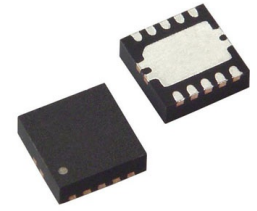


Conv DC-DC 3.5V to 42V Synchronous Step Down Single-Out 1V to 15V 5.5A Automotive 22-Pin VQFN-HR T/R



Images are for reference only

Manufacturer: [Texas Instruments, Inc](#)

Package/Case: VQFN-22

Product Type: Power Management ICs

RoHS: RoHS Compliant/Lead free 

Lifecycle: Active

[Inquiry](#)

General Description

The LMS3635-Q1 and LMS3655-Q1 synchronous buck regulators are optimized for high performance applications, providing an output voltage of 3.3 V, 5 V, or an adjustable output of 1 V to 20 V. Seamless transition between PWM and PFM modes, along with a low quiescent current, ensures high efficiency and superior transient responses at all loads.

Advanced high-speed circuitry allows the LMS3655-Q1 to regulate an input of 24 V to an output of 3.3 V at a fixed frequency of 400 kHz while also enabling a continuous load current of 5.5 A. An innovative frequency foldback architecture allows this device to regulate a 3.3-V output from an input voltage of only 3.5 V. The input voltage can range up to 36 V, with transient tolerance up to 42 V, easing input surge protection design.

An open-drain reset output, with built-in filtering and delay, provides a true indication of system status. This feature negates the requirement for an additional supervisory component, saving cost and board space.

Key Features

AEC-Q100-qualified for automotive applications
Device temperature grade 1: -40°C to +125°C ambient operating temperature

Device HBM classification level 2

Device CDM classification level C6

96% Peak efficiency while converting 12 V to 5 V

Low EMI and minimized switch node ringing

400-kHz ($\pm 10\%$) fixed switching frequency

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

External frequency synchronization

$\overline{\text{RESET}}$ output with internal filter and 3-ms release timer

Automatic light load mode for improved efficiency

Pin-selectable forced PWM mode

Built-In compensation, soft start, current limit, thermal shutdown, and UVLO

0.35-V dropout with 3.5-A Load at 25°C (Typical)

18- μA $I_{\text{Q_VIN}}$: quiescent current at 3.3 V_{OUT} and no load (typical)

Output voltage: 5 V, 3.3 V, and ADJ (1 V to 20 V)

$\pm 1.5\%$ reference voltage tolerance

Create a custom design using the LMS3655-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

WSON-10

LM5160QPWPRQ1

Texas Instruments, Inc

HTSSOP14

LM5576MH

Texas Instruments, Inc

TSSOP20

LMQ61460AFSQRJRRQ1

Texas Instruments, Inc

VQFN-14