FAIRCHILD
SEMICONDUCTOR®

LIMITED DATASHEET

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FPF1038
Low On-Resistance, Slew-Rat e-Controlled Load Switch

Features

1.2 V to 5.5 V Input Voltage Operating Range

Typical R_{ON}:

- 20 m at V_{IN}=5.5 V
- 21 m at V_{IN}=4.5 V
- 37 m at V_{IN}=1.8 V
- 75 m at V_{IN}=1.2 V

Slew Rate / Inrush Control with t_R: 2.7 ms (Typical)

3 A Maximum Continuous Current Capability

Low <1 µA Shutdown Current

ESD Protected: Above 8 kV HBM, 1.5 kV CDM

GPIO / CMOS-Compatible Enable Circuitry

Applications

HDD, Storage, and Solid-State Memory Devices

Portable Media Devices, UMPC, Tablets, MIDs

Wireless LAN Cards and Modules

SLR Digital Cameras

Portable Medical Devices

GPS and Navigation Equipment

Industrial Handheld and Enterprise Equipment

Description

The FPF1038 advanced load-management switch target applications requiring a highly integrated solution for disconnecting loads powered from DC power rail (<6 V) with stringent shutdown current targets and high load capacitances (up to 200 µF). The FPF1038 consists of slew-rate controlled low-impedance MOSFET switch (21 m typical) and other integrated analog features. The slew-rate controlled turn-on characteristic prevents inrush current and the resulting excessive voltage droop on power rails.

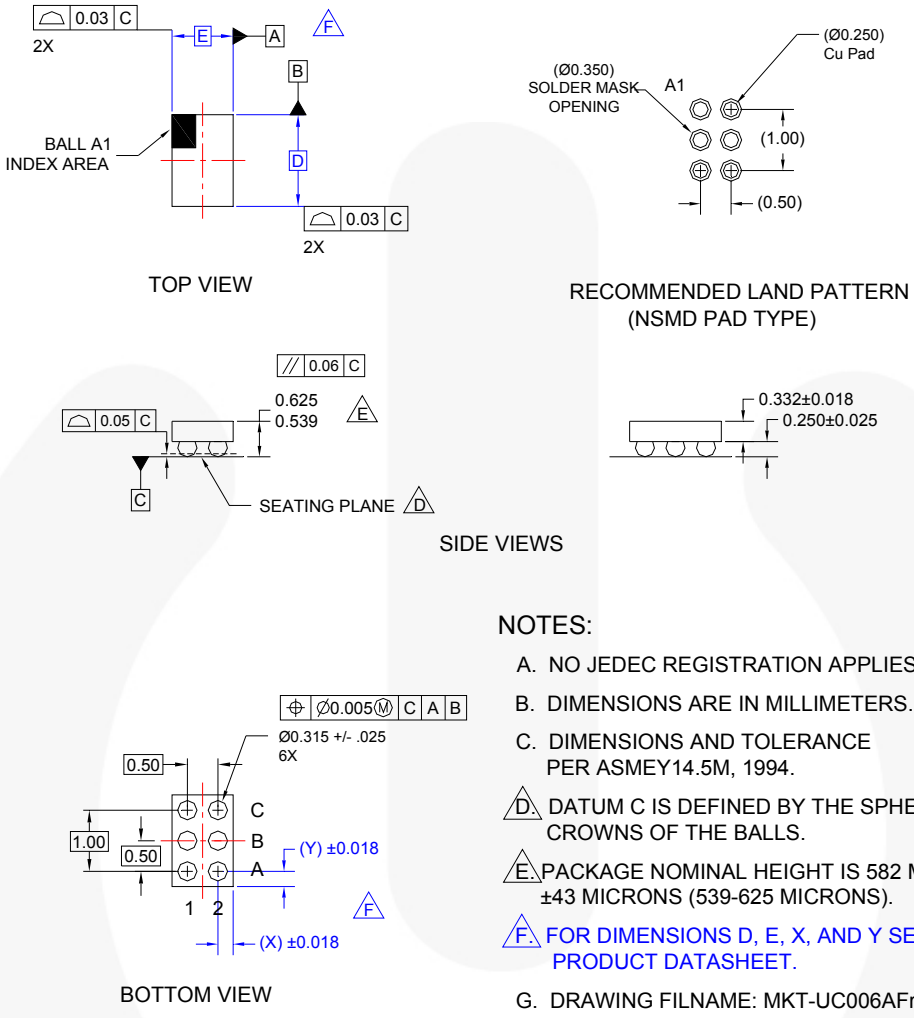
These devices have exceptionally low shutdown current drain (<1 µA maximum) that facilitates compliance in low standby power applications. The input voltage range operates from 1.2 V to 5.5 V DC to support a wide range of applications in consumer, optical, medical, storage, portable, and industrial device power management.

Switch control is managed by a logic input (active HIGH) capable of interfacing directly with low-voltage control signal / GPIO with no external pull-up required. The device is packaged in advanced fully green 1mm x1.5 mm Wafer-Level Chip-Scale Packaging (WLCSP); providing excellent thermal conductivity, small footprint, and low electrical resistance for wider application usage.

Ordering Information

Part Number	Top Mark	Switch R_{ON} (Typical) at 4.5 V_{IN}	Input Buffer	Output Discharge	ON Pin Activity	t_R	Package
FPF1038UCX	QE	21 m	CMOS	NA	Active HIGH	2.7 ms	6-Bump, WLCSP, 1.0 mm x 1.5 mm, 0.5 mm Pitch

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 30. 6 Ball, 1.0 x 1.5 mm Wafer-Level Chip-Scale Packaging (WLCSP)

Nominal Values

Bump Pitch	Overall Package Height	Silicon Thickness	Solder Bump Height	Solder Bump Diameter
0.5 mm	0.582 mm	0.332 mm	0.250 mm	0.315 mm

Product-Specific Dimensions

Product	D	E	X	Y
FPF1038UCX	1.5 mm ±0.03	1.0 mm ±0.03	0.240 mm	0.240 mm

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