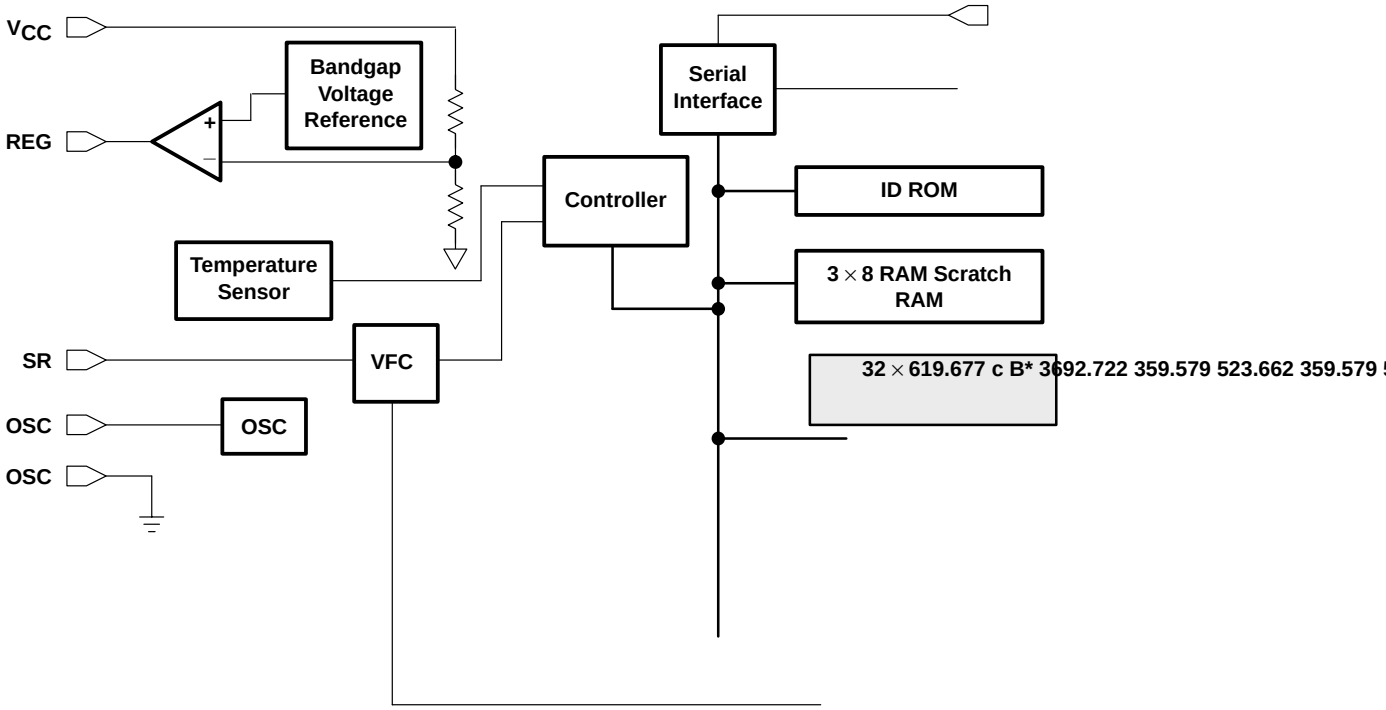
- **Multifunction Monitoring IC Designed to Work With an Intelligent Host Controller**
  - **Provides State-of-Charge Information for Rechargeable Batteries**

functional block diagram



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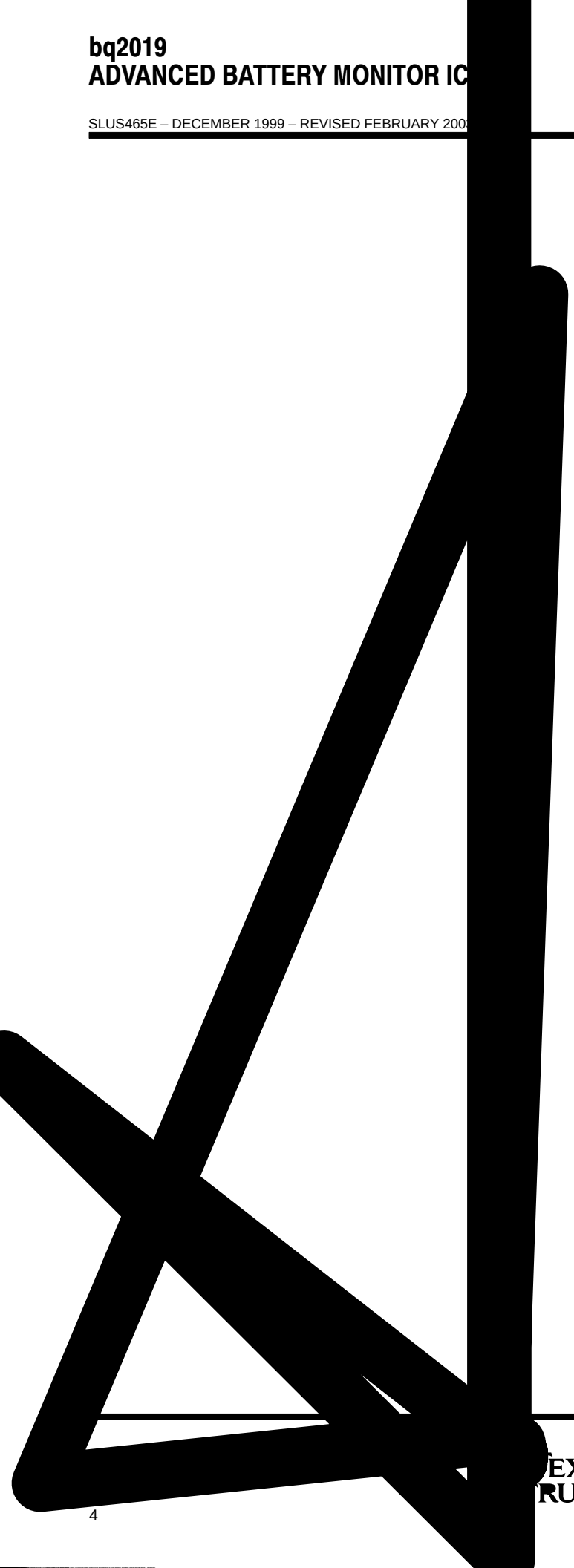
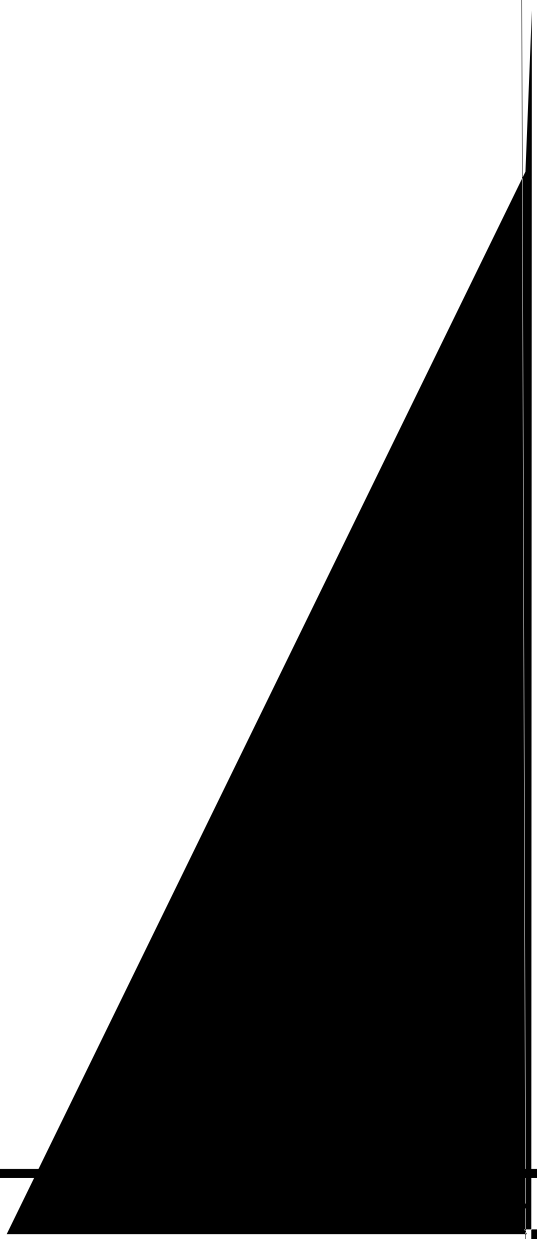
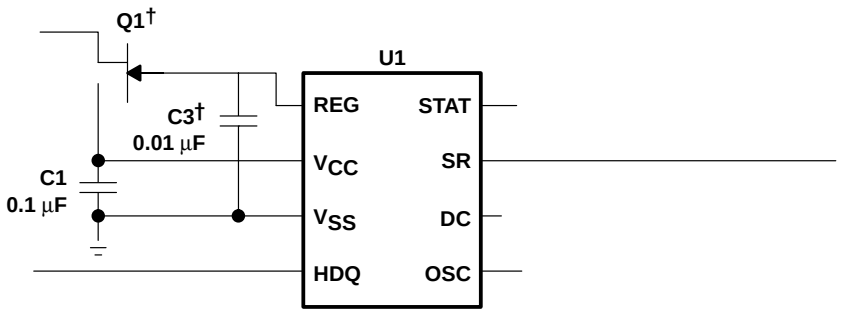




