



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

*Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai*



DEPARTMENT OF MECHATRONICS

16MC302 – INDUSTRIAL ELECTRONICS & APPLICATION *III YEAR V SEM*

UNIT 1 – INTRODUCTION TO POWER ELECTRONICS

TOPIC – MOSFET

Mr. M.Anand., M.E.,(Ph.D.),

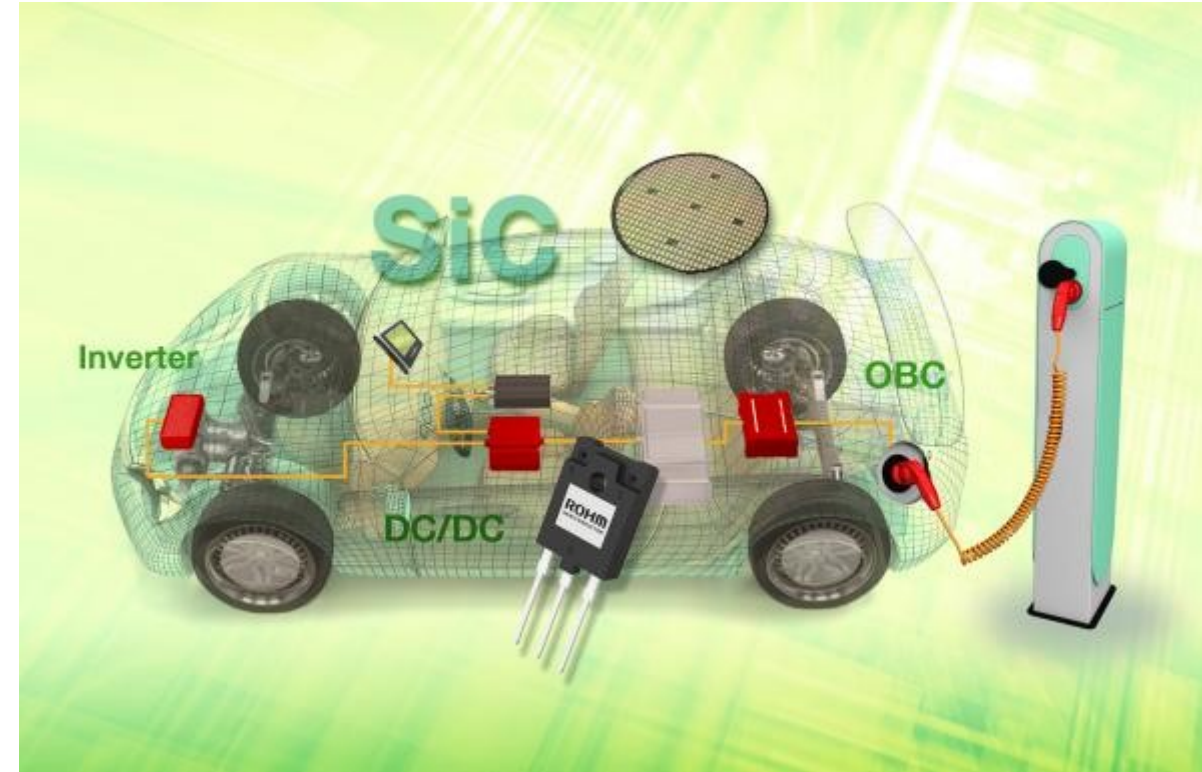
ASSISTANT PROFESSOR,

DEPARTMENT OF MECHATRONICS,

SNSCT, Coimbatore.



