

Automotive Electricity and Electronics

Chapter 15 – Electronic Fundamentals

Lesson Plan



CHAPTER SUMMARY:

1. Semiconductors, Summary of Semiconductors, Diodes, and Zener Diodes
2. High-Voltage Spike Protection, Diode Ratings, Light-Emitting Diodes, and Photodiodes
3. Photoresistors, Silicone-Controlled Rectifiers, Thermistors, Rectifier Bridges, and Transistors
4. Field-Effect Transistors, Phototransistors, Integrated Circuits, and Transistor Gates
5. Operational Amplifiers, Electronic Component Failure Causes, and How To Test Diodes and Transistors
6. Converters and Inverters and Electronic Discharge

OBJECTIVES:



1. Identify semiconductor components.
2. Describe how diodes and transistors work, and how to test them. Identify the causes of failure of electronic components.
3. Explain how converters and inverters are used, and precautions for working with semiconductor circuits.
4. List ways to avoid electrostatic discharge.

RESOURCES: ([All resources may be found at jameshalderman.com](http://www.jameshalderman.com))



1. Task Sheet: Electronic Fundamentals
2. Chapter PowerPoint
3. [Crossword and Word Search Puzzles \(A6\)](#)
4. [Videos: \(A6\) Electrical/Electronic Systems](#)
5. [Animations: \(A6\) Electrical/Electronic Systems](#)

ACTIVITIES:



1. Task Sheet: Electronic Fundamentals

ASSIGNMENTS:



1. Chapter crossword and word search puzzles from the website.
2. Complete end of chapter quiz from the textbook.
3. Complete multiple choice and short answer quizzes downloaded from the website.

CLASS DISCUSSION:



1. Review and group discussion chapter [Frequently Asked Questions](#) and [Tech Tips](#) sections.
2. Review and group discussion of the five (5) chapter [Review Questions](#).

NOTES AND EVALUATION:

