Watchdog ICs
For automotive applications

Guarantee reliability and safety for every MCU-based system

Watchdog ICs improve vehicle reliability by monitoring the system for software code execution errors and hardware failures.

When operating correctly, a vehicle's systems regularly reset an associated watchdog timer. If the timer exceeds the specified timeout period, it alerts the system that a fault condition was detected so that it can take the appropriate action.

The STWD100 is a standalone watchdog including an active-low enable pin that can momentarily disarm the device. The STM706 5V supervisor monitors the supply and forces a reset in the event of a power failure.

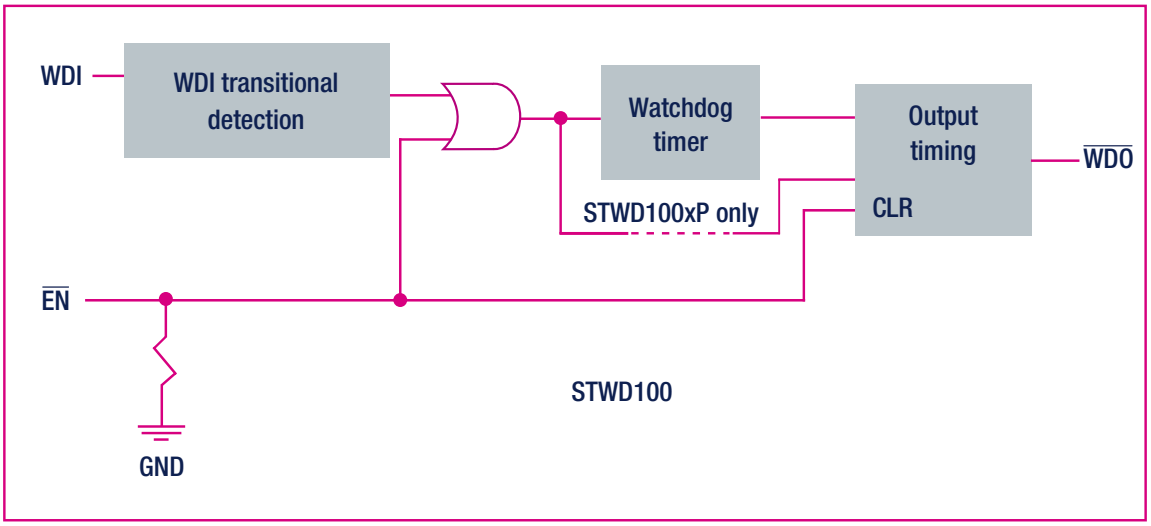
KEY BENEFITS

- Simple, robust and reliable
- Detection of hardware failures including non-responding peripherals, bus contention, etc.
- Monitoring software code execution for events such as bad code jump, code stuck in loop, etc.
- Safe system recovery
- relevant for slow-booting applications or during system programming.
- TS-16949 certification
- AEC-Q100 compliance
- Compliance with AEC-Q001 and AEC-Q002 guidelines for Statistical Yield Analysis (SYA) and Part Average Test (PAT)
- Temperature range: -40/+125 °C at EWS temperature

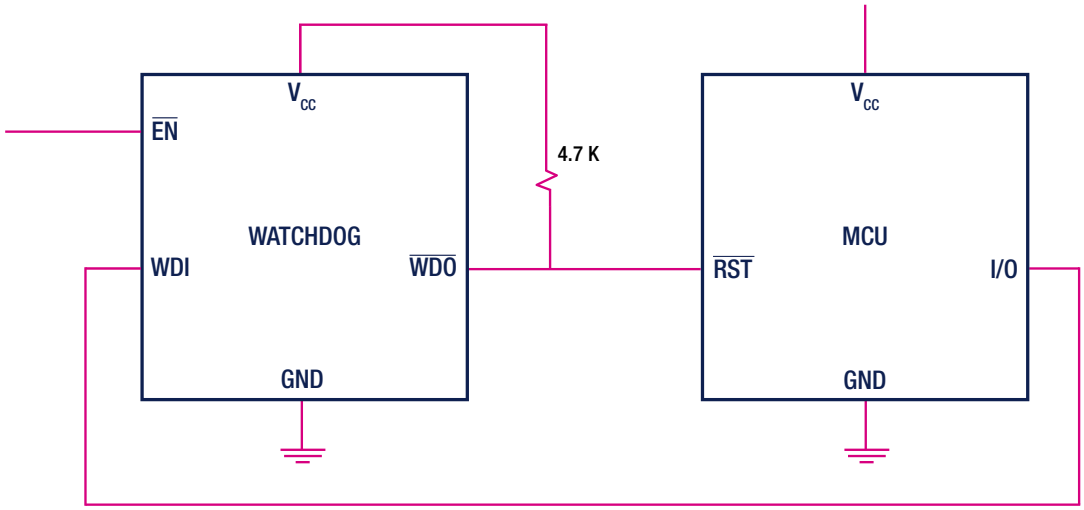
TARGETED APPLICATIONS

- Advanced driver assistance systems (ADAS)
- LED lighting and signaling systems
- Car multimedia and infotainment systems
- Driving connected service

BLOCK DIAGRAM



TYPICAL APPLICATION DIAGRAM



PRODUCT SELECTOR

Device	Part number	Output type	Timeout period (t_{WD})	WDO pulse width (t_{PW})	Package
Standalone watchdog	STWD100YNPWY3F	Open-drain	3.4 ms	3.4 ms	SOT23-5
	STWD100YNWWY3F		6.3 ms	210 ms	
	STWD100YNXWY3F		102 ms	210 ms	
	STWD100YNYWY3F		1.6 s	210 ms	
Watchdog with voltage supervision	STM706YM7F	Push-Pull	1.6 s	210 ms	SO-8