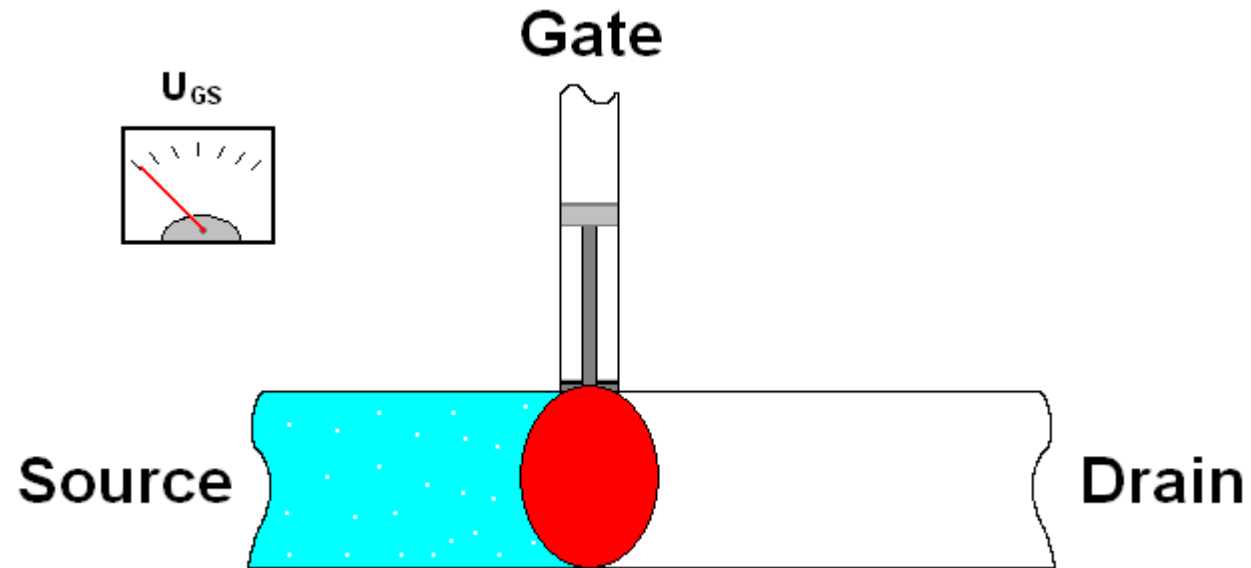
APPLICATION

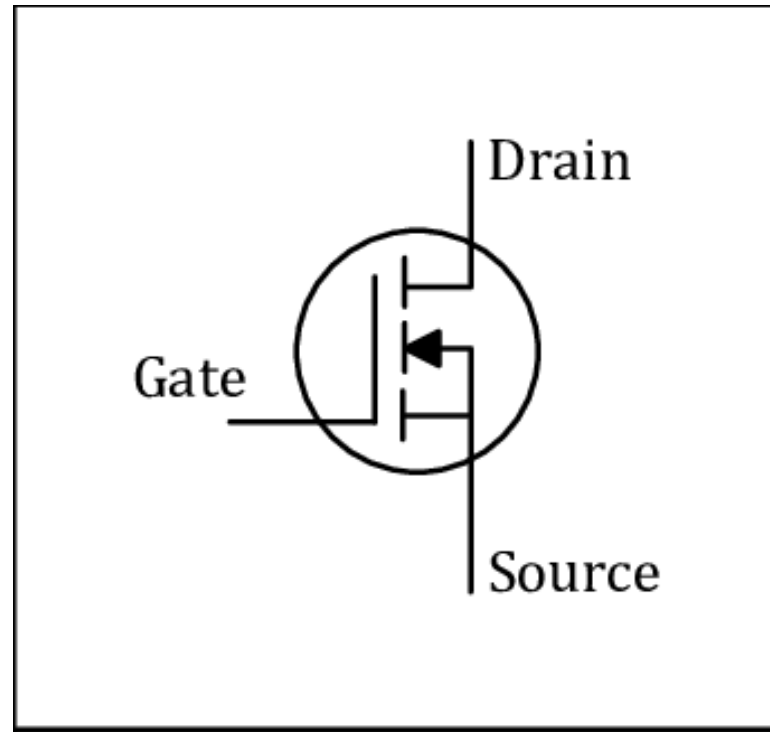
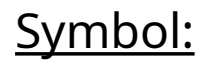




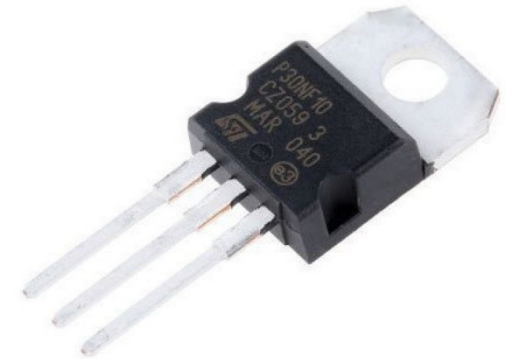
MOSFET

Power **MOSFETs** are commonly used in automotive electronics, particularly as switching devices in electronic control units, and as power converters in modern electric vehicles..



