

### Cold Crank Profile Test

This circuit simulates the behavior of Cold Cranking.

You can check if the current is supplied to the LED even when the battery voltage is low due to cold cranking.

Simulation Setting  
 Type: Time Domain  
 Run Time:60msec

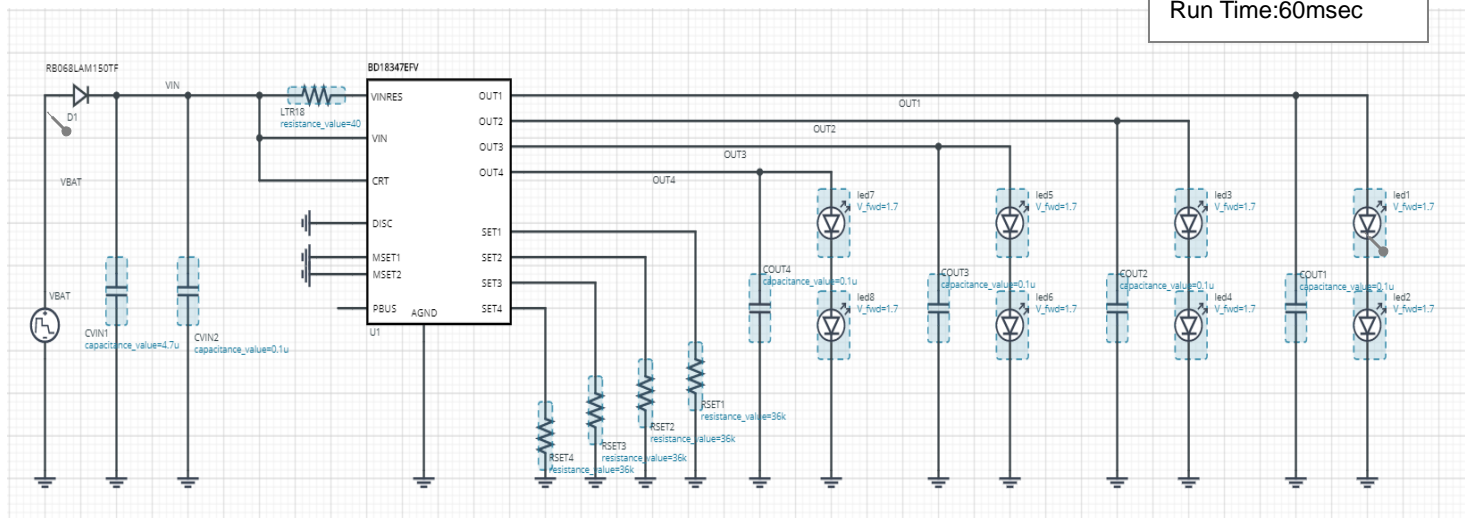


Figure 1. Simulation Schematic

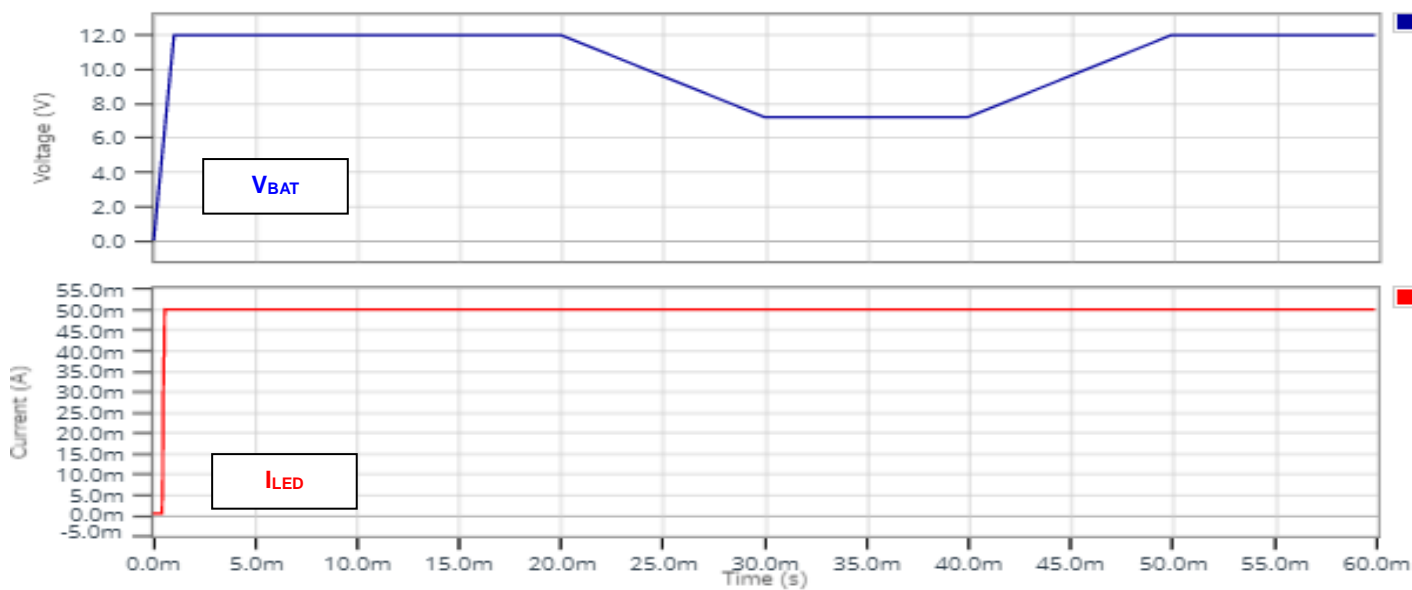


Figure 2. Cold Cranking Profile Test (ROHM Solution Simulator)

Table 1. Characteristics Comparison

Parameter	Simulation Result	Unit	Condition
LED Current	50.0	mA	$V_{BAT}=12V$
	50.0	mA	$V_{BAT}=7.2V$

(Note 1) The above data is based on a specific sample and it is not meant to be a guaranteed value.

(Note 2) These characteristics depend on some dynamic characteristics of external components, input signal speed, PCB pattern and mounting condition of each on-board parts.

### Energy Sharing Control

This circuit simulates the functions of Energy Sharing Control.

In the Energy Sharing Control, an external resistor REXT is inserted between the VIN and VINRES pins, heat of the IC is distributed to the REXT.

