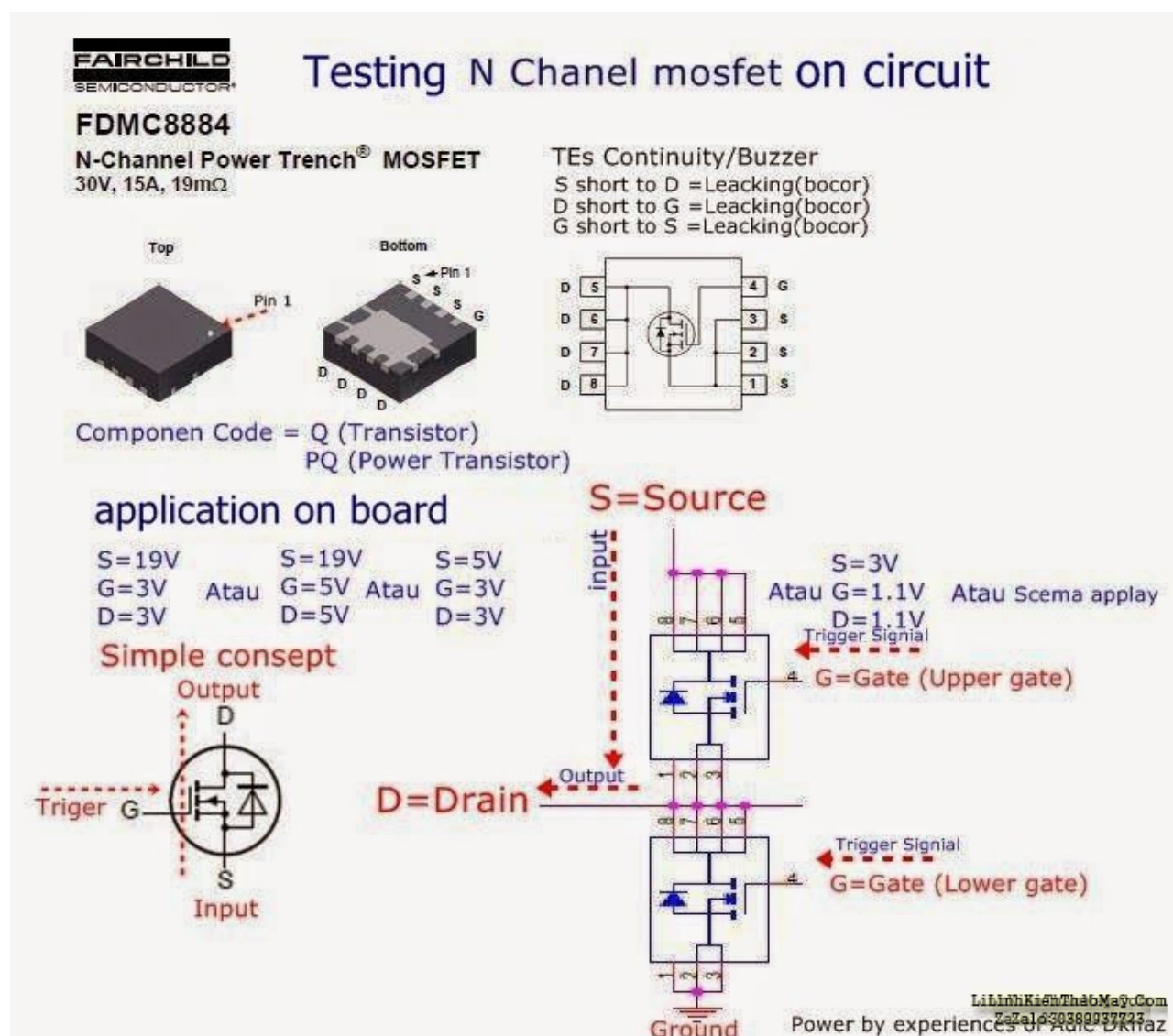
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2N7002

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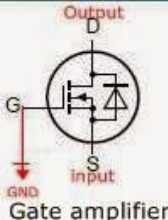
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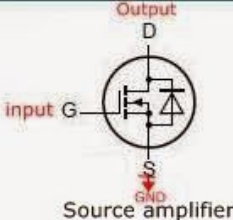
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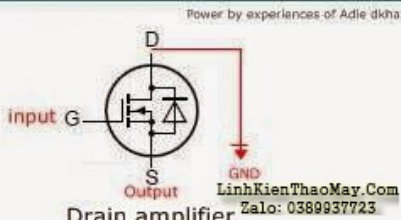
on board application