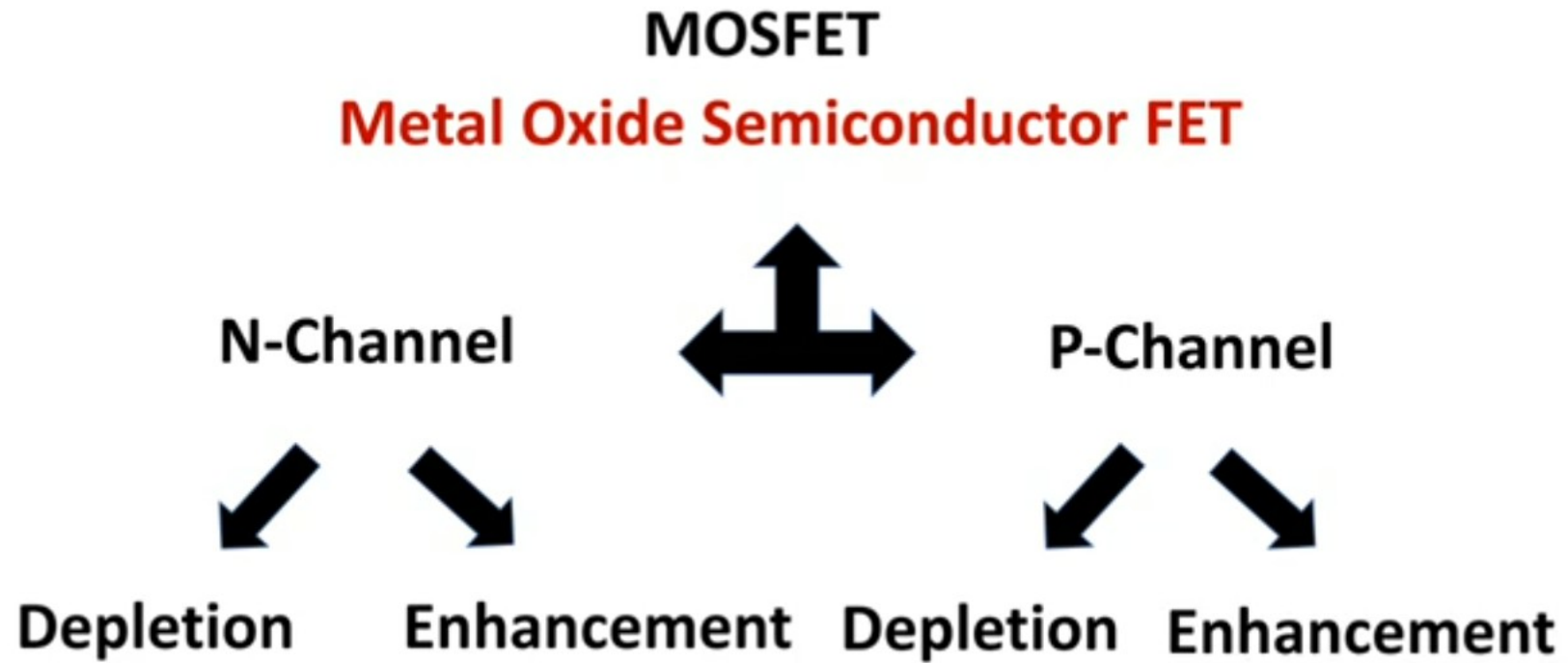


2 Junction device





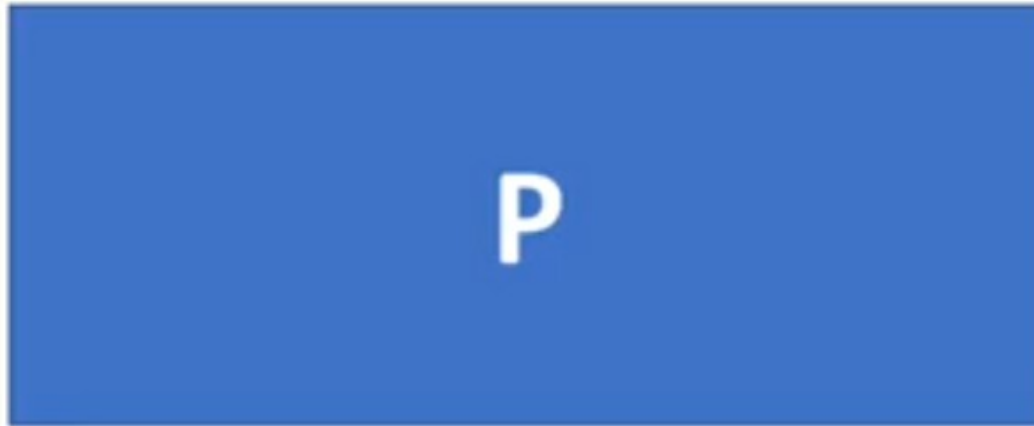
Types:





