

## Conv DC-DC 4V to 40V Step Down Single-Out 0.8V to 28V 2A Automotive 8-Pin HSOIC EP T/R



Images are for reference only

**Manufacturer:** [Texas Instruments, Inc](#)

**Package/Case:** SOP8

**Product Type:** Power Management ICs

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

[Inquiry](#)

### General Description

The LMR14020-Q1 is a 40 V, 2 A step down regulator with an integrated high-side MOSFET. With a wide input range from 4 V to 40 V, it's suitable for various applications from industrial to automotive for power conditioning from unregulated sources. An extended family is available in 3.5 A and 5 A options in pin-to-pin compatible packages, including LMR14030-Q1 and LMR14050-Q1. The regulator's quiescent current is 40  $\mu$ A in Sleep-mode, which is suitable for battery powered systems. An ultra-low 1  $\mu$ A current in shutdown mode can further prolong battery life. A wide adjustable switching frequency range allows either efficiency or external component size to be optimized. Internal loop compensation means that the user is free from the tedious task of loop compensation design. This also minimizes the external components of the device. A precision enable input allows simplification of regulator control and system power sequencing. The device also has built-in protection features such as cycle-by-cycle current limit, thermal sensing and shutdown due to excessive power dissipation, and output overvoltage protection.

The LMR14020-Q1 is available in an 8-pin HSOIC or 10-pin WSON package with exposed pad for low thermal resistance.

## Key Features

Qualified for Automotive Applications

AEC-Q100 Qualified With the Following Results: - Device Temperature Grade 1: -40°C to 125°C Ambient Operating Temperature Range - Device HBM ESD Classification Level H1C - Device CDM ESD Classification Level C4A

4 V to 40 V Input Range

2 A Continuous Output Current

Ultra-low 40  $\mu$ A Operating Quiescent Current

90 m $\Omega$  High-Side MOSFET

Minimum Switch-On Time: 75 ns

Current Mode Control

Adjustable Switching Frequency from 200 kHz to 2.5 MHz

Frequency Synchronization to External Clock

Spread Spectrum Option for Reduced EMI

Internal Compensation for Ease of Use

High Duty Cycle Operation Supported

Precision Enable Input

1  $\mu$ A Shutdown Current

External Soft-start

Thermal, Overvoltage and Short Protection

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## Recommended For You

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### 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