


## Fuel Gauge Li-FePO4/Li-Ion/Li-Pol -0.3V to 10V 15-Pin DSBGA T/R

<b>Manufacturer:</b>	<a href="#">Texas Instruments, Inc</a>
<b>Package/Case:</b>	DSBGA15
<b>Product Type:</b>	Power Management ICs
<b>RoHS:</b>	RoHS Compliant/Lead free 
<b>Lifecycle:</b>	Active



Images are for reference only

[Inquiry](#)

### General Description

The Texas Instruments bq27742-G1 is a fuel gauge for single-cell Li-Ion battery packs that uses patented Impedance Track technology to deliver rate-, temperature-, and aging-compensated predictions of remaining battery capacity and system runtime with highest accuracy. The device also includes a fully integrated high-side protector that eliminates the need for a separate Li-Ion protection circuit and provides a full suite of high-accuracy fault detections for overvoltage, undervoltage, overcurrent in charge, overcurrent in discharge, and short-circuit in discharge conditions. The hardware protection functions offer built-in data flash-based programmability, allowing simple reconfiguration of existing devices for varying end equipment needs.

The fuel gauge provides information such as remaining battery capacity (mAh), state-of-charge (%), runtime to empty (minutes), voltage (mV), current (mA), and temperature (°C), as well as recording vital parameters throughout the lifetime of the battery. The device also supports interrupts to the host to indicate detection of a variety of important battery conditions to the system.

The DSBGA is a 15-ball package (2.78 mm × 1.96 mm) that is ideal for space-constrained applications.

## Key Features

Battery Fuel Gauge and Protector for Single-Cell Li-Ion Applications

Microcontroller Peripheral Provides:  
Precision 16-Bit, High-Side Coulomb Counter with Low-Value Sense Resistor (5 m $\Omega$  to 20 m $\Omega$ )

External and Internal Temperature Sensors for Battery Temperature Reporting

Lifetime and Current Data Logging

64 Bytes of Non-Volatile Scratch Pad Flash

SHA-1 Authentication Capability

Battery Fuel Gauging Based on Patented Impedance Track<sup>®</sup> Technology  
Models Battery Discharge Curve for Accurate Time-To-Empty Predictions

Automatically Adjusts for Aging, Self-Discharge, and Temperature- and Rate-Induced Effects on Battery

Integrated High-side NMOS Protection FET Drive

Hardware-based Safety and Protection:  
Overvoltage (OVP)

Undervoltage (UVP)

Overcurrent in Charge (OCC)

Overcurrent in Discharge (OCD)

Short-Circuit in Discharge (SCD)

I<sup>2</sup>C and HDQ Interface Formats for Communication with Host System

Ultra-Compact, 15-Ball NanoFree<sup>®</sup> DSBGA

All trademarks are the property of their respective owners.

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## Recommended For You

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### **BQ51013BRHLR**

Texas Instruments, Inc

VQFN20

### **BQ51050BRHLT**

Texas Instruments, Inc

QFN

### **BQ51050BRHLR**

Texas Instruments, Inc

VQFN-20

**BQ24045DSQR**

Texas Instruments, Inc  
WS0N10

**BQ24725ARGRT**

Texas Instruments, Inc  
QFN

**BQ7693000DBT**

Texas Instruments, Inc  
TSSOP30

**BQ25896RTIWT**

Texas Instruments, Inc  
QFN24

**TL432BQDBZR**

Texas Instruments, Inc  
SOT23-3

**BQ2050HSN-A508**

Texas Instruments, Inc  
SOP16

**BQ24192RGER**

Texas Instruments, Inc  
VQFN24

**BQ2000SN-B5**

Texas Instruments, Inc  
SOP8

**BQ24105RHLR**

Texas Instruments, Inc  
VQFN20

**BQ24190RGER**

Texas Instruments, Inc  
VQFN24

**BQ24010DRCR**

Texas Instruments, Inc  
QFN

**TPS54360BQDDAQ1**

Texas Instruments, Inc  
SOP-8