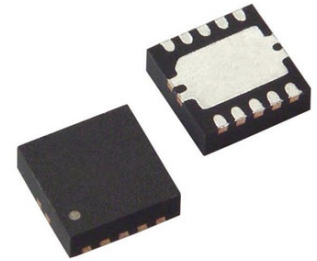


Synchronous Buck Converter Optimized for Size and Light Load Efficiency



Images are for reference only

[Inquiry](#)

Manufacturer: [Texas Instruments, Inc](#)

Package/Case: VQFN-HR-9

Product Type: Power Management ICs

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

General Description

The LMR36506-Q1 is the industry's smallest 65 V, 0.6 A synchronous step-down DC/DC converter in 2-mm x 2-mm HotRod package. This easy-to-use converter can handle input voltage transients up to 70 V, provide excellent EMI performance and support fixed 3.3 V, 5 V and other adjustable output voltages. The LMR36506-Q1 uses peak current mode control architecture with internal compensation and maintains stable operation with minimal output capacitance. The wide input operating range of the LMR36506-Q1 helps it remain functional during a deep input voltage sag condition, making it an excellent choice for automotive applications withstanding severe cold crank start impulses. The PGOOD flag in the LMR36506-Q1 provides precise indication of the output voltage status, eliminating the requirement for an external supervisor. A seamless transition from FPWM to PFM, with an ultra-low standby quiescent current allows the LMR36506-Q1 to support much higher system efficiency at low output loads. The MODE/SYNC pin variant helps to synchronize the LMR36506-Q1 to an external clock. With the right resistor selection, the LMR36506-Q1 RT pin variant can also be externally programmed to any desired switching frequency of operation. The rich feature set of the LMR36506-Q1 is designed to simplify implementation for a wide range of automotive end equipments.

Key Features

Device temperature grade 1: -40°C to +125°C, T

A

Functional Safety-Capable

Documentation available to aid functional safety system design

4 μ A I

q

IN

OUT

Miniature solution size and low component cost

Internal compensation

Designed for automotive applications:

Junction temperature range -40°C to +150°C

Wide input voltage range: 3.0 V (falling threshold) to 65 V

Adjustable, 3.3-V and 5-V fixed output voltage options available

Synchronizable with MODE/SYNC pin variant

Adjustable F

SW

Pin compatible with

LMR36503-Q1

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

WSON-10

LM5160QPWPRQ1

Texas Instruments, Inc

HTSSOP14

LM5576MH

Texas Instruments, Inc

TSSOP20

LMQ61460AFSQRJRRQ1

Texas Instruments, Inc

VQFN-14