APPLICATION INFORMATION



APPLICATION INFORMATION

REG output (continued)

low-power operation

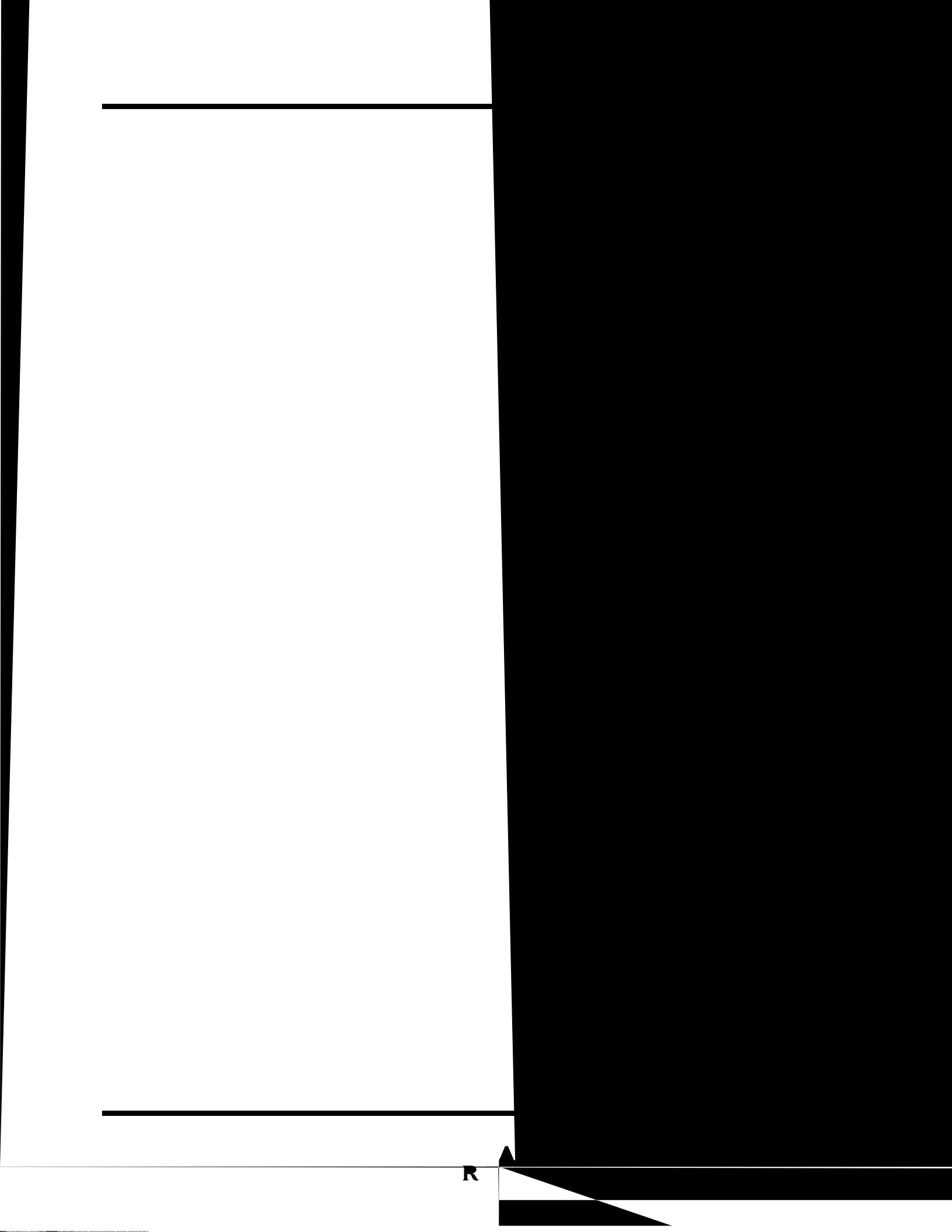
The bq2019 begins low-power operation in response to the host issuing the sleep command. Before entering the low-power state, the host processor should write the command to transfer the registers to flash. After the sleep command is sent and the charge/discharge activity is less than the value indicated by the WOE bits shown in Table 3, the chip clock is powered down and data-acquisition functions cease except for self-discharge updates. Setting the WOE bits to 0 causes the device to enter sleep mode, regardless of the level of charge/discharge activity. During device sleep the bq2019 periodically wakes briefly to update the temperature registers and self-discharge rate. The bq2019 wakes on either a low-to-high or high-to-low transition on the HDQ pin.

