



# Basic Modular Circuits

EM-3535

## Included Items

Item	Quantity	Item	Quantity
Battery Module	2	Capacitor Module	1
Corner Module	4	Light Bulb Module	2
Switch Module, SPDT	1	Switch Module, SPST	1
Spring Module	1	Straight Module	4
Tee Module	2	33 ohm Resistor Module	1
100 ohm Resistor Module	1	Battery, AA	2
Jumper Clip	30	1000 ohm Resistor	2
330 ohm Resistor	2	Diode	1
100 microfarad Capacitor	1	330 microfarad Capacitor	1

## Recommended Items

Wireless Current Sensor PS-3212 or Current Sensor Module EM-3534, Wireless Voltage Sensor PS-3211, Shrouded Alligator Test Leads PS-3544, PASCO Software (see [www.pasco.com](http://www.pasco.com)).

## Introduction

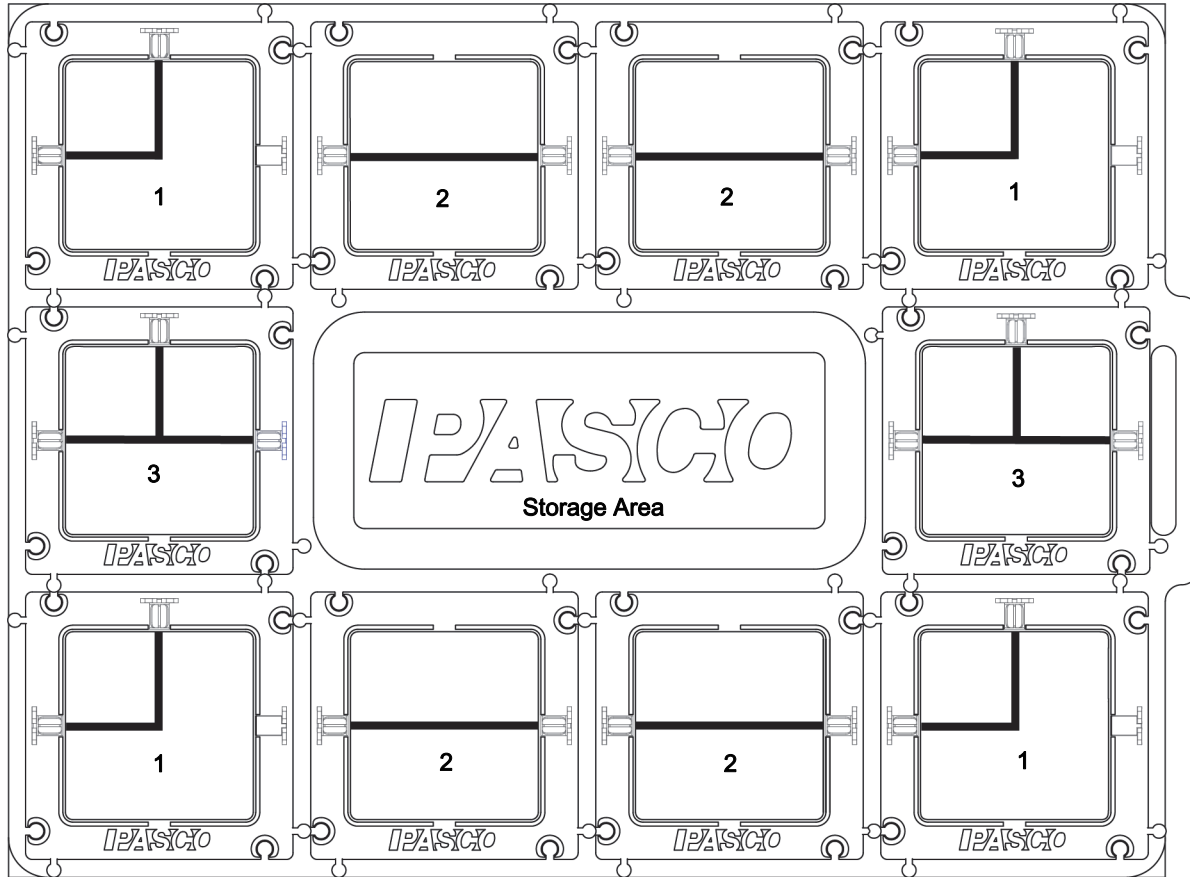
The PASCO Basic Modular Circuits system comes in a Gratnells™ plastic storage case with two layers. Each layer has a molded plastic piece for storing the components. Ten modules fit on each layer, and loose components such as the Batteries, Jumper Clips, Resistors, Capacitors and Diode fit in trays in the middle of each layer. The plastic layers are attached to specially designed pieces of foam that include cut-out areas to fit over the taller modules. Taller modules should be stored on the bottom layer. This manual shows how to store the modules on each of the layers.

