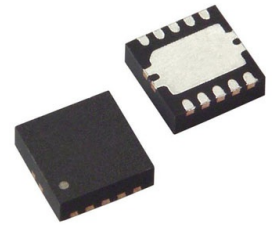


## Buck Converter With Integrated Switches 2.8V to 5.5V Automotive 26-Pin VQFN-HR EP T/R



Images are for reference only

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

**Package/Case:** VQFN-HR-26

**Product Type:** Power Management ICs

**Lifecycle:** Active

[Inquiry](#)

### General Description

The LP8752x-Q1 device is designed to meet the power-management requirements of the latest processors and platforms in various automotive power applications. The device contains four step-down DC/DC converter cores, which are configured as a 4-phase output, 3-phase and 1-phase outputs, 2-phase and 2-phase outputs, one 2-phase and two 1-phase outputs, or four 1-phase outputs. The device is controlled by an I<sup>2</sup>C-compatible serial interface and by enable signals.

The automatic pulse-width-modulation (PWM) to pulsed-frequency-modulation (PFM) operation (AUTO mode), together with the automatic phase adding and phase shedding, maximizes efficiency over a wide output-current range. The LP8752x-Q1 supports remote differential-voltage sensing for multiphase outputs to compensate IR drop between the regulator output and the point-of-load (POL) improving the accuracy of the output voltage. The switching clock can be forced to PWM mode and also synchronized to an external clock to minimize the disturbances.

The LP8752x-Q1 device supports load-current measurement without the addition of external current-sense resistors. The device also supports programmable start-up and shutdown delays and sequences synchronized to enable signals. The sequences can include GPIO signals to control external regulators, load switches, and processor reset. During start-up and voltage change, the device controls the output slew rate to minimize output-voltage overshoot and in-rush current.

## 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

Device HBM ESD Classification Level 2

Device CDM ESD Classification Level C4B

Input Voltage: 2.8 V to 5.5 V

Output Voltage: 0.6 V to 3.36 V

Four High-Efficiency Step-Down DC/DC Converter Cores:

Maximum Output Current: 10 A

Switching Frequency: 2 MHz

Spread-Spectrum Mode and Phase Interleaving

Configurable General Purpose I/O (GPIOs)

1

2

C-Compatible Interface That Supports Standard (100 kHz), Fast (400 kHz), Fast+ (1 MHz), and High-Speed (3.4 MHz) Modes

Interrupt Function With Programmable Masking

Programmable Power-Good Signal (PGOOD)

Output Short-Circuit and Overload Protection

Overtemperature Warning and Protection

Overvoltage Protection (OVP) and Undervoltage Lockout (UVLO)

## Recommended For You

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### LP2997MR

Texas Instruments, Inc

SOP-8

### LP2951-50QDRGRQ1

Texas Instruments, Inc

SON-8

### TL431ILP

Texas Instruments, Inc

TO-92

### LP3966ES-ADJ/NOPB

Texas Instruments, Inc

TO263

### TPL7407LPWR

Texas Instruments, Inc

TSSOP16

### LP2997MR/NOPB

Texas Instruments, Inc

SOP8

**TL431CLP**

Texas Instruments, Inc  
TO-92

**LP2996MR/NOPB**

Texas Instruments, Inc  
SOP-8

**LP2951-50QDRQ1**

Texas Instruments, Inc  
SOP8

**LP5912Q1.8DRVRQ1**

Texas Instruments, Inc  
WSO-6

**LP5912Q3.3DRVRQ1**

Texas Instruments, Inc  
WSO-6

**LP2996MX**

Texas Instruments, Inc  
SOP-8

**LP2996MX/NOPB**

Texas Instruments, Inc  
SOP8

**LP2989AIM-3.3/NOPB**

Texas Instruments, Inc  
SOP8

**LP2998MAX/NOPB**

Texas Instruments, Inc  
SOP8