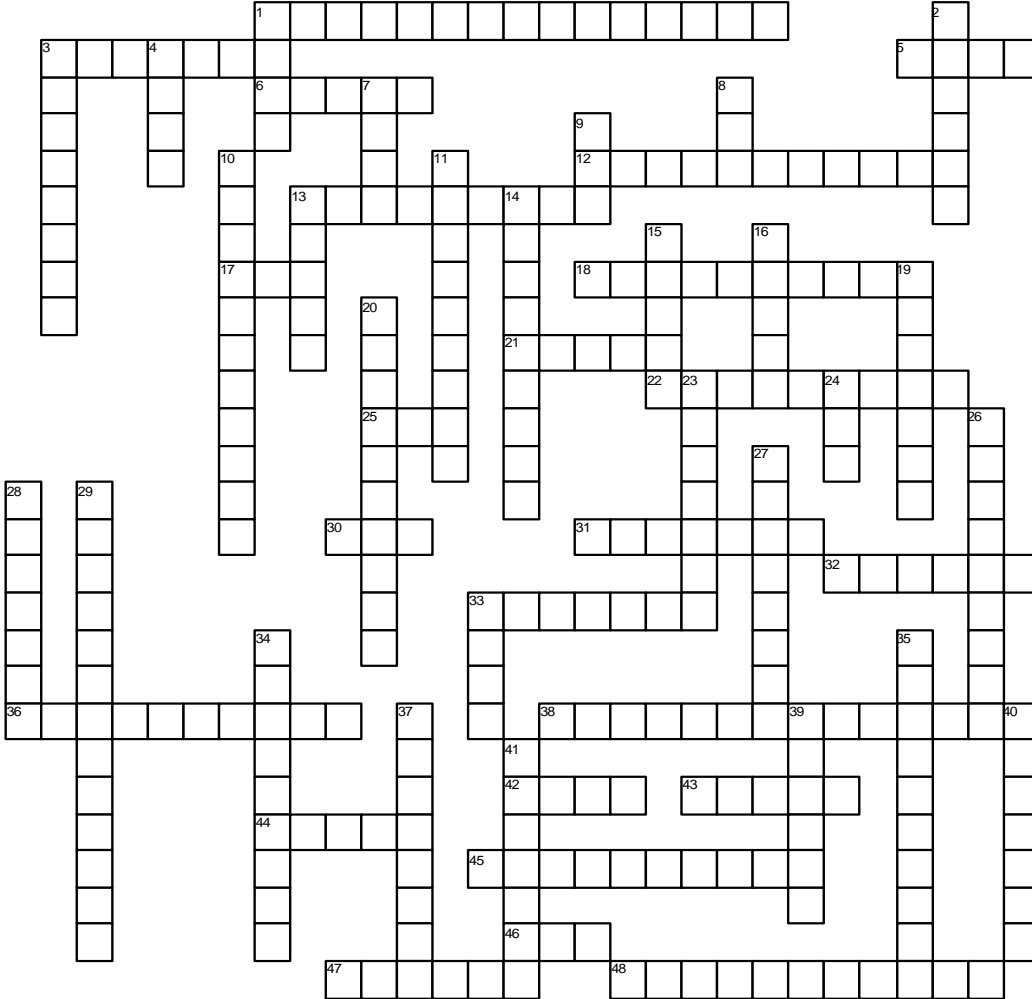


## Automotive Electrical and Engine Performance 9th Edition Chapter 10 - Electronic Fundamentals

### ACROSS

- 1 A transistor that responds to light, used in sensors.
- 3 The negative terminal of a diode where current exits the device.
- 5 \_\_\_\_\_ sink: A device used to dissipate heat from electronic components.
- 6 The positive terminal of a diode through which current flows into the device.
- 12 The ability of a system to store an electric charge, measured in farads.
- 13 One of the three terminals in a transistor where current is collected.
- 17 \_\_\_\_\_ (Pulse-Width Modulation): A method of controlling power by varying the on-time of pulses.
- 18 A temperature-sensitive resistor used in circuits to measure or control temperature.
- 21 \_\_\_\_\_ protection resistor: A resistor used to protect circuits from voltage spikes.
- 22 \_\_\_\_\_ bridge: A group of diodes used to convert AC to DC voltage.
- 25 \_\_\_\_\_ transistor: A bipolar transistor with one P-type layer between two N-type layers.
- 30 The sudden release of static electricity that can damage electronic components.
- 31 Particles of light that generate energy in photoelectric devices.
- 32 (Metal-Oxide Semiconductor Field-Effect Transistor) A type of FET used in power and switching applications.
- 33 \_\_\_\_\_ transistor: A semiconductor device with three



www.CrosswordWeaver.com

- 34 \_\_\_\_\_ layers (NPN or PNP) used to amplify or switch electrical signals.
- 36 An insulating material between the plates of a capacitor that increases its capacitance.
- 38 Materials with electrical properties between conductors and insulators.
- 42 \_\_\_\_\_ reverse voltage (PRV): Similar to PIV, indicating the highest voltage a diode can handle in reverse bias.
- 43 \_\_\_\_\_ material: Semiconductor material with an excess of positive holes.

- 44 \_\_\_\_\_ material: Semiconductor material with an excess of electrons.
- 45 \_\_\_\_\_ pair: Two transistors connected together to amplify a small current into a larger one.
- 46 \_\_\_\_\_ transistor: A bipolar transistor with one N-type layer between two P-type layers.
- 47 The unit of measurement for capacitance.
- 48 Diodes that generate current when exposed to light.

### DOWN

- 1 \_\_\_\_\_ inverse

- 2 \_\_\_\_\_ jar: A historical capacitor used to store electric charge.
