Sparkfun Beefcake Relay Control

Flyback Arrestor —
Place D1 with a normal diode such as the 1N4148 for all cases.

Use a zener (such as the 1N4739) at D2 to allow a certain flyback voltage. Keep Vcc + Uzener under 30 volts (Breakdown voltage of the NPN with a 10v margin).

The zener is not critical for protection of the circuit, but helps allow the contacts to open faster. It can be bypassed by shorting JP1.

UCC requirements:
4-6V
150mA

CTRL requirements:
Relay on above 2.6V
Relay off below 0.9V
5mA

CAUTION!
To maintain 250VAC/VDC galvanic isolation, use non-conductive standoffs and 4-40 HV with a head diameter no greater than 0.21 inch.

If metal standoffs are required, or mounting to a conductive chassis, standoff diameter must be less than 0.21 inch.