Applications:
- Upgrade the existing ignition system of:
- Cars, motorcycles, mowers, outboards, …
- Reduces breaker point wear
- Provides a cleaner spark
- Your own unique application

Specifications:
- For 12V negative ground systems
- Max. ignition current: 4A
- Max. switching speed: 500KHz
- Adaptable for 6V negative ground systems
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1. Assembly  (Skipping this can lead to troubles !)
Ok, so we have your attention. These hints will help you to make this project successful. Read them carefully.

1.1 Make sure you have the right tools:

- A good quality soldering iron (25-40W) with a small tip.
- Wipe it often on a wet sponge or cloth, to keep it clean; then apply solder to the tip, to give it a wet look. This is called ‘thinning’ and will protect the tip, and enables you to make good connections. When solder rolls off the tip, it needs cleaning.
- Thin raisin-core solder. Do not use any flux or grease.
- A diagonal cutter to trim excess wires. To avoid injury when cutting excess leads, hold the lead so they cannot fly towards the eyes.
- Needle nose pliers, for bending leads, or to hold components in place.
- Small blade and phillips screwdrivers. A basic range is fine.

For some projects, a basic multi-meter is required, or might be handy

1.2 Assembly Hints :

☑ Make sure the skill level matches your experience, to avoid disappointments.
☑ Follow the instructions carefully. Read and understand the entire step before you perform each operation.
☑ Perform the assembly in the correct order as stated in this manual
☑ Position all parts on the PCB (Printed Circuit Board) as shown on the drawings.
☑ Values on the circuit diagram are subject to changes.
☑ Values in this assembly guide are correct*
☑ Use the check-boxes to mark your progress.
☑ Please read the included information on safety and customer service

* Typographical inaccuracies excluded. Always look for possible last minute manual updates, indicated as ‘NOTE’ on a separate leaflet.

1.3 Soldering Hints :

Mount the component against the PCB surface and carefully solder the leads
Make sure the solder joints are cone-shaped and shiny
Trim excess leads as close as possible to the solder joint
AXIAL COMPONENTS ARE TAPE IN THE CORRECT MOUNTING SEQUENCE!

REMOVE THEM FROM THE TAPE ONE AT A TIME!

1. RESISTORS

- R1: 330 * (3 - 3 - 1 - B)
- R2: 330 * (3 - 3 - 1 - B)
- R3: 150 (1 - 5 - 1 - B)
- R4: 100 (1 - 0 - 1 - B)
- R5: 150 * (1 - 5 - 1 - B)
- R6: 150 * (1 - 5 - 1 - B)
- R7: 150 * (1 - 5 - 1 - B)

2. DIODES (Watch the polarity)

- D1: 1N4007
- D2: 1N4007
- D3: 1N4007
- D4: 1N4007

3. ZENER DIODES (Watch the polarity)

- ZD1: 150V
- ZD2: 150V

4. CAPACITOR

- C1: 0.22µF/630V (.22; 224)

5. TRANSISTORS

- T1: 2N2219A, BSX45 or eq.
6. POWER TRANSISTOR MOUNTING

7. CONNECTION EXAMPLE

- BATTERY +
- CHASSIS -
- WIRING: min 1mm²
8. PCB LAYOUT

9. DIAGRAM

10. MODIFICATION FOR 6V NEGATIVE GROUND OPERATION

Change the following resistors:

- R1, R2 : 150 / 1W
- R3 : 68 / ¼W
- R4 : 100 / ¼W
- R5, R6, R7 : 68 / 1W