# New Product Announcement

# AP7583AQ
# AP7583Q

## Low $I_Q$, 300mA, Automotive-Compliant LDOs with Power Good Support Off-Battery Point-of-Load Applications

The AP7583AQ series and AP7583Q series are 300mA LDOs with a low 3µA quiescent current supporting 12V off-battery automotive applications.

Their wide 3V to 42V input range, coupled with low-dropout voltage and low quiescent current, enables them to support cold-cranking in permanently connected-to-battery applications. These include microcontrollers and CAN transceivers in standby systems.

The AP7583Q series has an enable input, while the AP7583AQ series adds a power-good output to indicate the status of the output voltage. The EN input and PG output can be used for power sequencing control.

The devices are available in an adjustable output as well as 3.3V-fixed and 5V-fixed output voltage versions.

The AP7538Q series and AP7583AQ series are available in the wettable flank W-DFN2020-6 (SWP) (Type A1), while the AP7583AQ is also available in the MSOP-8EP and TO252-4 (Type C).


## The DIODES Advantage

**The AP7583Q/AQ series are 42V input voltage, low dropout, low $I_Q$, 300mA LDO for automotive battery-connected applications.**

- **Wide 3V to 42V Input Voltage Range**
  Supports whole 12V battery operating range including load dumps and cold-cranking
- **Ultra-Low 3µA Quiescent Current**
  Suitable for powering “always-on” components
- **Low-Dropout Voltage 320mV @ $I_{OUT}$ = 300mA**
  Maintains a stable output even during low-voltage transients
- **AP7583AQ Series has a Power Good Output with Internal Pull-Up Resistor**
  Provides fault reporting and facilitates power sequencing
- **High-Power-Density MSOP-8EP and W-DFN2020-6 (SWP) (Type A1) Packages**
  Supports high-power-density automotive PCBs

## Applications

Automotive point-of-load regulation in:

- MCUs and CAN/LIN transceivers
- EV and HEV battery management systems
- Body control modules
- Exterior lighting
- Instrument clusters

*Automotive-compliant - AEC qualified, manufactured in IATF 16949 certified sites supporting PPAP documents.*

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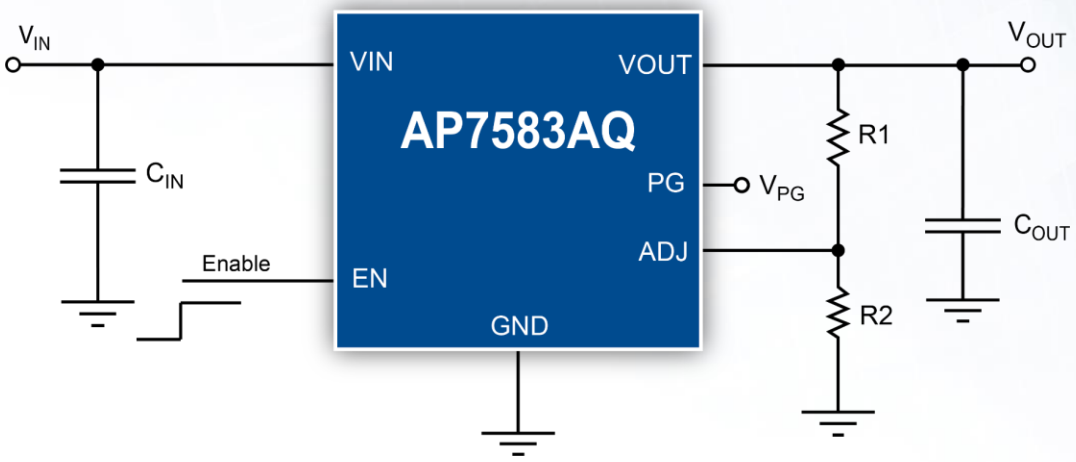
## Typical Application




## Automotive-Compliant Wide $V_{IN}$ LDO Portfolio

| Part Number | $V_{IN}$ | $V_{OUT}$ | $I_{OUT}$ | Max $V_{DROP}$ | $I_Q$ | Output Accuracy | Enable | Power Good | PSRR | Package |
|---|---|---|---|---|---|---|---|---|---|---|
| | V | V | mA | mV | µA | ±% | | | dB | |
| AP7375Q | 3.0 to 45 | 1.8, 3.0, 3.3, 5.0 | 300 | 580 @100mA | 2.1 | 2 | Yes | No | 85 @1kHz | SOT89, SO-8EP, SOT25, U-DFN2020-6 (SWP) (Type UXC) |
| AP7387Q | 5 to 60 | 3.0, 3.3, 3.6, 5.0 | 150 | 500 @50mA | 2 | 2 | No | No | 70 @1kHz | SOT89, U-DFN2020-6 / SWP (Type UXC) |
| **AP7583AQ** | **3.0 to 42** | **Adj, 3.3, 5.0** | **300** | **500 @300mA** | **3** | **1.5** | **Yes** | **Yes** | **70 @100Hz** | **MSOP-8EP, W-DFN2020-6 (SWP) (Type A1), TO252-4 (Type C)** |
| **AP7583Q** | | | | | **2.5** | | | **No** | | **W-DFN2020-6 (SWP) (Type A1)** |

## Ordering Information

| Orderable Part Number | Compliance (Only Automotive Supports PPAP) | Package | Moisture Sensitivity | Packing | |
|---|---|---|---|---|---|
| | | | | Quantity | Carrier |
| AP7583AQ-xxD4-13 | Automotive | TO252-4 (Type C) | MSL-1 | 2,500 | 13” Tape & Reel |
| AP7583AQ-xxMP-13 | Automotive | MSOP-8EP | MSL-1 | 2,500 | 13” Tape & Reel |
| AP7583AQ-xxFDZW-7 | Automotive | W-DFN2020-6 (SWP) (Type A1) | MSL-1 | 3,000 | 7” Tape & Reel |
| AP7583Q-xxFDZW-7 | Automotive | W-DFN2020-6 (SWP) (Type A1) | MSL-1 | 3,000 | 7” Tape & Reel |