When powering up the TLIN1431x-Q1, V_{CC} must be above UV_{CC} and without any faults. V_{CC} is used to determine the state of several pins that establishes several device functions, such as pin control or SPI control. If a fault, such as V_{CCSC}, is present at power up the device cannot determine the state of these pins. Fault needs to be cleared and power up performed again.

8.3.21 V_{BAT} Voltage Divider

The voltage divider is a reverse polarity protected resistor divider connected to V_{BAT} with fast response times. The divider is based upon the LDO value. For 5 V V_{CC}, the ratio is 1:7. For 3.3 V V_{CC}, the ratio is 1:9. The voltage divider is activated by a high on the DIV_ON pin. The divided output voltage is available on the PV pin for the microcontroller to read. See Table 8-1 for the modes that the DIV_ON functionality is enabled and disabled. When VBAT exceeds 28 V for the 5 V LDO and 20 V for the 3.3 V LDO the voltage is clamped to prevent damage to microcontroller. See Figure 8-9 and Figure 8-10 for the relationship between V_{BAT} and PV output voltage.

Table 8-1. Voltage Divider Functionality Control by Mode

Mode of Operation	DIV_ON	PV Output State
Normal/Fail-Safe/Fast/ Standby	Low	Off
	High	On
Sleep/Pin Init/SPI Init/Restart	Low	Off
	High	Off

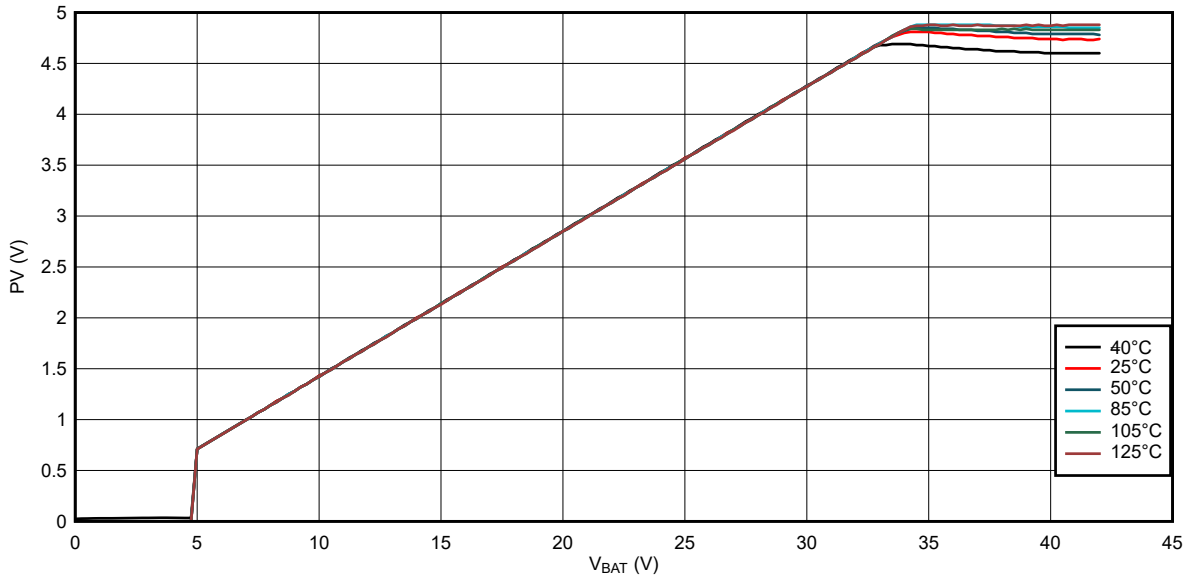

Figure 8-9. V_{BAT} vs PV for TLIN14315RGYQ1 for Different Ambient Temperatures