## Experiments

See the **Basic Modular Circuits** page at the PASCO Web site ([www.pasco.com](http://www.pasco.com)) for information about experiments designed for the EM-3535. The Web page includes a video that is a brief introduction to the Modular Circuits.

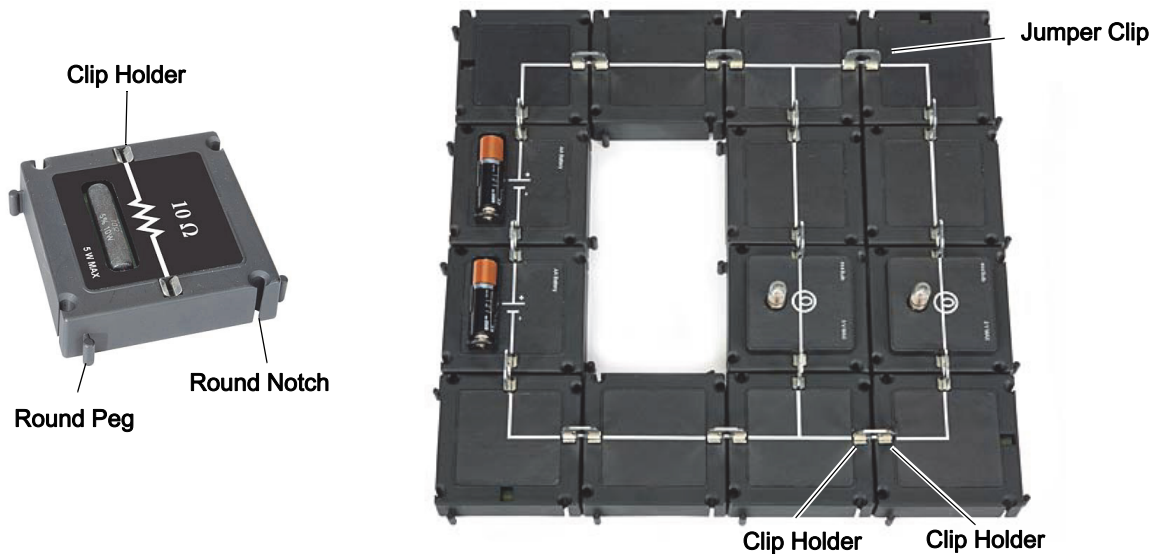
Note that the 0.33 farad Capacitor Module is designed for qualitative demonstrations with the Light Bulb Modules and is not the best choice for a resistor-capacitor (RC) circuit experiment. Try the 100 microfarad ( $\mu\text{F}$ ) or 330  $\mu\text{F}$  capacitors instead.