Working

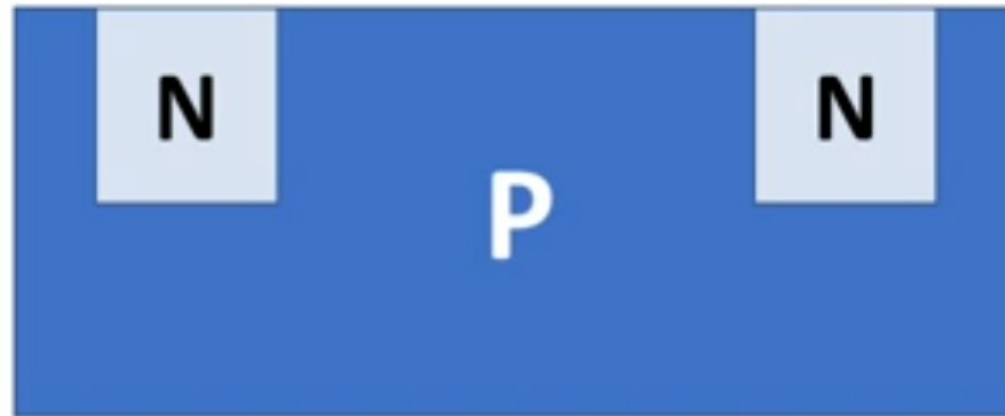
N-Channel enhancement MOSFET





Working I

N-Channel enhancement MOSFET





N-Channel enhancement MOSFET



Working

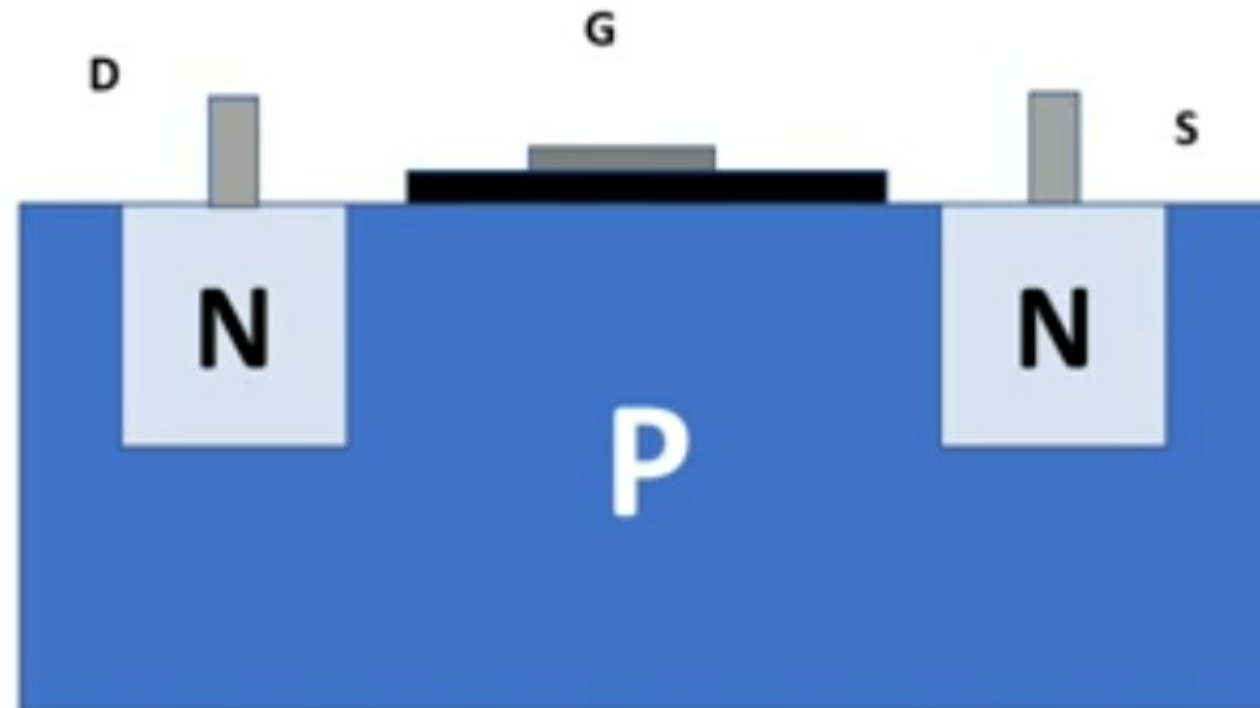




