# $I_{IO}$ Quiescent Current in Standby / Silent Mode

## Errata Description

The SN65HVDA540-Q1, SN65HVDA541-Q1, and SN65HVDA542-Q1 devices exhibit a small window of high quiescent current while in standby / silent mode under the following conditions:

- $V_{CC}$, STB, RXD and TXD pins left floating
- 120Ω resistor between CANH and CANL
- 3.0 to 5.33 volts applied to $V_{IO}$ with respect to GND pin

The leakage current increases for a small window of temperatures, before returning to normal levels. The exact window of high leakage varies from device to device but a typical leakage pattern is as follows:

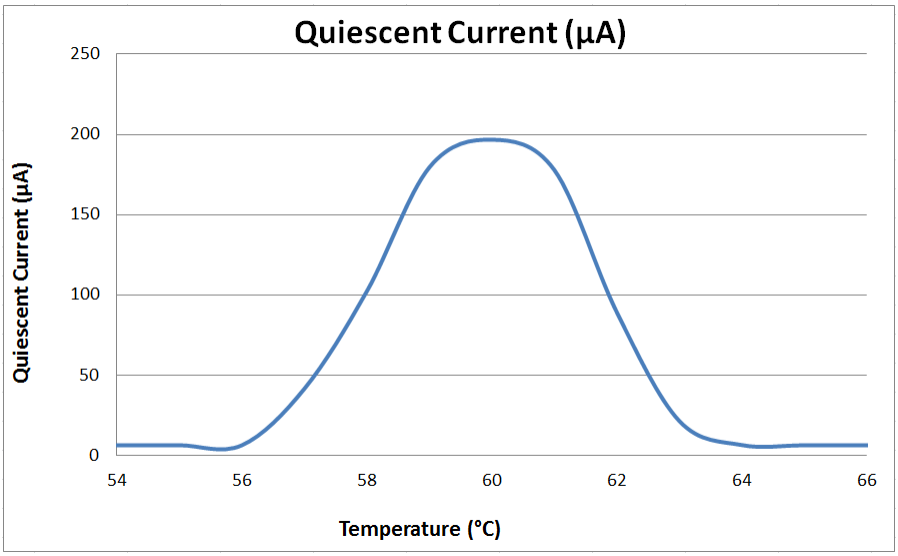


**Figure 1. Typical Quiescent Current Leakage Profile**

## System Impact

The device's low power performance is degraded for a small window of temperatures when supplied by only $V_{IO}$.

## System Workaround

**Workaround 1:**
One option is to allow the high window of leakage. At the peak leakage current, power consumption goes from 23µW ($V_{IO}$ = 3.3V with $I_{IO}$ = 7.0µA) to 683µW ($V_{IO}$ = 3.3V with $I_{IO}$ = 207.0µA). This results in a maximum change in power consumption ~0.66mW for a small window of temperatures.

**Workaround 2:**
A second option is to continue to apply 5.0 volts to $V_{CC}$ while in standby mode. This alleviates the rise in quiescent current. The total power consumption of the device increases from 23µW ($V_{IO}$ = 3.3V with $I_{IO}$ = 7.0µA) to 28µW ($V_{IO}$ = 3.3V with $I_{IO}$ = 7.0µA & $V_{CC}$ = 5.0V with $I_{CC}$ = 1.0µA). This does not include the losses in the system due to the power supply.

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