- 3 \_\_\_\_\_ diode: A diode used to protect circuits by limiting the voltage to a specific level.
- 4 \_\_\_\_\_ theory: A concept explaining the movement of electron holes in semiconductors as a form of electrical conduction.
- 7 inline pins (DIP): A type of integrated circuit package with two parallel rows of pins.
- 8 \_\_\_\_\_ (Negative

- Temperature Coefficient): The maximum reverse voltage a diode can withstand without breakdown.
- 9 \_\_\_\_\_ (Silicon-Controlled Rectifier): A type of semiconductor used in power control applications.
- 10 \_\_\_\_\_ diode: A diode used to eliminate electrical noise.
- 11 \_\_\_\_\_ diode: A diode used to protect circuits from voltage spikes caused by inductive loads.
- 13 A safety feature, usually an additional brake

- light mounted at the rear center of a vehicle.
- 14 \_\_\_\_\_ voltage: The minimum voltage required for a semiconductor device to conduct.
- 15 \_\_\_\_\_ diode: A diode designed to allow current to flow in reverse when a specific breakdown voltage is reached.
- 16 \_\_\_\_\_-emitting diode: A diode that emits light when current flows through it.
- 19 \_\_\_\_\_ bias: The condition in which a diode blocks current, with the anode negative relative to the

- cathode.
- 20 A semiconductor device used to amplify or switch electrical signals.
- 23 The terminal of a transistor from which current flows out.
- 24 A type of transistor that uses an electric field to control current flow.
- 26 Another term for a capacitor, a device that stores electrical energy.
- 27 The region where P-type and N-type semiconductor materials meet in a diode or transistor.
- 28 \_\_\_\_\_ bias: The condition in which a diode conducts current, with the anode positive relative to the cathode.
- 29 A resistor whose resistance changes with light exposure.
- 33 The terminal of a transistor that controls the flow of current between the collector and the emitter.
- 34 A semiconductor material used in early transistors and diodes.
- 35 \_\_\_\_\_ circuit: A set of electronic circuits combined into a single chip.
- 37 A device that converts direct current (DC) to alternating current (AC).
- 39 The process of adding impurities to semiconductor materials to alter their electrical properties.
- 40 A common semiconductor material used in most modern electronic devices.
- 41 (Operational Amplifiers) High-gain voltage amplifiers used in electronic circuits.