N-Channel enhancement MOSFET



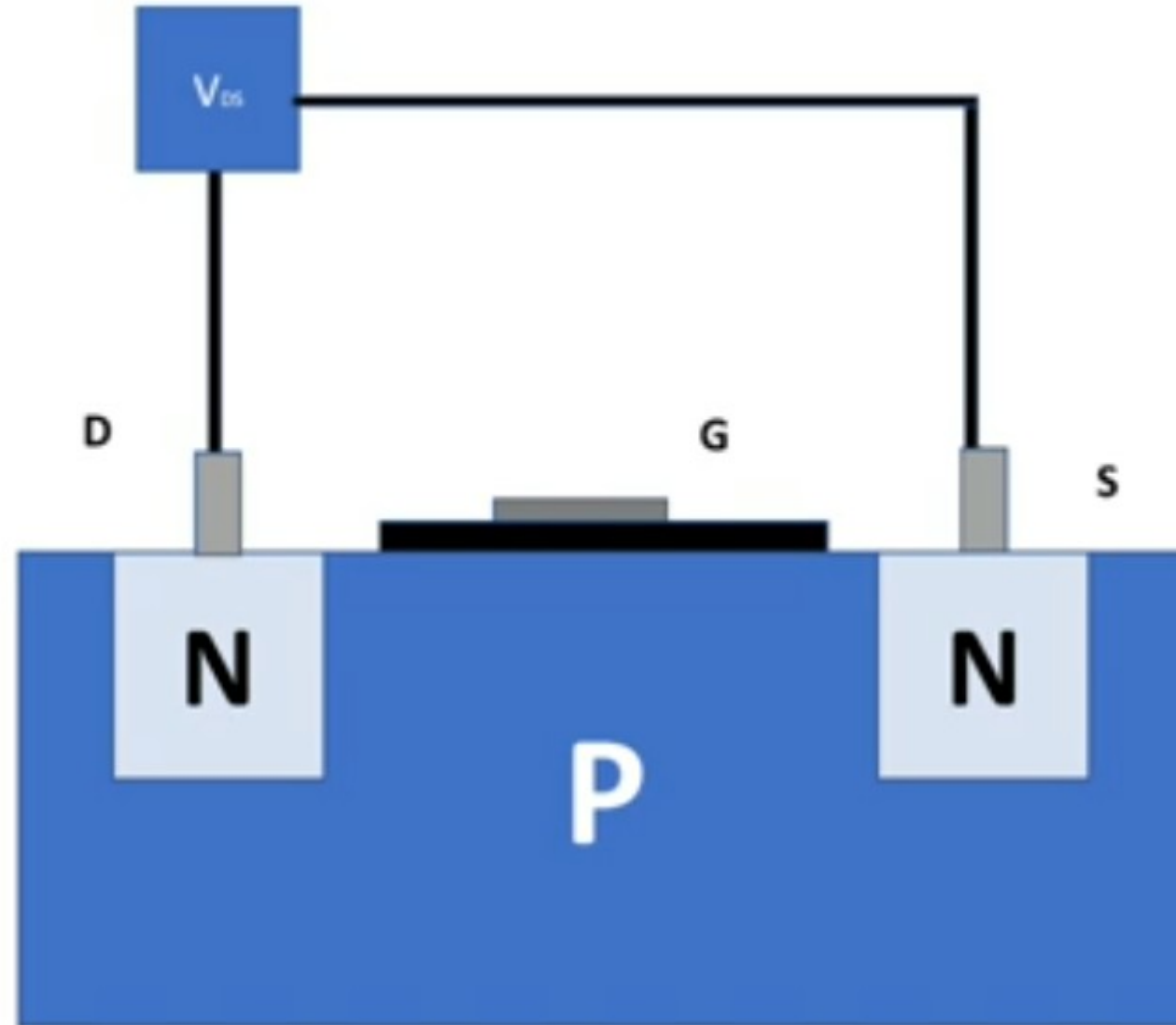
Working





N-Channel enhancement MOSFET

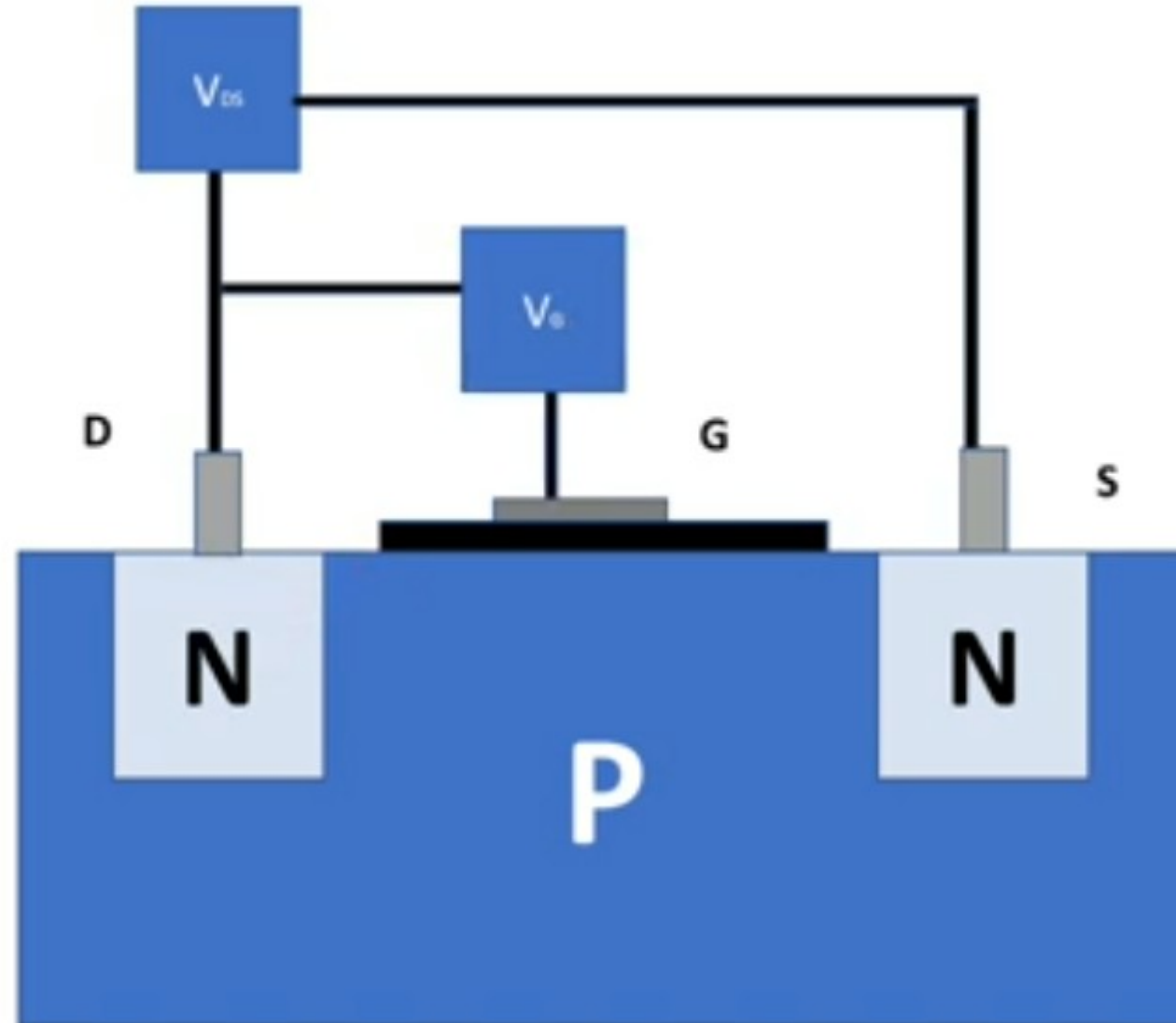
Working





N-Channel enhancement MOSFET

