



Windowed Watchdog IC with 5V LDO

Description

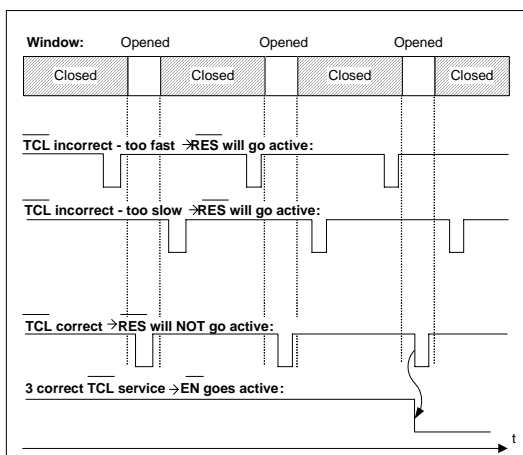
The EM6151/52 are microprocessor voltage supervisory circuits including voltage monitoring, reset timeout period and windowed watchdog. Moreover, the EM6152 includes a 5V low-dropout voltage regulator on-chip. The watchdog timer, the reset timeout period and the voltage threshold are set by external resistors. The windowed watchdog timer function offers increased security compared to a standard watchdog timer.

Benefits

- ❑ Greatly improves security:
 - ✓ Prevents endless loops
 - ✓ Reinitializes the system in case of SW code errors
 - ✓ Avoids conflict between master and slaves MCUs
 - ✓ Catches a malfunctioning crystal oscillator
- ❑ Increased flexibility:
 - ✓ Short or long ratio for opened/closed watchdog window
 - ✓ Parameters set by external resistors
- ❑ Detects events that are expected within a time interval that has both a minimum and a maximum
- ❑ Better heat dissipation (EM6152)
- ❑ One-chip solution to reduce drastically PCB size and mounting costs (EM6152)

Windowed Watchdog

A sophisticated watchdog timer detects when the processor is running outside of an expected (opened) window of operation. A reset is asserted whenever a \overline{TCL} is not received while the watchdog window is opened. Two ratios for the opened/closed windows are available: 33%/67% for increased security or 67%/33% for increased programming flexibility.



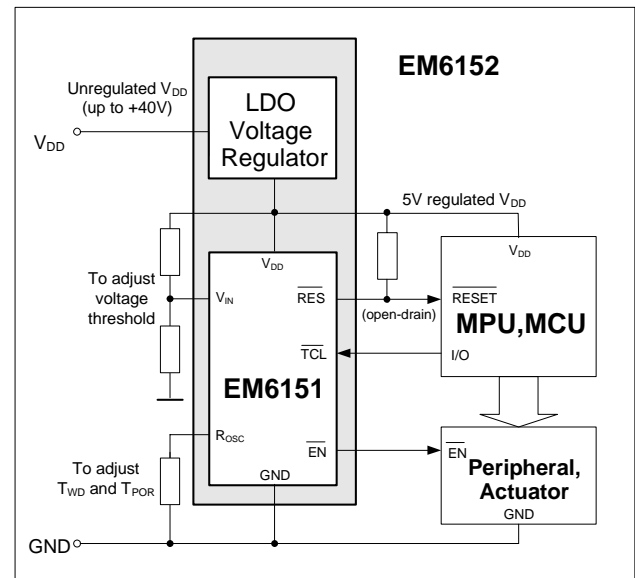
Features

- ❑ Windowed watchdog function
- ❑ Voltage monitoring and power-on reset function
- ❑ Separate ENABLE output for peripheral: the circuit waits 3 acknowledgements from μP to ensure full working system before activation of peripheral (e.g. motor drivers, actuators)
- ❑ CAN sleep mode function
- ❑ -40°C to $+125^{\circ}\text{C}$ operating temperature
- ❑ Open-drain active-low $\overline{\text{RESET}}$ output
- ❑ Push-pull active-low $\overline{\text{ENABLE}}$ output
- ❑ Low supply current: $35\mu\text{A}$ / $145\mu\text{A}$ (EM6151/52)
- ❑ 5V LDO Voltage Regulator, up to 400mA (EM6152)
- ❑ SO-8 and PSOP-16 power package (EM6152)

High Flexibility and Accuracy

- ❑ Adjustable reset threshold voltage with $\pm 3\%$ accuracy
- ❑ Adjustable watchdog timer ($T_{WD} = 10\text{ms}$ to 1sec, accuracy $\pm 10\%$) using one external resistor
- ❑ Adjustable reset timeout period T_{POR} using one external resistor

Typical Application



Product Offering

Part Number	LDO Voltage Regulator ($V_{OUT} / V_{DROPOUT} @ I_{OUT}$)	Input Voltage	Package
EM6151_SO8	-	1.2 to 5.5V	SO-8
EM6152_SO8	5V / 250mV @ 100mA	2.3 to 40V	SO-8
EM6152_PS16	5V / 250mV @ 250mA	2.3 to 40V	PSOP-16