

## DC/DC Cntrlr Single-OUT Step Up 975kHz Automotive 20-Pin HTSSOP EP T/R



Images are for reference only

[Inquiry](#)

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

**Package/Case:** HTSSOP20

**Product Type:** Power Management ICs

**RoHS:** RoHS Compliant/Lead free 

**Lifecycle:** Active

### General Description

The LM5122 is a multi-phase capable synchronous boost controller intended for high-efficiency synchronous boost regulator applications. The control method is based upon peak-current-mode control. Current-mode control provides inherent line feed forward, cycle-by-cycle current limiting, and ease of loop compensation.

The switching frequency is programmable up to 1 MHz. Higher efficiency is achieved by two robust N-channel MOSFET gate drivers with adaptive dead-time control. A user-selectable diode-emulation mode also enables discontinuous-mode operation for improved efficiency at light load conditions.

An internal charge pump allows 100% duty cycle for high-side synchronous switch (bypass operation). A 180° phase shifted clock output enables easy multi-phase interleaved configuration. Additional features include thermal shutdown, frequency synchronization, hiccup-mode current limit, and adjustable line undervoltage lockout.

### Key Features

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 C6

Maximum Input Voltage: 65 V

Minimum Input Voltage: 3 V (4.5 V for Start-Up)

Output Voltage up to 100 V

Bypass (VOUT = VIN) Operation

1.2-V Reference with ±1% Accuracy

Free-Run and Synchronizable Switching to 1 MHz

Peak-Current-Mode Control

Robust 3-A Integrated Gate Drivers

Adaptive Dead-Time Control

Optional Diode-Emulation Mode

Programmable Cycle-by-Cycle Current Limit

Hiccup-Mode Overload Protection

Programmable Line UVLO

Programmable SoftStart

Thermal Shutdown Protection

Low Shutdown Quiescent Current: 9  $\mu$ A

Programmable Slope Compensation

Programmable Skip-Cycle Mode Reduces Standby Power

Allows External VCC Supply

Inductor DCR Current Sensing Capability

Multi-phase Capability

Thermally Enhanced 20-Pin HTSSOP

Create a Custom Design Using the LM5122 With the WEBENCH<sup>®</sup> Power Designer

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## 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