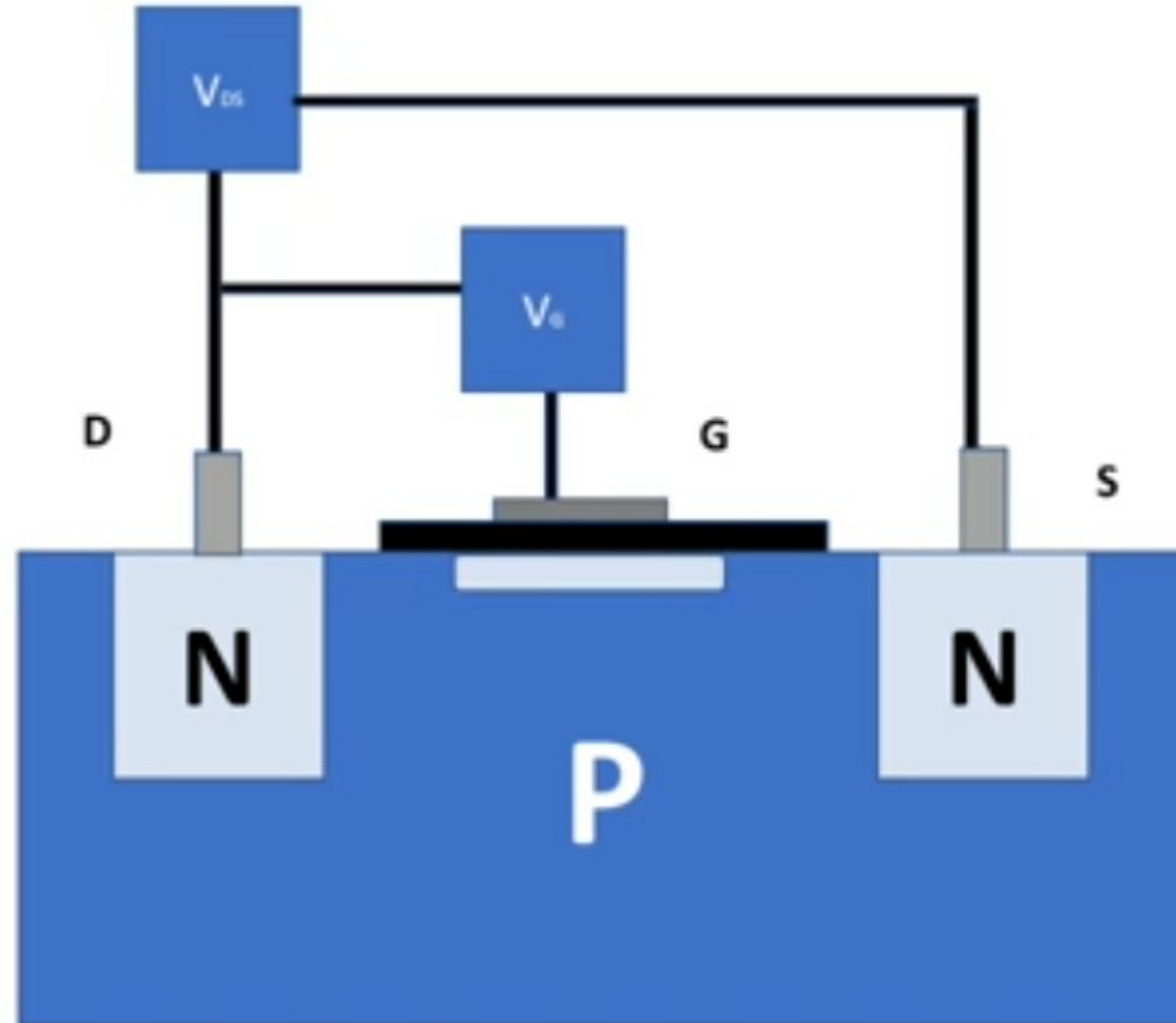
Working





N-Channel enhancement MOSFET

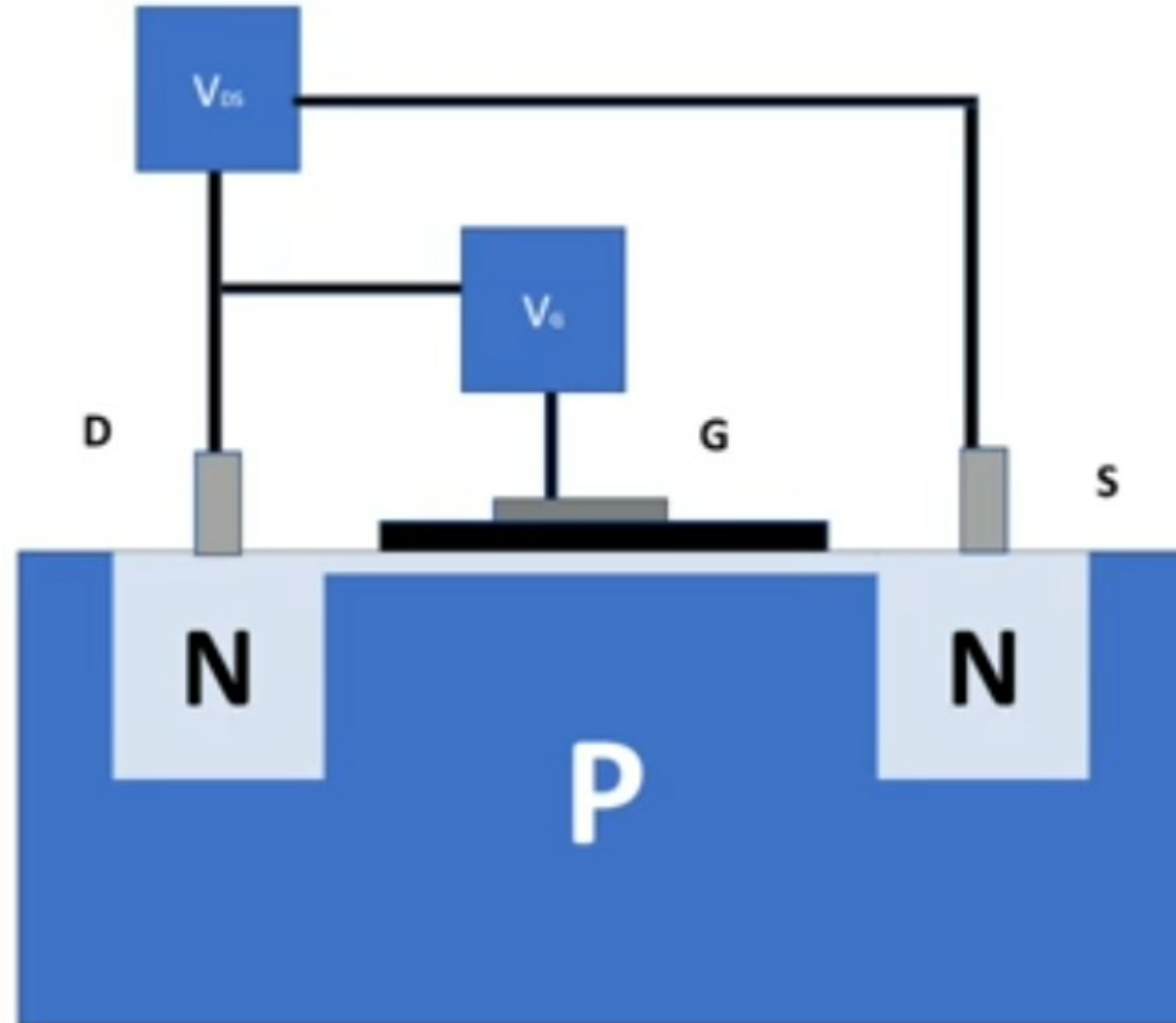
Working





N-Channel enhancement MOSFET

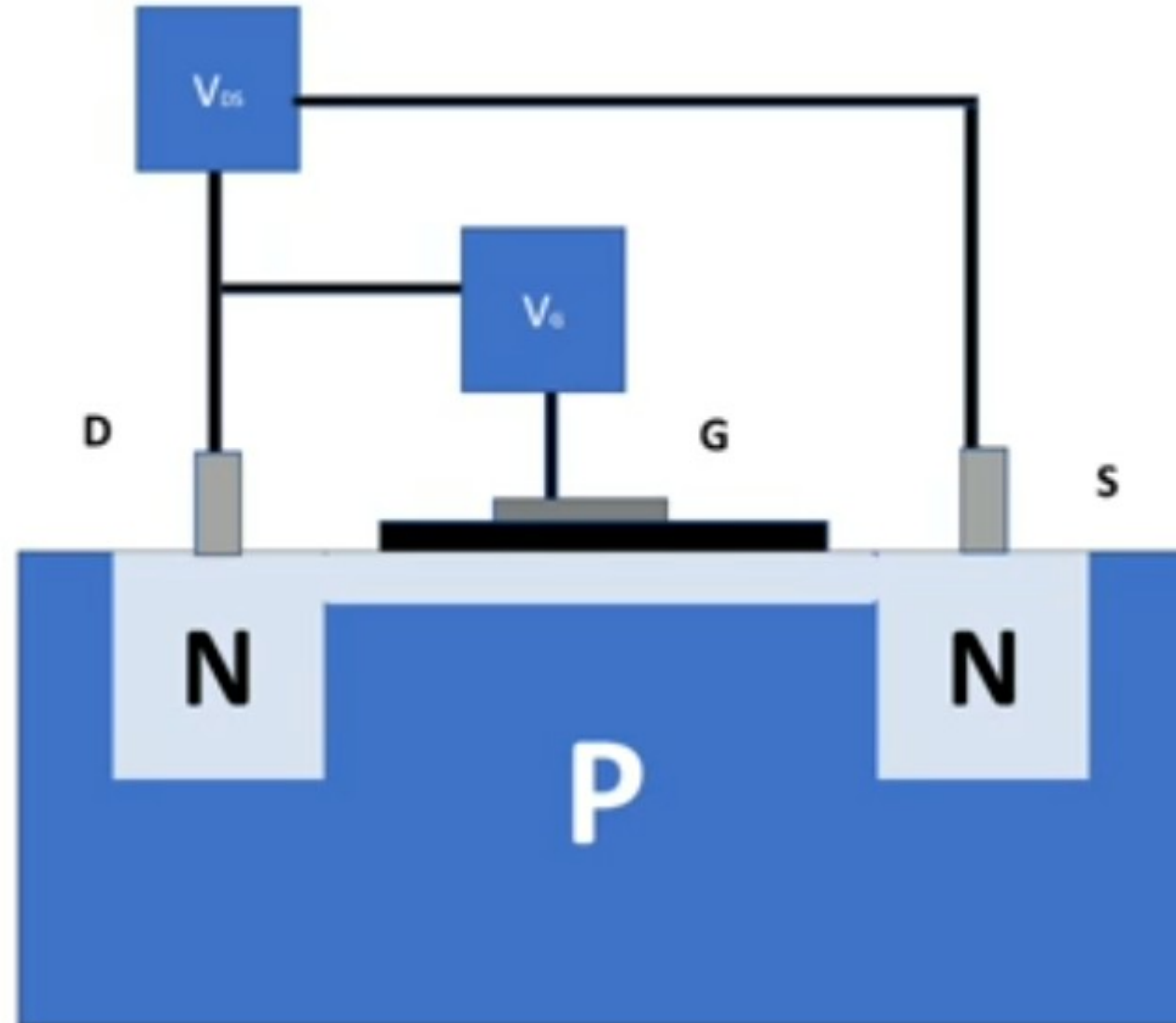