Gate amplifier



Source amplifier



Drain amplifier

TRUNG TÂM SỬ CHỮA ĐIỆN TỬ QUẢNG BÌNH

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

GIÁ RẺ

NHANH CHÓNG

LINH KIỆN CHÍNH HÃNG

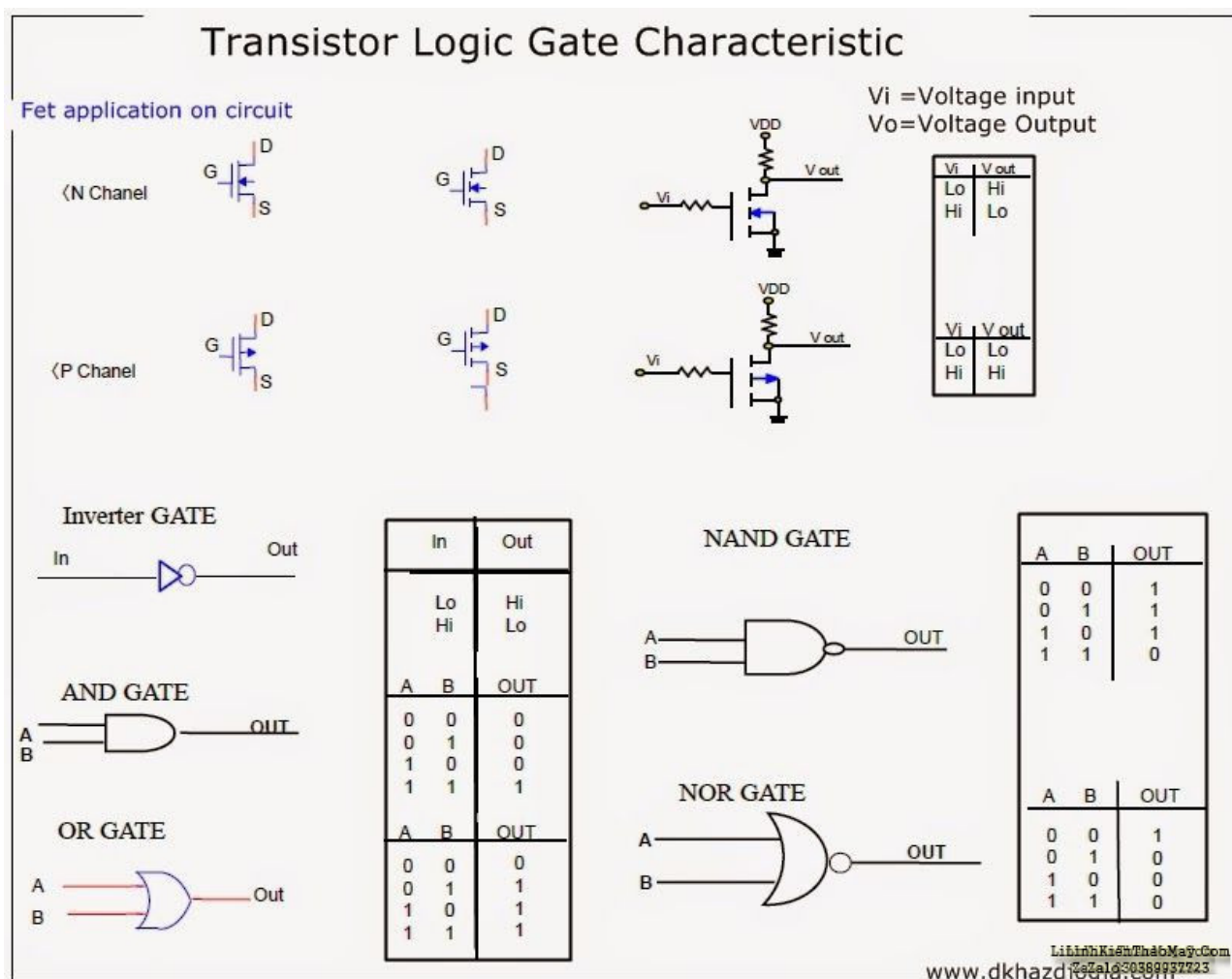


TRUNG TÂM SỬ CHỮA ĐIỆN TỬ XÔ NGUYỄN

- 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 giúp do xác định các mac nguồn trên main laptop - Em muốn do tìm và cách xác định các mạch nguồn trên main bo laptop](#)
6. [chào các bạn. - dân am thanh KENWOOD rất mong các bạn góp ý giúp mình chuyên là thế này mình mới nhận dc của khách nhờ sửa chữa cho dân am thanh kenwood chạy radio và đọc đĩa CD nhưng may khách mang tới trong tình trạng chấp nhận công suất](#)

.DIA và RADIO van hoạt động bình thường nhưng bị chấp CÔNG SUẤT nên kẹp loa vào định u nếu để lâu loa sẽ bị cháy .hien gio mình van chưa dám làm gì cả mọi kiểm tra so bộ thì thay chạy con STK4150 mình nhìn mà đã thay chuột rồi vì hàng xách tay mà lại thay con STK4150 mình chưa thay gap con này bao giờ vì vậy nhờ các bạn góp ý và giúp mình xem trên thị trường có con này không vậy?trở lại rồi liệu có không các bạn nhỉ?bạn nào đã từng làm qua bạn này xin giúp đỡ mình một tay.thank các bạn nhiều.

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 khóa chốt - Chào các ae lâu quá ko lên dd, ae cho em hỏi tivi Samsung 21z50mn slim có cao áp nhưng ko có chốt. em đo 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 khóa chốt 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 đk cho loại 4 rắc cắm k các bác