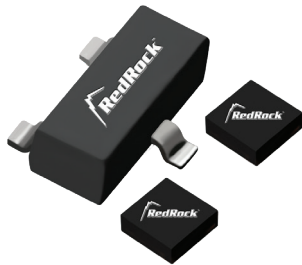




# PUT A LID ON IT!

## MAGNETIC SENSING FOR OPEN & ANTI-TAMPER DETECTION

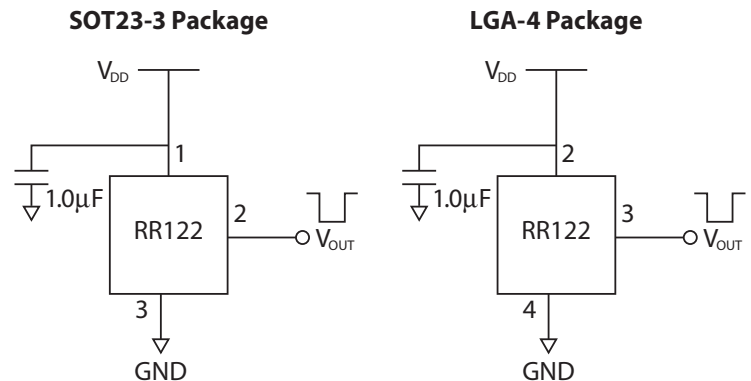
What do consumer electronic devices and “tamper detection” have in common? In both applications, electronic device designers want an easy way to know when a lid, cover, or casing has been opened, so the internal electronics can respond accordingly. In addition, from an electronic design perspective, magnetic sensing is an ideal solution for both.



with our consumer application, a small magnet can be hidden discretely in the cover or lid of the safeguarded device. In the case of tampering, the removal of the lid or cover separating the magnet from a magnetic sensor, can generate a signal to the microprocessor to trigger an alarm or whatever other function is appropriate for the situation. As with the consumer application, the ability to maintain the non-essential electronics in “sleep” mode until they are actually required by the situation offers power savings in battery-powered applications.

Some cutting-edge consumer devices are designed to provide an intuitive experience from the moment that a buyer first opens the package. This “out-of-the-box experience” is typically designed around having the device respond to the user opening the package. With a small magnet embedded in the lid or cover, a magnetic sensor in the device itself can be triggered by the magnet’s separation from the sensor when the lid or cover is removed. A signal can then be sent to the microprocessor to initiate a “wake-up” routine which initiates other functions to greet the user and get them started with their new device. This also has the added benefit of keeping any power consumption in the device at a bare minimum during the storage period between manufacture and purchase by the end user.

**FIGURE 1: APPLICATION CIRCUITS FOR RR122**



If you’re thinking about using magnetic sensing solutions in applications like those described here, please consider Coto Technology’s line of RedRock® TMR magnetic sensors. These sensors offer high sensitivity for wide activation distances, small packages sizes that conserve board real estate, and ultra-low power consumption to maximize battery life. In addition, the high sensitivity of the RR122 TMR magnetic sensors allows them to be paired with smaller, less expensive magnets, thus helping customers to reduce both product size and cost. For a complete listing of RedRock® TMR magnetic sensors, visit [www.cotorelay.com](http://www.cotorelay.com) or contact [redrock@cotorelay.com](mailto:redrock@cotorelay.com) with specific questions.



**While lid removal in a consumer device is meant to lead to a positive experience, there are other applications where lid or cover detachment can serve as an indication of tampering by an unauthorized individual.**

While lid removal in a consumer device is meant to lead to a positive experience, there are other applications where lid or cover detachment can serve as an indication of tampering by an unauthorized individual. Such instances might include a utility meter, a shipping container, or some other secured device. As