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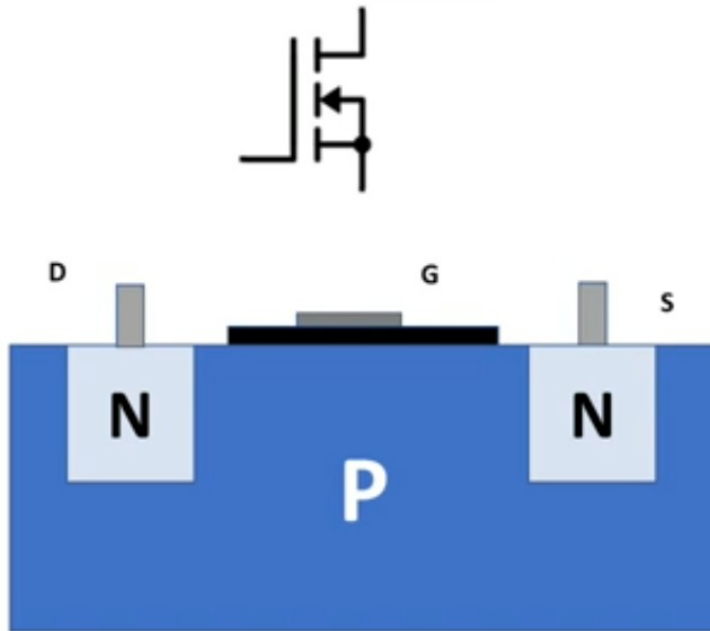
N-Channel enhancement MOSFET

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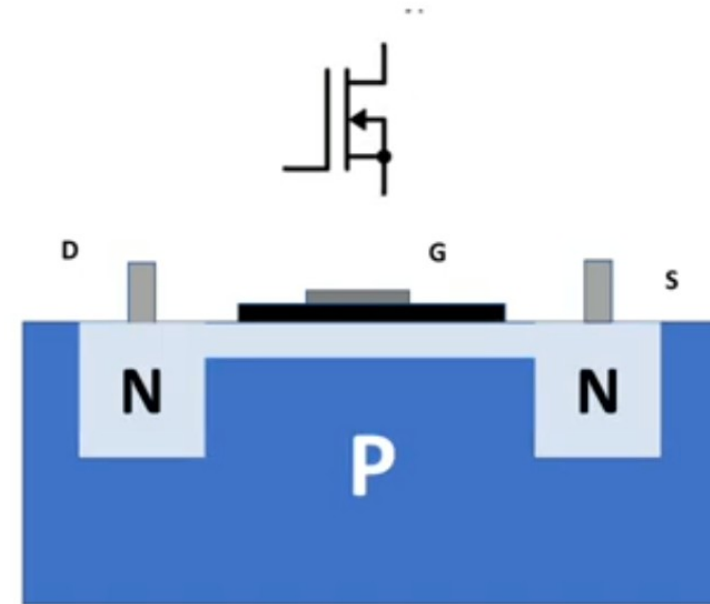




