◆ 1.2A DCDC1 step-down converter generates system voltage

◆ 1A DCDC2 step-down converter for memory bus

◆ Up to 800mA DCDC3 step down converter generates programmable core voltage

◆ 2x 50mA low dropout voltage regulators for SRAM & PLL supplies

◆ Main battery good indicator

◆ uPower LDO for RTC (VCC_BATT)

◆ Over temperature protection

◆ Serial interface compatible with I2C for LDO and converter control

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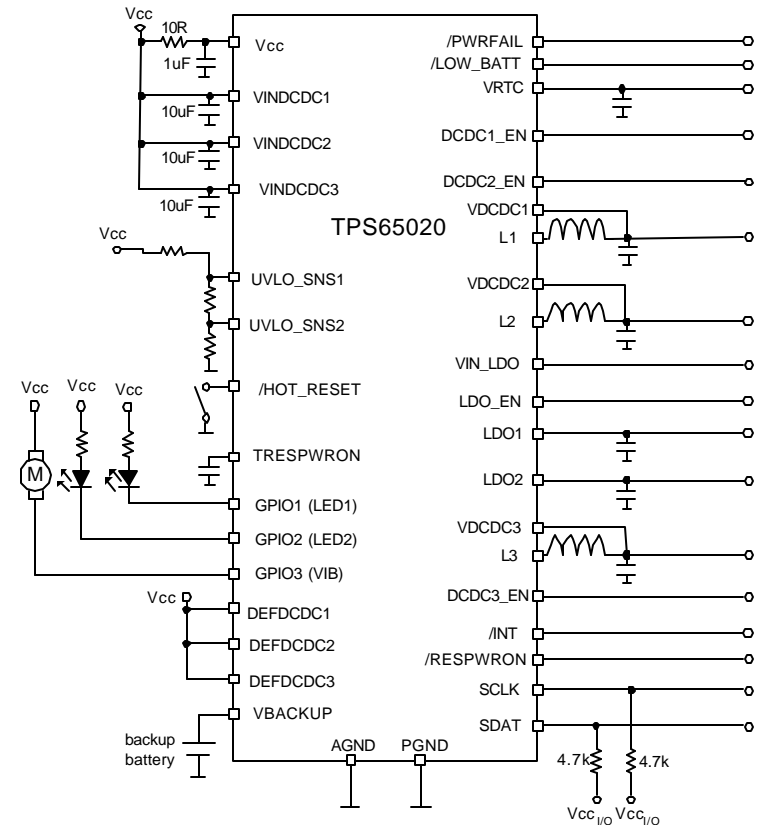
TPS65020 Typical Application #1

Input voltage for DCDC1, DCDC2 and DCDC3 converter
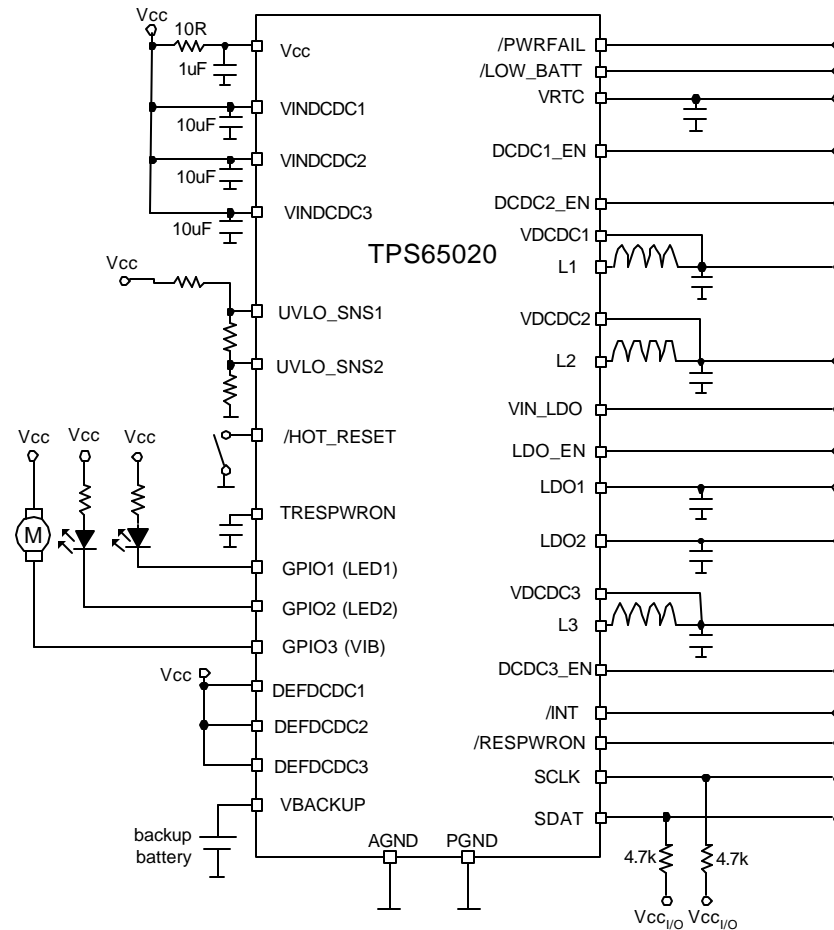
Sense input for low/dead battery detection

User Reset input

Timing capacitor for RESET delay

General purpose outputs for driving LEDs, vibrator, enabling external components

Default voltage setting pins

Backup Battery connection

TPS65020

Vcc
10R
1uF
VINDCDC1
10uF
VINDCDC2
10uF
VINDCDC3
10uF

Vcc

UVLO_SNS1

UVLO_SNS2

/HOT_RESET

TRESPWRON

GPIO1 (LED1)
GPIO2 (LED2)
GPIO3 (VIB)

DEFDCDC1
DEFDCDC2
DEFDCDC3
VBACKUP

backup battery

AGND   PGND

/PWRFAIL
/LOW_BATT
VRTC

DCDC1_EN

DCDC2_EN
VDCDC1
L1

VDCDC2
L2

VIN_LDO
LDO_EN
LDO1

LDO2

VDCDC3
L3
DCDC3_EN
/INT
/RESPWRON
SCLK
SDAT

4.7k   4.7k

$Vcc_{I/O}$ $Vcc_{I/O}$

Dead, low battery outputs

VRTC supports separate upower RTC power plane for xScale VCC_BATT

Enables for DCDC1 and DCDC2 converters

VDCDC1: supplies LDOs & peripheral components

VDCDC2: supplies memory bus & peripheral components, 1.8V/2.5V/adj

Input voltage & enable for LDOs

VLDO1: PLL, 1.3V
VLDO2: SRAM, 1.1V

VDCDC3: 0.85V – 1.6V

DCDC3 converter enable input

System reset and interrupt output for apps processor

Serial interface

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