Table 2. Operational States

MODE	ACTIVE REGISTERS
Normal	CCR, DCR, CTC, DTC, SCR
Sleep	SCR

Table 3. WOE Thresholds

$WOE_{3–1}$ (HEX)	V_{WOE} (mV)
0h	NA
1h	3.516
2h	1.758
3h	1.172
4h	0.879
5h	0.703
6h	0.586
7h	0.502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bq2019
ED BATTERY MONITOR IC

E – DECEMBER 1999 – REVISED FEBRUARY 2003

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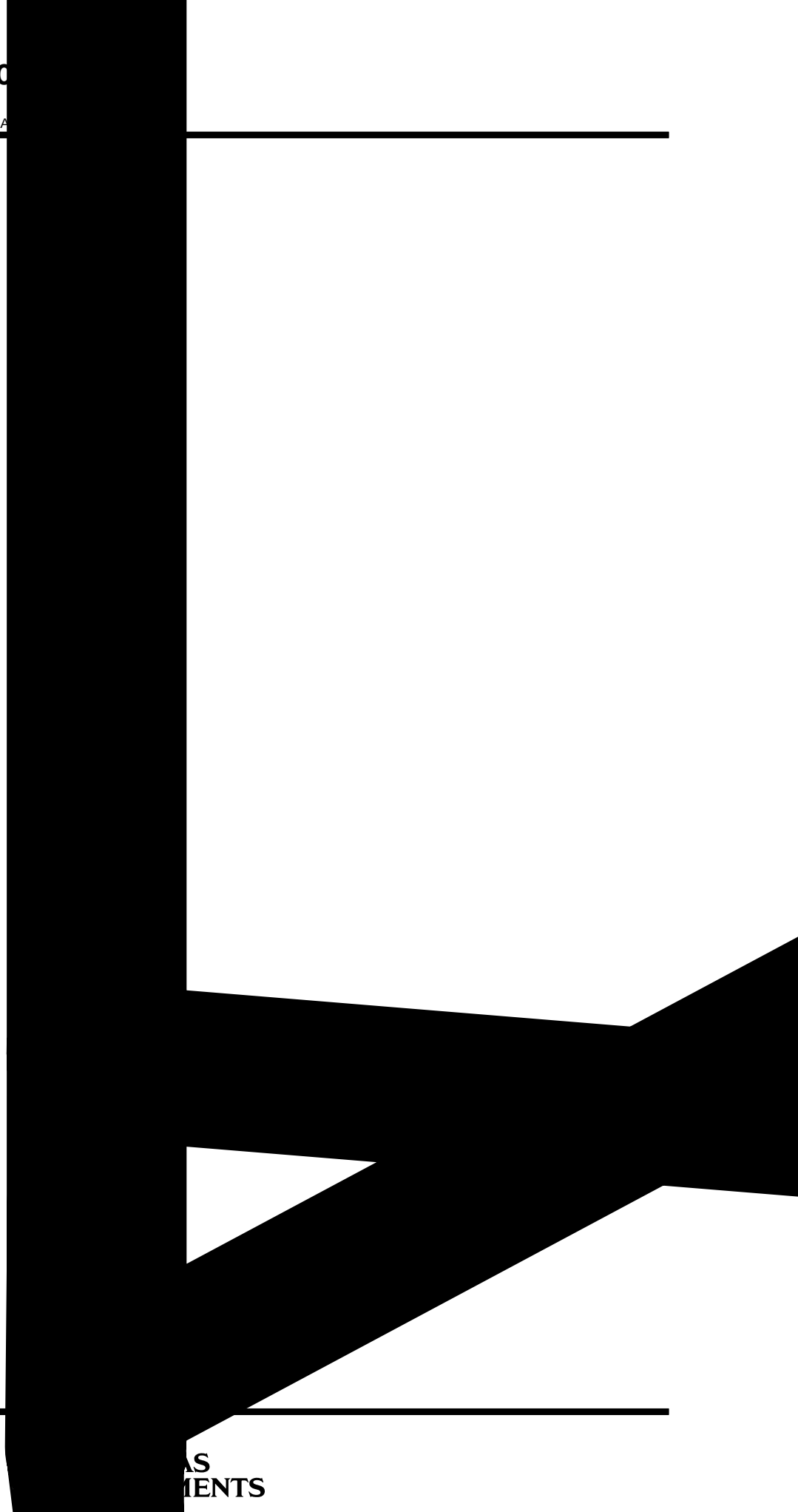
APPLICATION INFORMATION

register descriptions (continued)



flash command re CMD)

