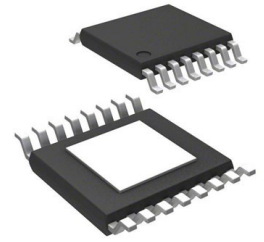


**Conv DC-DC 3.5V to 60V Synchronous Step Down Single-Out 1V to 28V 1A Automotive 16-Pin HTSSOP EP T/R**



Images are for reference only

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

**Package/Case:** HTSSOP16

**Product Type:** Power Management ICs

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

[Inquiry](#)

## General Description

The LM46001-Q1 regulator is an easy-to-use synchronous step-down DC-DC converter capable of driving up to 1 A of load current from an input voltage ranging from 3.5 V to 60 V. The LM46001-Q1 provides exceptional efficiency, output accuracy and drop-out voltage in a very small solution size. An extended family is available in 0.5-A and 2-A load current options in pin-to-pin compatible packages. Peak current mode control is employed to achieve simple control loop compensation and cycle-by-cycle current limiting. Optional features such as programmable switching frequency, synchronization, power-good flag, precision enable, internal soft start, extendable soft start, and tracking provide a flexible and easy-to-use platform for a wide range of applications. Discontinuous conduction and automatic frequency reduction at light loads improve light load efficiency. The family requires few external components and pin arrangement allows simple, optimum PCB layout. Protection features include thermal shutdown,  $V_{CC}$  undervoltage lockout, cycle-by-cycle current limit, and output short-circuit protection. The LM46001-Q1 device is available in the 16-pin HTSSOP (PWP) package (6.6 mm × 5.1 mm × 1.2 mm) with 0.65-mm lead pitch. The device is pin-to-pin compatible with LM4360x and LM4600x families. The LM46001A-Q1 version is optimized for PFM operation and recommended for new designs.

## Key Features

Qualified for Automotive Applications

AEC-Q100 Qualified With the Following Results:

Device Temperature Grade 1: -40°C to +125°C Operating Junction Temperature

24-μA Quiescent Current in Regulation

High Efficiency at Light Load (DCM and PFM)

Tested to EN55022/CISPR 22 EMI Standards

Integrated Synchronous Rectification

Adjustable Frequency Range: 200 kHz to 2.2 MHz (500 kHz default)

Frequency Synchronization to External Clock

Internal Compensation

Stable With Almost Any Combinations of Ceramic, Polymer, Tantalum, and Aluminum Capacitors

Power-Good Flag

Soft Start into Pre-Biased Load

Internal Soft Start: 4.1 ms

Extendable Soft-Start Time by External Capacitor

Output Voltage Tracking Capability

Precision Enable to Program System UVLO

Output Short-Circuit Protection with Hiccup Mode

Overtemperature Thermal Shutdown Protection

Create a Custom Design Using the LM46001-Q1 With the WEBENCH Power Designer

## 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

WSON-10

**LM5160QPWPRQ1**

Texas Instruments, Inc

HTSSOP14

**LM5576MH**

Texas Instruments, Inc

TSSOP20

**LMQ61460AFSQRJRRQ1**

Texas Instruments, Inc

VQFN-14