

DC/DC Cntrlr Single-OUT Step Down/Step Up 600kHz Automotive 28-Pin HTSSOP EP T/R

Manufacturer: [Texas Instruments, Inc](#)

[LM5176QPWPRQ1 Image](#)

Package/Case: HTSSOP-28

Images are for reference only

Product Type: Power Management ICs

[Inquiry](#)

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

General Description

The LM5176-Q1 is a synchronous four-switch buck-boost DC/DC controller capable of regulating the output voltage at, above, or below the input voltage. The LM5176-Q1 operates over a wide input voltage range of 4.2 V to 55 V (60 V absolute maximum) to support a variety of applications. The LM5176-Q1 employs current-mode control both in buck and boost modes of operation for superior load and line regulation. The switching frequency is programmed by an external resistor and can be synchronized to an external clock signal. The device also features a programmable soft-start function and offers protection features including cycle-by-cycle current limiting, input undervoltage lockout (UVLO), output overvoltage protection (OVP), and thermal shutdown. In addition, the LM5176-Q1 features optional average input or output current limiting, optional spread spectrum to reduce peak EMI, and optional hiccup mode protection in sustained overload conditions.

Key Features

AEC-Q100 qualified for automotive applications
Temperature grade 1: -40°C to 125°C T_A

Functional Safety-Capable
Documentation available to aid functional safety system design

Single inductor buck-boost controller for step-up/step-down DC/DC conversion

Wide V_{IN}: 4.2 V (2.5 V with bias) to 55 V (60 V maximum)

Flexible V_{OUT}: 0.8 V to 55 V

V_{OUT} short protection

High efficiency buck-boost transition

Adjustable switching frequency

Optional frequency sync and dithering

Integrated 2-A MOSFET gate drivers

Cycle-by-cycle current limit and optional hiccup

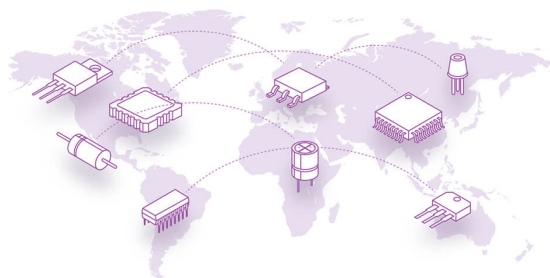
Optional input or output average current limiting

Programmable input UVLO and soft-start

Power good and output overvoltage protection

Available in HTSSOP-28 package

Create a custom design using the LM5176-Q1 with the WEBENCH Power Designer



Recommended For You

LM2637M

Texas Instruments, Inc
SOP24

LM5116MH

Texas Instruments, Inc
TSSOP20

LM234Z-3

Texas Instruments, Inc
TO-92

LM27761DSGR

Texas Instruments, Inc
WSO8

LM74700QDBVRQ1

Texas Instruments, Inc
SOT23-6

LM2991S

Texas Instruments, Inc
TO-263

LM74800QDRRRQ1

Texas Instruments, Inc
WSO8-12

LMR14030SDDAR

Texas Instruments, Inc
SOP8

LM2940CT-12

Texas Instruments, Inc
TO-220

LM536035QPWPTQ1

Texas Instruments, Inc
HTSSOP-16

LM5575MH

Texas Instruments, Inc
TSSOP16

LM536013QDSXTQ1

Texas Instruments, Inc
WSO8-10

LM5160QPWPRQ1

Texas Instruments, Inc
HTSSOP14

LM5576MH

Texas Instruments, Inc
TSSOP20

LMQ61460AFSQRJRRQ1

Texas Instruments, Inc
VQFN-14