SIZE MATTERS IN CAPSULE ENDOSCOPY

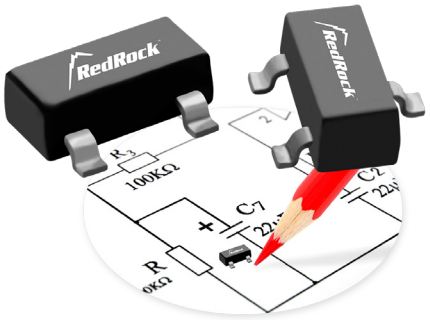
No longer must men and women choose between the discomfort and humility of the physician's endoscope or risk the dangers of poor colorectal health. Advances in medical diagnostics and electronic miniaturization have led to the development of a technology known as capsule endoscopy, the little pill that offers big opportunities for the diagnosis and treatment of all manner of GI tract conditions.

The traditional device for a physician to examine a patient's GI tract is an endoscope, a long flexible tube with a light source and a video camera. Preparation for endoscopy requires a patient to fast for 24 hours, while also consuming a distasteful fluid solution. The procedure itself is physically uncomfortable for the patient and fraught emotional duress. For the physician, it offers limited opportunity to identify, and thereby diagnose, any present condition as the endoscope is relatively inflexible, making it easy to overlook trouble spots.

"RedRock solves the design constraints of capsule endoscopes with a TMR-based solution that incorporates the small size of MEMS devices with the operational characteristics of a magnetic reed switch."

Enter the capsule endoscope, a pill sized device containing an array of LEDs and a camera at either end. Significantly less preparation is necessary; typically a liquid only diet for 24 hours. Then the patient simply swallows the pill. While the pill travels through the GI tract, its cameras take photos twice a second, transmitting the images to a small recording device that the patient wears on their belt. The pill is a single use device, so once it has passed the patient returns the recording pack to their physician, who can then download the images for review. The resulting image feed provides a complete picture of the patients' GI tract, offering improved opportunity for accurate diagnosis.

As revolutionary as capsule endoscopy is for patients and doctors alike, the technology that makes it possible is equally revolutionary for the engineers who designed them. Capsule endoscopes are hermetically sealed to survive the acidic environment of the stomach, as well as the rest of the upper and lower GI tract. Their battery powered operation and long shelf life waiting at the doctor's office means that a low power solution for switching them on when the time is right is crucial to their success. The small size of the pill precludes the use of a traditional reed switch while other magnetic switching technologies consume too much power during the period the switch is sitting on the doctor's shelf.



Coto Technology's RedRock RR120 digital switch, a TMR-based solution that incorporates a small SOT-23 package with high magnetic sensitivity and low power consumption. RedRock is immune to cold welding from long periods of contact closure and consumes very low power, all in a package only 1.12mm high with a 4.26mm^2 footprint.

To learn more about how Coto Technology and RedRock can enable your design aspirations, please contact us at the web address below.

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