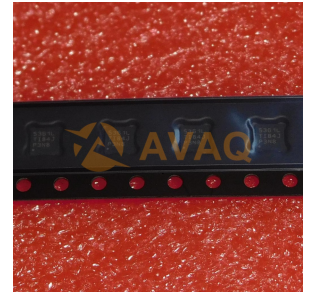


## Conv DC-DC 3.55V to 36V Synchronous Step Down Single-Out 5V 1A Automotive 10-Pin WSON EP T/R



Images are for reference only

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

**Package/Case:** WSON-10

**Product Type:** Power Management ICs

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

[Inquiry](#)

### General Description

The LM53600-Q1 and LM53601-Q1 synchronous buck regulator devices are optimized for automotive applications, providing an output voltage of 5 V, 3.3 V, or an adjustable output. Load current up to 650 mA is supported by the LM53600-Q1, while the LM53601-Q1 supports up to 1000 mA. Advanced high-speed circuitry allows the LM53600-Q1 and LM53601-Q1 devices to regulate from an input of 18 V to an output of 3.3 V at a fixed frequency of 2.1 MHz. Innovative architecture allows the device to regulate a 3.3-V output from an input voltage of only 3.8 V. The input voltage range up to 36 V, with transient tolerance of up to 42 V, eases input surge protection design. An open drain reset output, with filtering and delayed release, provides a true indication of system status. This feature negates the requirement for an additional supervisory component, saving cost and board space. Seamless transitions between PWM and PFM modes, along with a quiescent current of only 23  $\mu$ A, ensures high efficiency and superior transient response at all loads. Few external components are needed allowing the generation of compact PCB layout. While the LM53600-Q1 and LM53601-Q1 devices are Q1 rated, electrical characteristics are ensured across a junction temperature range of  $-40^{\circ}\text{C}$  up to  $150^{\circ}\text{C}$ .

## 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 classification level 2

Device CDM classification level C5

-40°C to 150°C junction temperature range (available)

Wide operating input voltage: 3.55 V to 36 V (with transient to 42 V)

Spread spectrum option available

2.1-MHz fixed switching frequency

Low quiescent current: 23  $\mu$ A

Shutdown current: 1.8  $\mu$ A

Adjustable, 3.3-V, or 5-V output

Maximum current load: 650 mA for LM53600-Q1, 1000 mA for LM53601-Q1

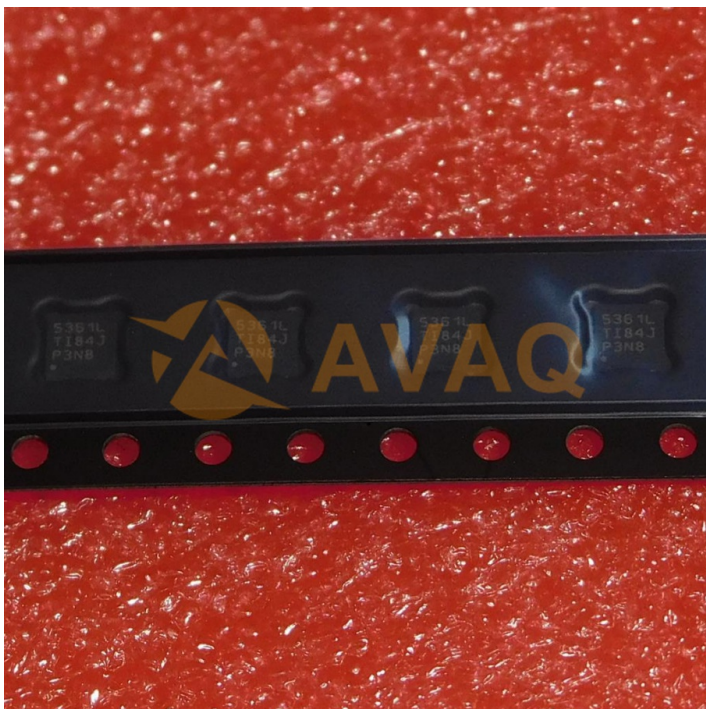
Pin-selectable forced PWM mode

RESET output with filter and delay release

External frequency synchronization

Internal compensation, soft start, current limit, and UVLO

10-lead, 3-mm  $\times$  3-mm SON package with wettable and non-wettable flanks



## 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