

PERFORMANCE BATTERY MONITOR IC CURRENT, VOLTAGE AND, TEMPERATURE MEASUREMENT

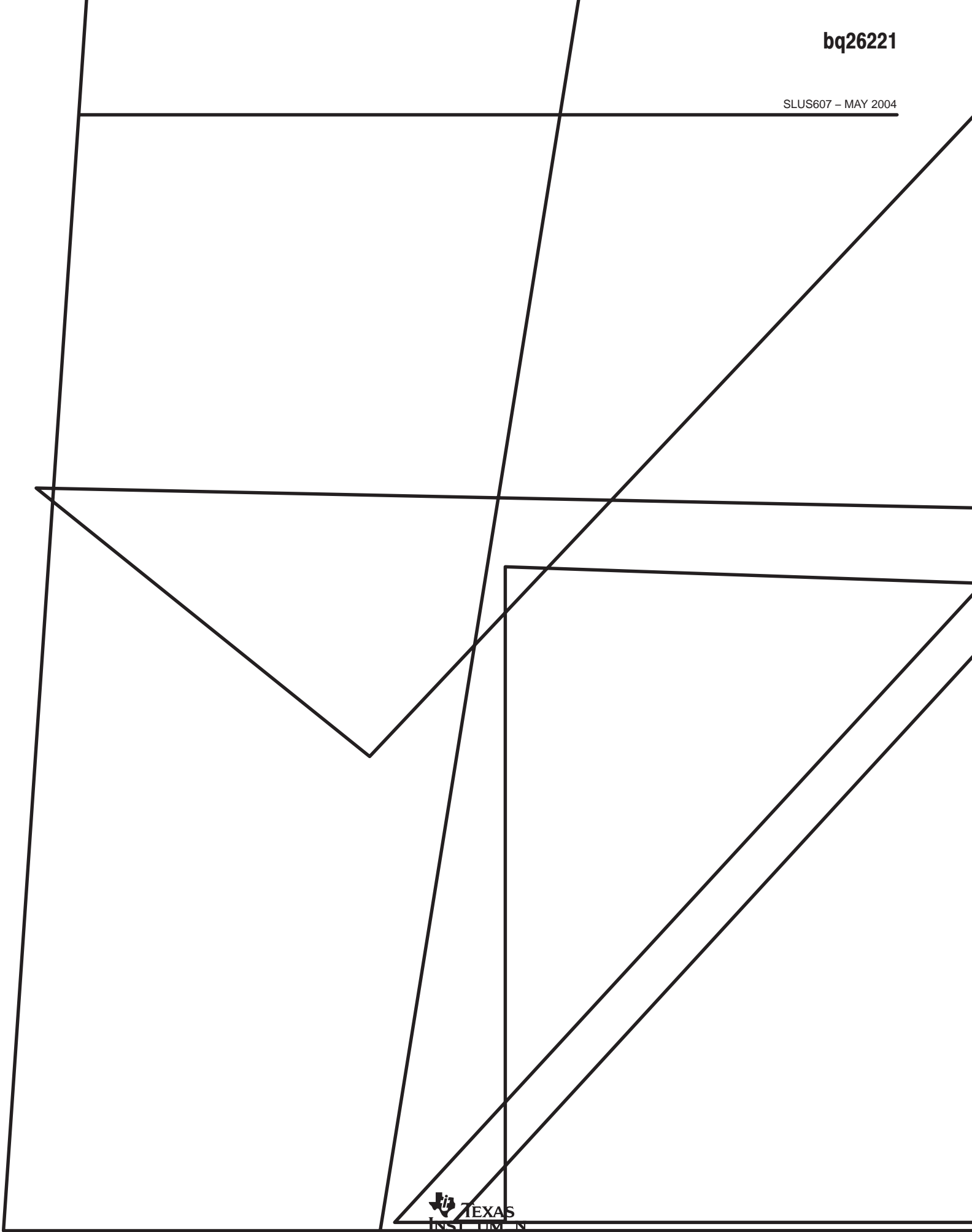
DESCRIPTION

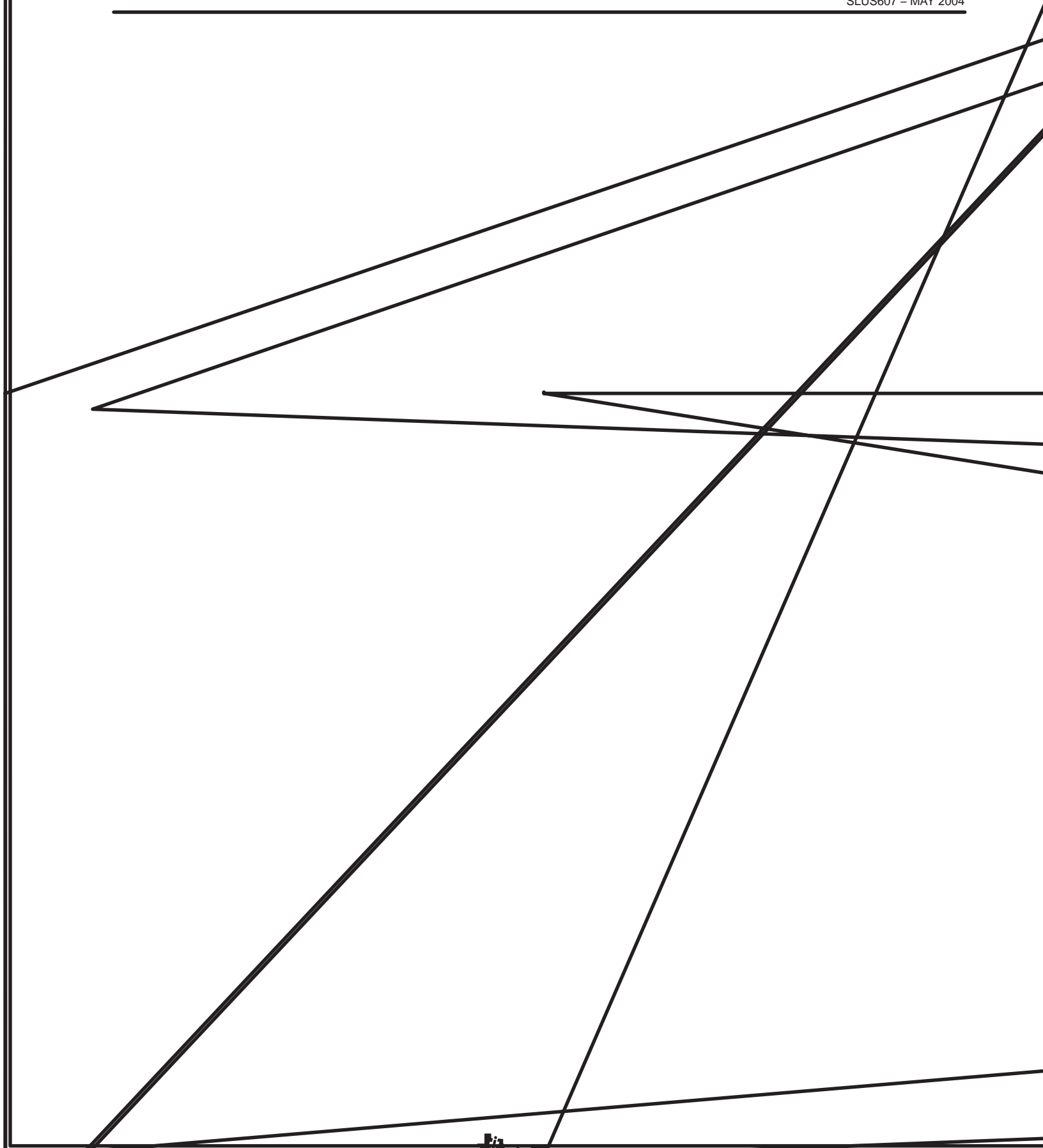
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The bq26221 is an advanced battery monitoring device designed to accurately measure the charge and discharge currents in rechargeable battery packs. Intended for pack integration, the bq26221 contains all the necessary functions to form the basis of a comprehensive battery capacity management system in portable applications such as cellular phones, PDAs, or other portable products.

The bq26221 works with the host controller in the portable system to implement the battery management system. The host controller is responsible for interpreting the bq26221 data and communicating meaningful battery data to the end-user or power management system.

