

5V 120mA Automotive LDO Regulator with Watchdog

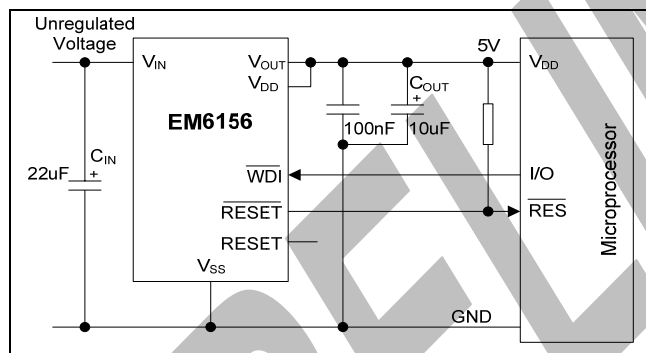
Description

The EM6156 offers a high level of integration by combining voltage regulation, voltage monitoring and software monitoring using a watchdog.

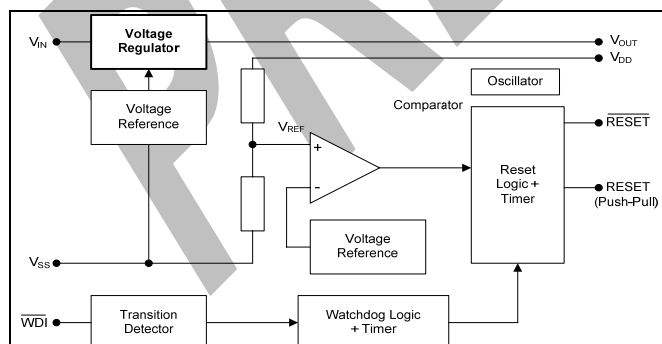
A comparator monitors the voltage applied at the VIN input comparing it with an internal voltage reference VREF. The power-on reset function is initialized after VIN reaches VREF and takes the reset output inactive after a delay TPOR. The reset output goes active low when the VIN voltage is less than VREF. The RESET output is guaranteed to be in a correct state for a regulated output voltage as low as 1.2V. The watchdog function monitors software cycle time and execution. If software clears the watchdog too slowly (incorrect execution) it will cause the system to be reset.

In EM6156, the voltage regulator has a low dropout voltage and a low quiescent current. The quiescent current increases only slightly in dropout prolonging battery life. Built-in protection includes a positive transient absorber for up to 45 V (load dump) and the ability to survive an unregulated input voltage of -42 V (reverse battery). The input may be connected to ground or to a reverse voltage without reverse current flowing from the output to the input.

Typical Operating Configuration



Block Diagram



Features

- 40°C to +125°C temperature range
- Highly accurate 5 V, 120 mA guaranteed output (actual maximum current depends on power dissipation)
- Output voltage tolerance <+/- 3%
- Low dropout voltage, typically 250 mV at 100 mA
- Unregulated DC input can withstand -42 V reverse battery and +45 V power transients
- Fully operational for unregulated DC input voltage up to 40 V and regulated output voltage down to 3.5 V
- No reverse output current
- Very low temperature coefficient for the regulated output
- Current limiting
- Four threshold voltages (2.9V, 3.0V, 4.4V, 4.6V)
- Several timeout reset periods (1.6ms, 25ms, **200ms**, 1600ms)
- Several watchdog timeout periods (6.2ms, 102ms, **1,6s**, 25,6s)
- Push pull or Open-drain active-low RESET output
- Reset output guaranteed for regulated output voltage down to 1.2 V
- Qualified according to AEC-Q100
- Green SO8 Exposed Pad Power Package (RoHS compliant)

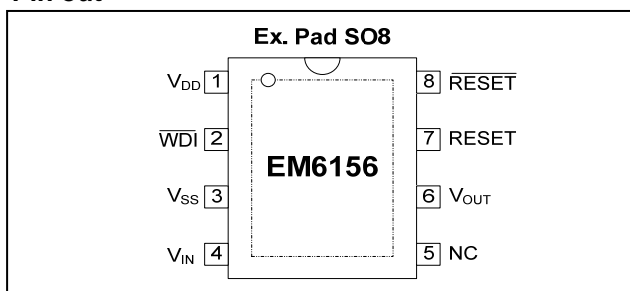
Applications

- Automotive systems
- Industrial
- Computers

Selection Table

Part Number	Output Voltage	Threshold Reset
EM6156LXES8-4.4+	5V	4.4V

Pin out



Conditioning

Tape & Reel, 2500 pcs