FAIRCHILD SEMICONDUCTOR®

LIMITED DATASHEET

Email Analog.Switch@fairchildsemi.com to request the full datasheet.

February 2013

FPF1048

IntelliMAX™ 3 A-Capable, Slew-Rate-Controlled Load Switch with True Reverse Current Blocking

Features

- Input Voltage Operating Range: 1.5 V to 5.5 V
- Typical $R_{DS(ON)}$:
  - 21 mΩ at V_{IN}=5.5 V
  - 23 mΩ at V_{IN}=4.5 V
  - 41 mΩ at V_{IN}=1.8 V
  - 90 mΩ at V_{IN}=1.5 V
- Slew Rate/Inrush Control with t_R: 2.7 ms (Typ.)
- 3 A Maximum Continuous Current Capability
- Low Off Switch Current: <1 µA
- True Reverse Current Blocking (TRCB)
- Logic CMOS IO Meets JESD76 Standard for GPIO Interface and Related Power Supply Requirements
- ESD Protected:
  - Human Body Model: >8 kV
  - Charged Device Model: >1.5 kV
  - IEC 61000-4-2 Air Discharge: >15 kV
  - IEC 61000-4-2 Contact Discharge: >8 kV

Applications

- Smart Phones, Tablet PCs
- Storage, DSLR, and Portable Devices

Description

The FPF1048 advanced load management switch targets applications requiring a highly integrated solution. It disconnects loads powered from the DC power rail (<6 V) with stringent off-state current targets and high load capacitances (up to 100 µF). The FPF1048 consists of slew-rate controlled low-impedance MOSFET switch (23 mΩ typical) and integrated analog features. The slew-rate controlled turn-on characteristic prevents inrush current and the resulting excessive voltage droop on power rails.

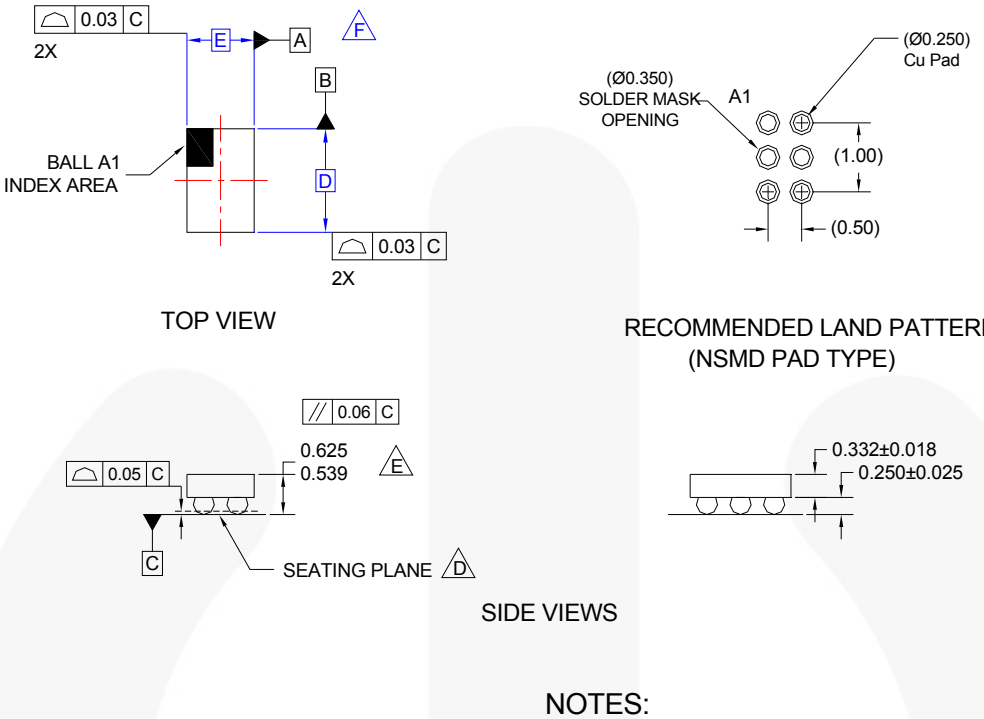
The FPF1048 has a True Reverse Current Blocking (TRCB) function that obstructs unwanted reverse current from V_{OUT} to V_{IN} during both ON and OFF states. The exceptionally low off-state current drain (<1µA maximum) facilitates compliance with standby power requirements. The input voltage range operates from 1.5 V to 5.5 V_{DC} to support a wide range of applications in consumer, optical, medical, storage, portable, and industrial-device power management. Switch control is managed by a logic input (active HIGH) capable of interfacing directly with low-voltage control signal / General-Purpose Input / Output (GPIO) without an external pull-down resistor.

The device is packaged in advanced, fully “green” compliant, 1.0 mm x 1.5 mm, Wafer-Level Chip-Scale Package (WLCSP) with backside lamination.

Ordering Information

Part Number	Top Mark	Switch R_{ON} (Typical) at 4.5V_{IN}	Input Buffer	Output Discharge	ON Pin Activity	t_R	Package
FPF1048BUCX	RA	23 mΩ	CMOS	NA	Active HIGH	2.7 ms	6-Ball, WLCSP with Backside Laminate, 2x3 Array, 0.5 mm Pitch, 300 µm Balls

Physical Dimensions



NOTES:

A. NO JEDEC REGISTRATION APPLIES.

B. DIMENSIONS ARE IN MILLIMETERS.

C. DIMENSIONS AND TOLERANCE PER ASMEY14.5M, 1994.

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

E. PACKAGE NOMINAL HEIGHT IS 582 MICRONS ±43 MICRONS (539-625 MICRONS).

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

G. DRAWING FILNAME: MKT-UC006AFrev2.

Figure 29. 6-Ball WLCSP, 2x3 Array, 0.5 mm Pitch, 300 µm Ball

Product-Specific Dimensions

Product	D	E	X	Y
FPF1048BUCX	1460 µm ±30 µm	960 µm ±30 µm	230 µm	230 µm

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