N-Channel enhancement MOSFET

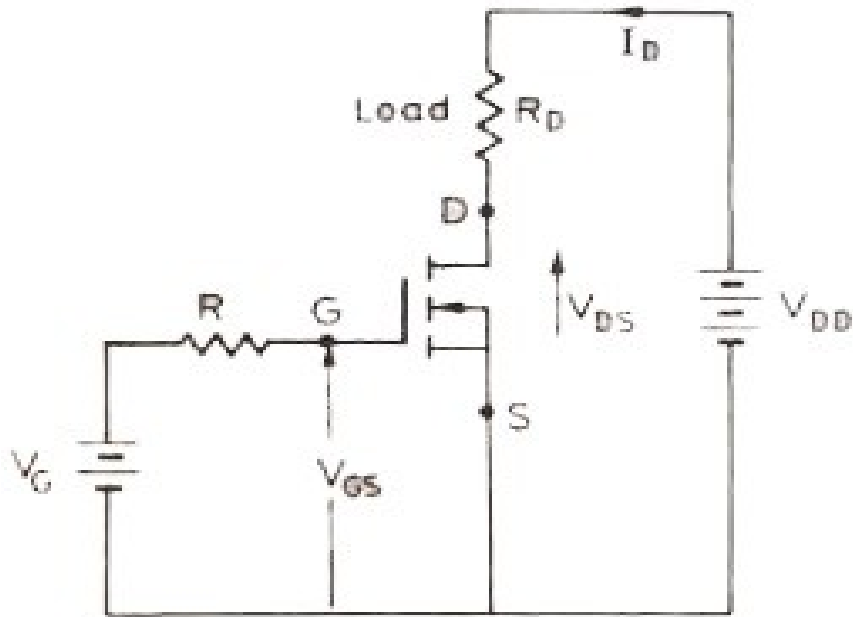


N-Channel Depletion MOSFET





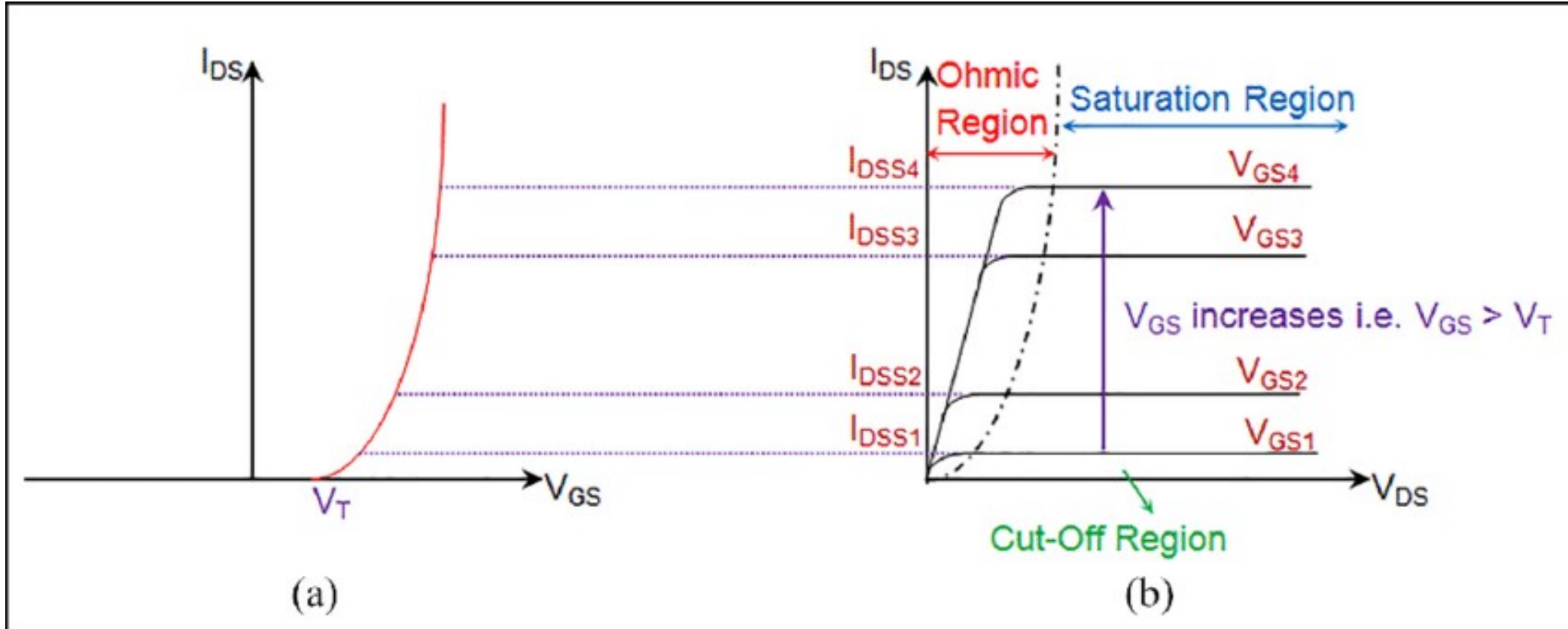
CIRCUIT DIAGRAM



<https://www.youtube.com/watch?v=p34w6ISouZY>



CHARACTERISTIC DIAGRAM





Advantages of MOSFET

- MOSFETs provide greater **efficiency** while operating at lower voltages.
- Absence of gate current results in high input impedance producing high switching **speed**.
- They operate at lower **power** and draws no current.





Two Marks Questions

1. Differentiate the characteristics of IGBT and MOSFET
2. Classify MOSFET
3. Outline the switching characteristics of MOSFET





References

1. https://www.tutorialspoint.com/basic_electronics/basic_electronics_mosfet.htm
2. https://www.electronics-tutorials.ws/transistor/tran_6.html
3. https://www.electronics-tutorials.ws/transistor/tran_6.html
4. <https://www.youtube.com/watch?v=ItOV1nkTIPU>
5. <https://www.youtube.com/watch?v=jiNJIM6PC34>