This device provides 64 bytes of general-purpose flash memory, 8 bytes of ID ROM and 32 bytes of flash-backed RAM for data storage. The nonvolatile memory can maintain formatted battery monitor information, identification codes, warranty information, or other critical battery parameters during periods when the battery is temporarily shorted or deeply discharged.





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APPLICATION INFORMATION

register descriptions

battery voltage offset registers (BATH)

Bits 3 through 7 of the BATH register (address = 0x72) store the offset information for the voltage ADC. The most significant bit is the sign bit followed by 4 bits of offset data. Each count of offset represents 8 mV. The host is responsible for subtracting the offset for the measurement from the uncorrected value found in BATH and BATL registers. This is a signed magnitude number with Bit 7 being the sign bit. A 1 in Bit 7 means that the number is negative.

battery voltage registers (BATH/BATL)

The BATH (address = 0x72 – bits 0 through 2) and the BATL low-byte register (address = 0x71) contain the result of ADC conversion on the battery voltage. The voltage is expressed in an 11-bit binary format with an LSB step size of 2.44 mV. Bit 3 of BATH register represents the MSB and bit 0 of the BATL represent the LSB.

flash program address register (FPA)

The FPA byte register (address = 0x70) points to the flash address location that is programmed when the program flash command is issued. This byte is used with the FPD and FCMD register to program an individual byte in flash memory.

flash program data register (FPD)

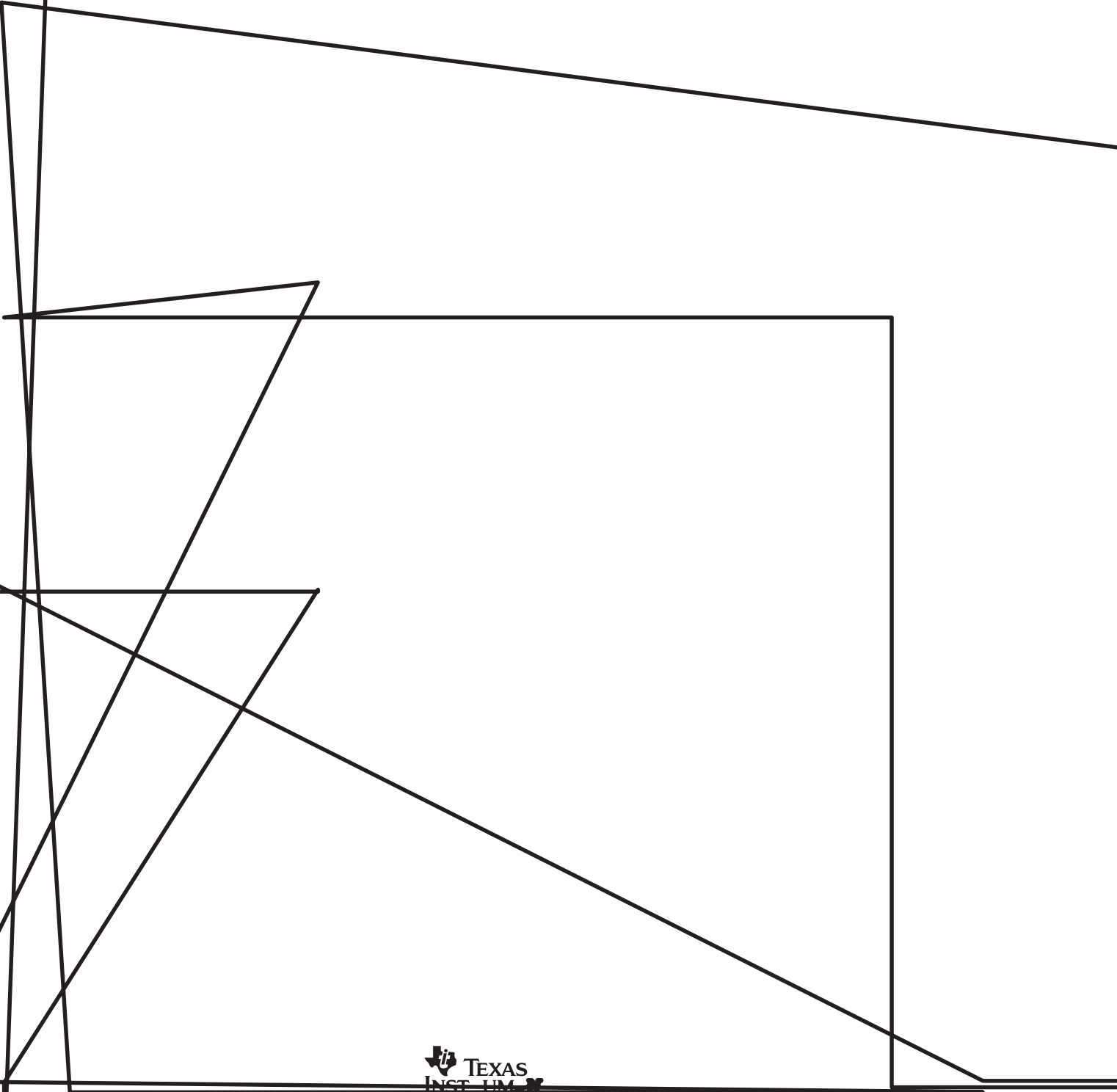
The FPD byte register (address = 0x6F) contains the data to be programmed into the flash address location pointed to by the contents of the FPA register. When the program flash command is issued, the contents of the FPD register are ANDed with the contents of the byte pointed to by the FPA and then stored into that location.

