FAIRCHILD SEMICONDUCTOR®

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FPF3003
IntelliMAX™ Full Functional Input Power Path Management Switch for Dual-Battery Portable System

Features

- 2.3V to 5.5V Input Voltage Operating Range
- Low R_{ON} between Battery and Load
  Maximum 50mΩ at V_{IN} = 4.2V
- Low R_{ON} between Charger and Battery
  Maximum 125mΩ at V_{IN} = 4.2V
- Maximum DC Current for Load Switch: 2.5A
- Maximum DC Current for Charge Switch: 1.5A
- Slew Rate Controlled to 30µs Nominal Rise Time
- Seamless Break-Before-Make Transition
- Quiescent Current: 30µA Typical
- Thermal Shutdown
- Reverse Current Blocking (RCB) between Battery A and Battery B
- RESET Timer Delay: 7s Typical
- ESD Protected:
  - Human Body Model: >2.5kV
  - Charged Device Model: >1.5kV
  - IEC 61000-4-2 Air Discharge: >15kV
  - IEC 61000-4-2 Contact Discharge: >8kV
- 1.6mm X 1.6mm, 16-Bump, 0.4mm Pitch, WLCSP

Applications

- Dual-Battery Cell phone
- Dual-Battery Portable Equipment

Description

The FPF3003 is a single-chip solution for dual-battery power-path switching, including integrated P-channel switches and analog control features. The input voltage range operates from 2.3V to 5.5V. The device selects one of two batteries to provide power to the system, enabling one battery to be charged by the external battery charger.

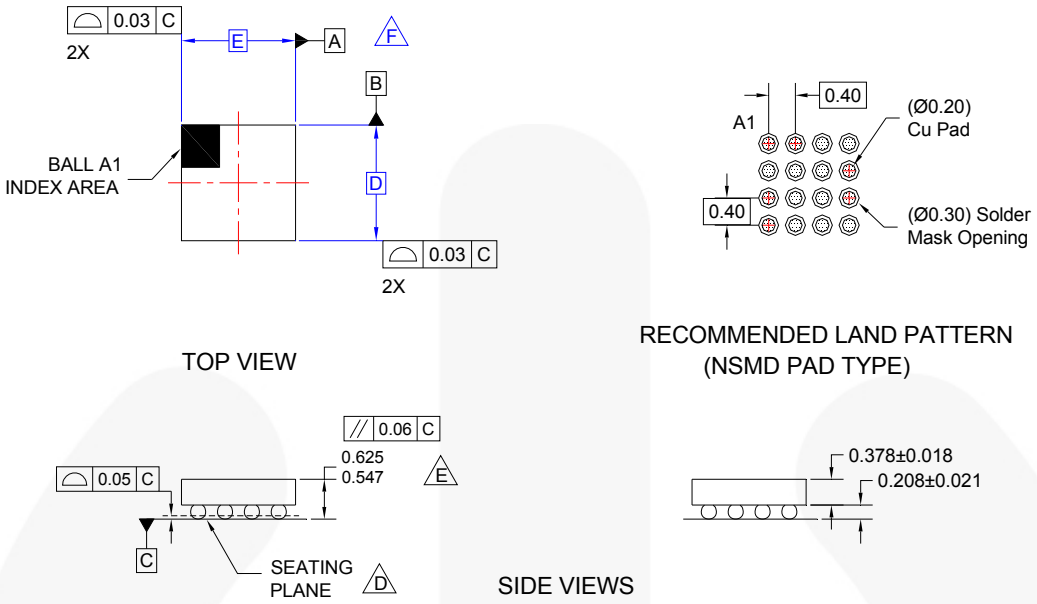
The FPF3003 has battery voltage monitoring to determine if the battery is under voltage. Special driver and digital circuitry allows the device to switch quickly between battery A and battery B, which allows hot swapping of battery packs. Maximum current from battery to load per channel is limited to a constant 2.5A and internal thermal shutdown circuits protect the part during fault conditions.

The FPF3003 is available in a 1.6mm x 1.6mm, 16-bump, Wafer-Level Chip-Scale Package (WLCSP).

Ordering Information

Part Number	Top Mark	(Charger-Battery) Max. R_{ON} at 4.2V_{IN}	(Battery-Load) Max. R_{ON} at 4.2V_{IN}	Typical t_R	Package
FPF3003UCX	QW	125mΩ	50mΩ	30µs	16-Bump, 0.4mm Pitch, 1.6mm x 1.6mm WLCSP

Packaging Information



NOTES:

A. NO JEDEC REGISTRATION APPLIES.

B. DIMENSIONS ARE IN MILLIMETERS.

C. DIMENSIONS AND TOLERANCE PER ASME Y14.5M, 1994.

D. DATUM C IS DEFINED BY THE SPHERICAL CROWNS OF THE BALLS.

E. PACKAGE NOMINAL HEIGHT IS 586 MICRONS ±39 MICRONS (547-625 MICRONS).

F. FOR DIMENSIONS D, E, X, AND Y SEE PRODUCT DATASHEET.

G. DRAWING FILNAME: MKT-UC016AArev2.

Figure 38. 1.6mmx1.6mm WLCSP, 16-Bumps 0.4mm Pitch

Product-Specific Dimensions

Product	D	E	X	Y
FPF3003UCX	1560µm ±30µm	1560µm ±30µm	180µm	180µm

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