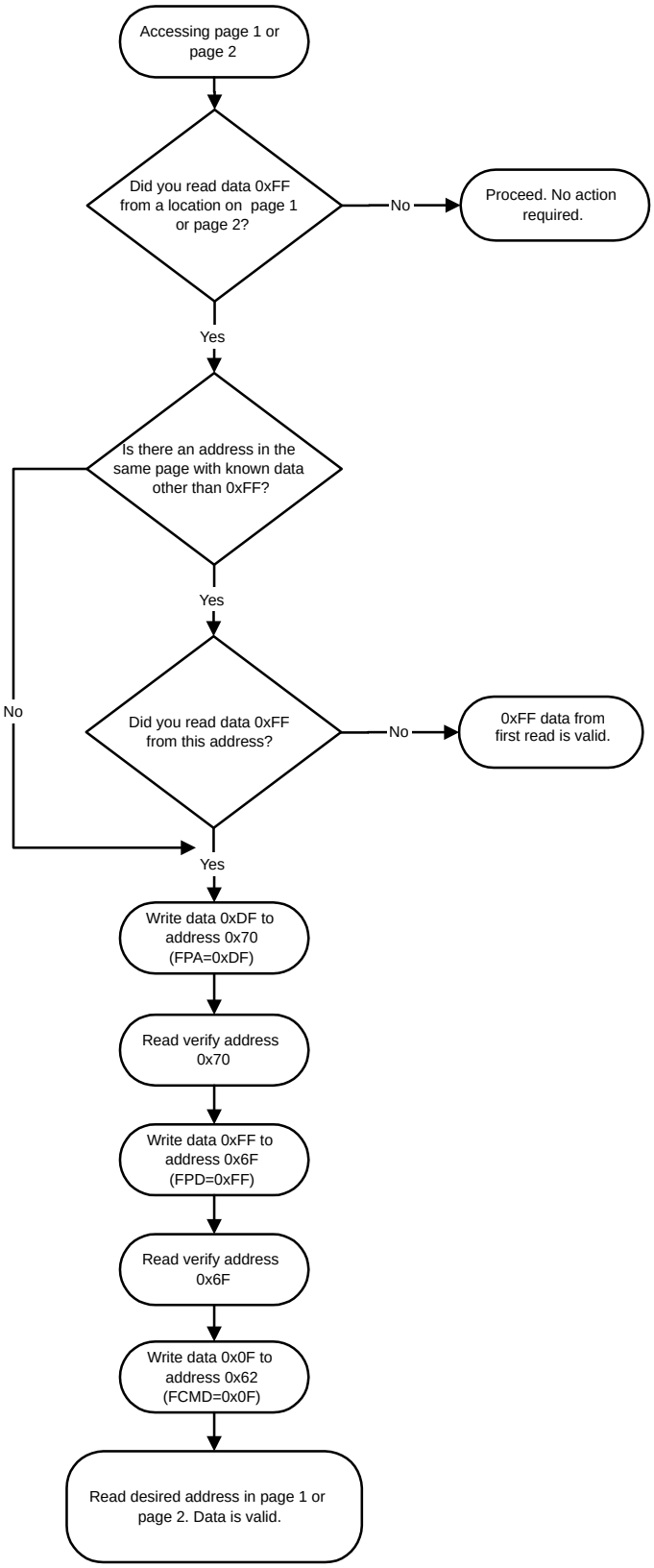


Figure 2. Procedure Flow for Safeguarding Method Number Two

PACKAGING INFORMATION

Orderable Device	Status [1]	Package Type	Package Drawing	Pins	Package Qty	Eco Plan [2]	Lead/Ball Finish	MSL Peak Temp [3]
BQ2019PW	ACTIVE	TSSOP	PW	8	100	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
BQ2019PWG4	ACTIVE	TSSOP	PW	8	100	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
BQ2019PWR	ACTIVE	TSSOP	PW	8	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
BQ2019PWRG4	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:

TAPE AND REEL INFORMATION

*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
BQ2019PWR	TSSOP	PW	8	2000	330.0	12.4	7.0	3.6	1.6	8.0	12.0	Q1

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