

FAN3988

USB/Charger and Over-Voltage Detection Device

Features

- Charger/USB Detection Device
- Charger/USB Device Detection Flag
- Over-/Under-Voltage Detection Flag
- V_{BUS} Supply: 2.7 V to 20 V
- C_{ON} of 1.5 pF
- 6-Lead MicroPak MLP Package

Applications

- Mobile Phones
- Handheld Devices

Description

The FAN3988 is a USB-connection-monitoring device used to determine if a standard USB device or a battery-charging device is connected.

The FAN3988 sets the FLAG1 pin to logic HIGH or LOW as an indicator to the system controller that a standard USB device or a charger is connected to the USB port. The FAN3988 also monitors the V_{BUS} for over- or under-voltage conditions. The FLAG2 pin is set LOW if V_{BUS} is less than 3.3 V or greater than 6.0 V.

The FAN3988 is packaged in a very small 6-lead suitable for small board space applications, such as mobile phones.

DC Electrical Characteristics

$T_A = 25^\circ\text{C}$ and $V_{BUS} = 5.0\text{ V}$, unless otherwise noted.

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
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Typical Performance Characteristics

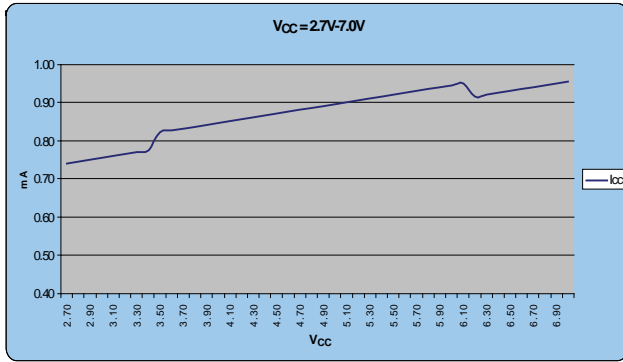


Figure 3. I_{Bus} vs. V_{Bus} (2.7 V-7.0 V) No Load

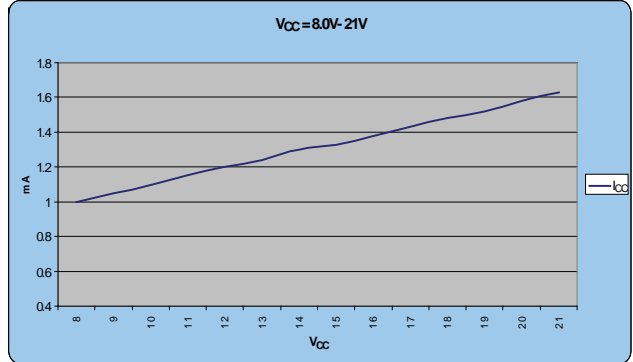


Figure 4. I_{Bus} vs. V_{Bus} (8.0V-21 V) No Load

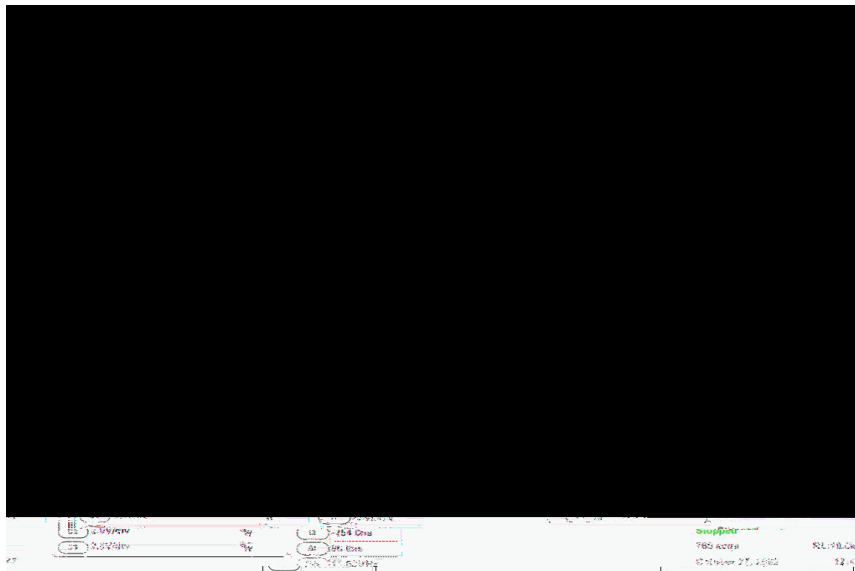


Figure 5. No Fault on Flag 1, Skew=65 ns

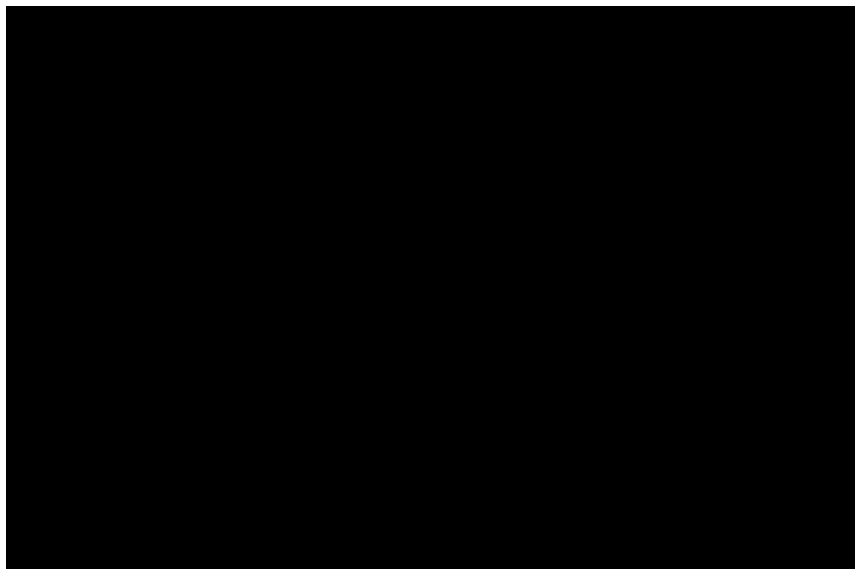


Figure 6. PC Data Running D+/D- (Flag 1 and Flag 2 at Correct Levels)

Application Information

Figure 7. Typical Application System with USB Transceiver

Without USB Transceiver (Figure 8)

The FAN3988 sets the FLAG1 pin to logic HIGH or LOW as an indicator to the system controller that a standard USB device or a charger is connected to the USB port. The FAN3988 also monitors the V_{BUS} for over- or under-voltage conditions. The FLAG2 pin is set LOW if V_{BUS} is less than 3.3 V or greater than 6.0 V.

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