# Storage: Top Layer

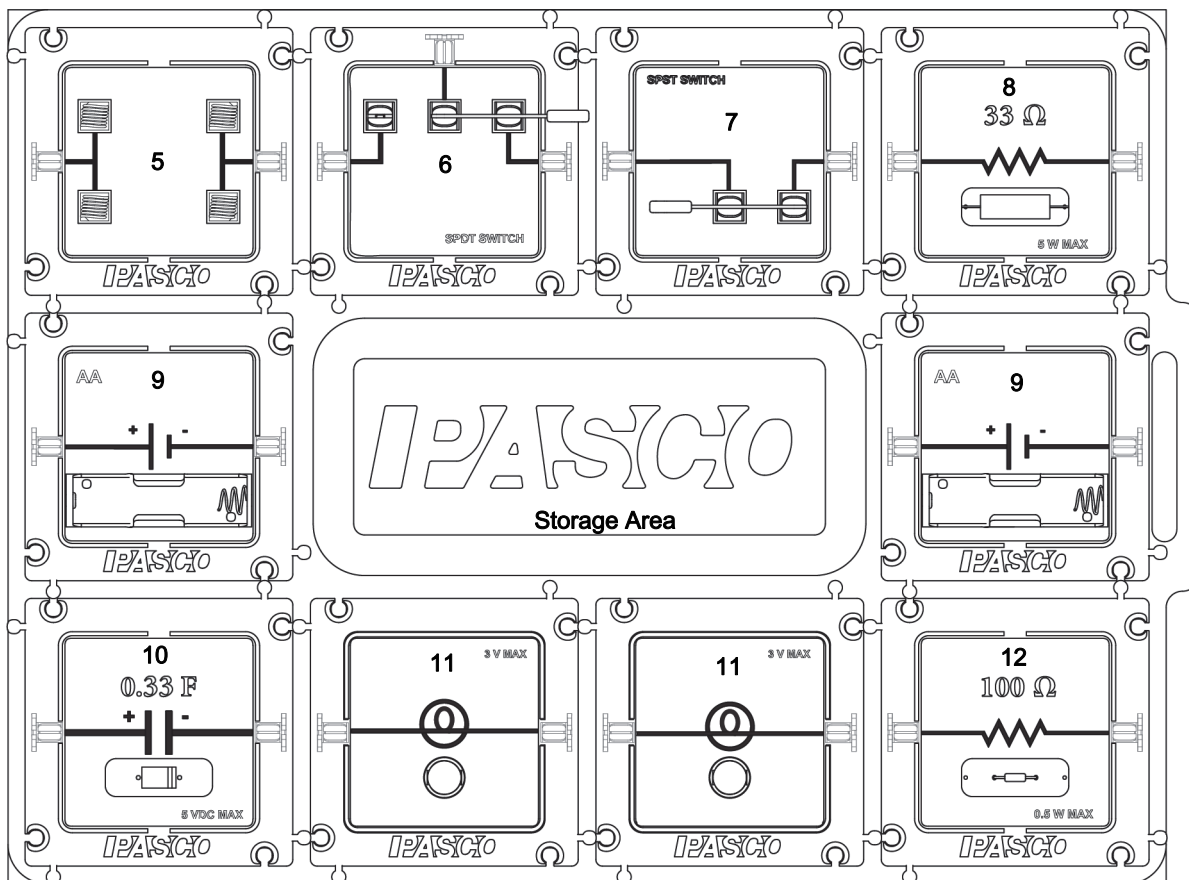


Item	ID	Item	Num	ID	Num
Corner Module	1	Straight Module	2	Tee Module	3

Put modules together by slipping the round pegs on the edges of one module into the round notches on the edge of the next module. Each modules has two or three clip holders. Connect modules electrically by pushing a jumper clip down into adjacent clip holders.



## Storage: Bottom Layer (for taller modules)



Item	ID	Item	ID	Item	ID
Spring Module	5	SPDT Switch Module	6	SPST Switch Module	7
33 $\Omega$ Resistor Module	8	Battery Holder Module	9	0.33 F Capacitor Module	10
Light Bulb Module	11	100 $\Omega$ Resistor Module	12		

### Sensors

Using a PASCO sensor with the modular circuits requires a sensor, interface and software.

### PASCO Capstone Software or SPARKvue Software

PASCO Capstone Software is best for Windows or Mac in physics and engineering laboratories. The site license allows students to use it at home. Use SPARKvue if you are on a mobile platform: iOS, Android, or Chrome.

### Replacement Parts

Contact PASCO Technical Support regarding possible replacement parts.

# Technical Support

For assistance with any PASCO product, contact PASCO at:

Address: PASCO scientific  
10101 Foothills Blvd.  
Roseville, CA 95747-7100

Phone: 916-462-8384 (worldwide)  
800-772-8700 (U.S.)

Web: [www.pasco.com](http://www.pasco.com)

Email: [support@pasco.com](mailto:support@pasco.com)

## Limited Warranty

For a description of the product warranty, see the PASCO catalog.

## Copyright

This PASCO scientific *Instruction Manual* is copyrighted with all rights reserved. Permission is granted to non-profit educational institutions for reproduction of any part of this manual, providing the reproductions are used only in their laboratories and classrooms, and are not sold for profit. Reproduction under any other circumstances, without the written consent of PASCO scientific, is prohibited.

## Trademarks

PASCO and PASCO scientific are trademarks or registered trademarks of PASCO scientific, in the United States and/or in other countries. All other brands, products, or service names are or may be trademarks or service marks of, and are used to identify, products or services of, their respective owners. For more information visit [www.pasco.com/legal](http://www.pasco.com/legal).

## Product End of Life Disposal Instructions:

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle/disposal service, or the place where you purchased the product.

The European Union WEEE (Waste Electronic and Electrical Equipment) symbol (to the right) and on the product or its packaging indicates that this product must not be disposed of in a standard waste container.



## Battery Disposal Instructions:

Batteries contain chemicals that, if released, may affect the environment and human health. Batteries should be collected separately for recycling, and recycled at a local hazardous material disposal location adhering to your country and local government regulations. To find out where you can drop off your waste battery for recycling, please contact your local waste disposal service, or the product representative.

The Lithium Polymer (Li-Poly) rechargeable battery used in this product is marked with the International symbols to indicate the need for the separate collection and recycling of batteries



Li-Poly