discharge count registers (DCRH/DCRL)

The DCRH high-byte register (address = 0x6E) and the DCRL low-byte register (address = 0x6D) contain the count of the discharge, and are incremented whenever $V_{SR} < V_{SS}$. These registers continue to count beyond FFFFH, so pro

Therge count registers (DCRC/DCRC)

dis TD - high-byte register (address = 0x6E)Cand the DCRC low-byte register (address = 0x6D)Bcontain



PACKAGING INFORMATION

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Peak Temp ⁽³⁾	Samples (Requires Login)
BQ26221PW	ACTIVE	TSSOP	PW	8	100	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	
BQ26221PWG4	ACTIVE	TSSOP	PW	8	100	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	
BQ26221PWR	ACTIVE	TSSOP	PW	8	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	
BQ26221PWRG4	ACTIVE	TSSOP	PW	8	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR	

⁽¹⁾ The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBSELETE: TI has discontinued the production of the device.

⁽²⁾ Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

TBD: The Pb-Free/Green conversion plan has not been defined.

Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

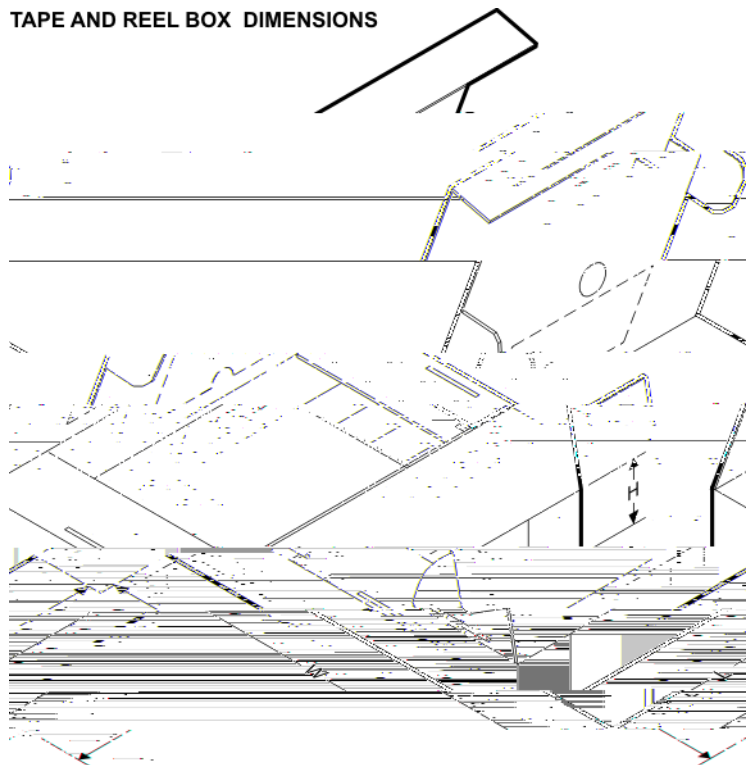
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

⁽³⁾ MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
BQ26221PWR	TSSOP	PW	8	2000	367.0	367.0	35.0

0,65

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4,50
4,30

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shall not exceed 0,25 each side.

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