**Simulation Setting**  
 Type: Time Domain  
 Run Time: 15msec

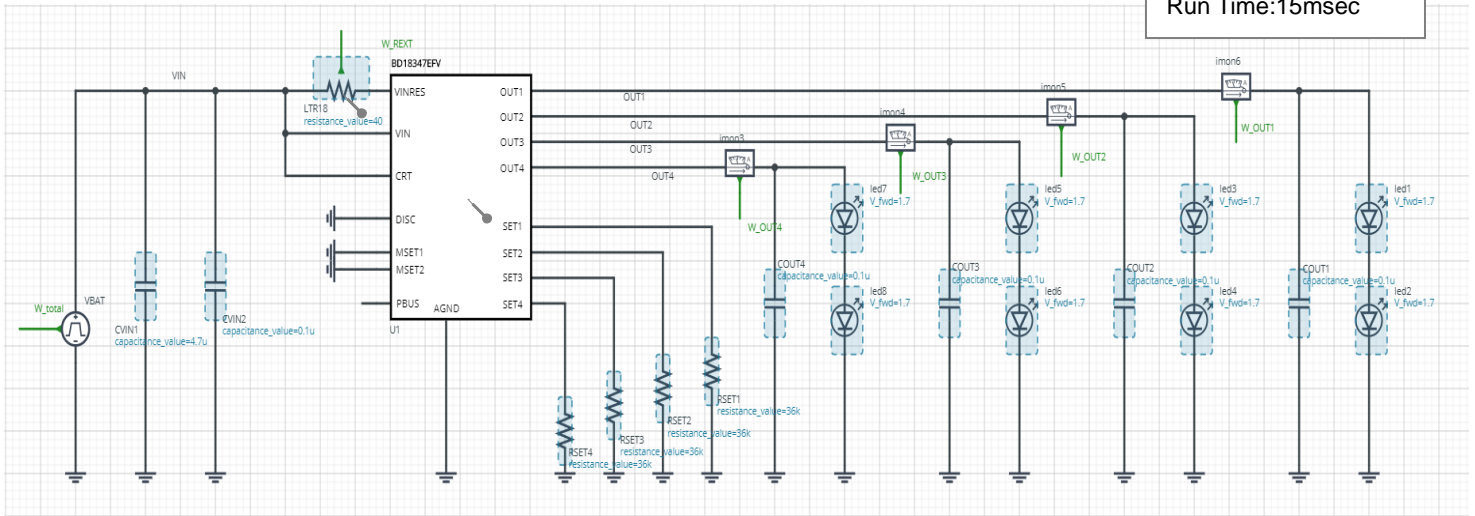


Figure 3. Simulation Schematic

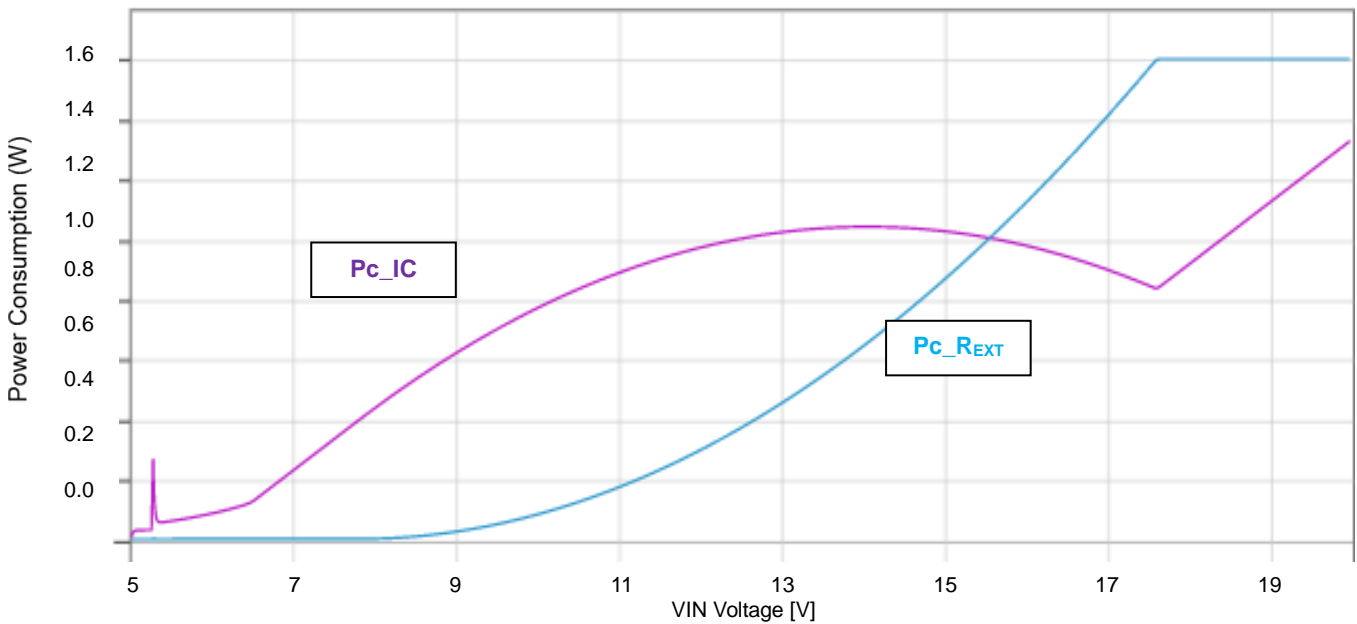


Figure 4. Energy Sharing Control (ROHM Solution Simulator)

Table 2. Characteristics Comparison

Parameter	Simulation Result	Unit	Condition
Pc_IC	1.05	W	VIN=13V, IOUT_TOTAL=200mA, VOUTx(x=1 to 4)=6V, REXT=40Ω
Pc_REXT	0.83	W	

(Note 1) The above data is based on a specific sample and it is not meant to be a guaranteed value.

(Note 2) These characteristics depend on some dynamic characteristics of external components, input signal speed, PCB pattern and mounting condition of each on-board parts.

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