



LIMITED DATASHEET

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



FPF1039 Low On-Resistance, Slew-Rate-Controlled Load Switch

Features

- 1.2 V to 5.5 V Input Voltage Operating Range
- Typical R_{ON} :
 - 20 m Ω at $V_{IN}=5.5$ V
 - 21 m Ω at $V_{IN}=4.5$ V
 - 37 m Ω at $V_{IN}=1.8$ V
 - 75 m Ω at $V_{IN}=1.2$ V
- Slew Rate / Inrush Control with t_R : 2.7 ms (Typical)
- 3.5 A Maximum Continuous Current Capability
- Output Capacitor Discharge Function
- Low <1 μ A 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 FPF1039 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 μ F). The FPF1039 consists of slew-rate controlled low-impedance MOSFET switch (21 m Ω 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.

This device has exceptionally low shutdown current drain (<1 μ A 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
FPF1039UCX	QF	21 m Ω	CMOS	65 Ω	Active HIGH	2.7 ms	6-Bump, WLCSP, 1.0 mm x 1.5 mm, 0.5 mm Pitch
FPF1039BUCX	QF	21 m Ω	CMOS	65 Ω	Active HIGH	2.7 ms	6-Bump, WLCSP with Backside Laminate, 1.0 mm x 1.5 mm, 0.5 mm Pitch

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

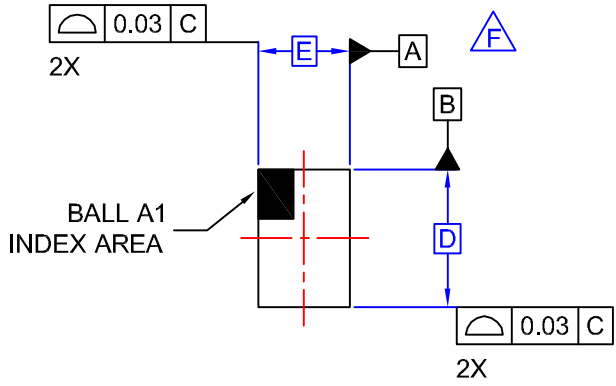
Product	D	E	X	Y
FPF1039UCX	1.46 mm \pm 0.03	0.96 mm \pm 0.03	0.230 mm	0.230 mm
FPF1039BUCX	1.46 mm \pm 0.03	0.96 mm \pm 0.03	0.230 mm	0.230 mm

Package drawings are provided as a service to customers considering Fairchild components. Drawings may change in any manner without notice. Please note the revision and/or date on the drawing and contact a Fairchild Semiconductor representative to verify or obtain the most recent revision. Package specifications do not expand the terms of Fairchild's worldwide terms and conditions, specifically the warranty therein, which covers Fairchild products.

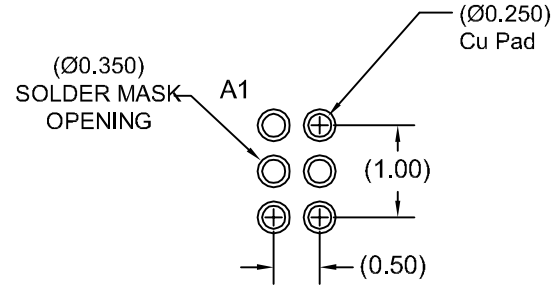
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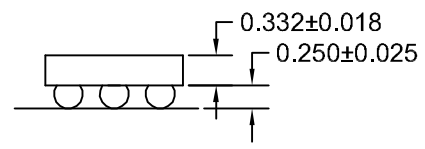
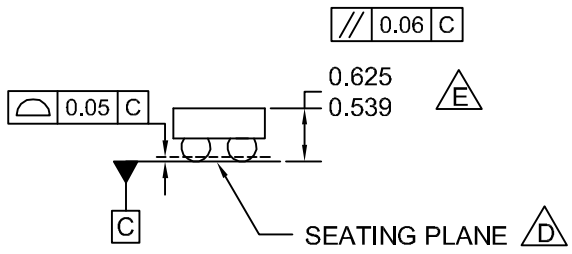
REVISIONS			
REV	DESCRIPTION	DATE	APP'D / SITE
1	Initial drawing release.	4-1-08	L. England / FSME
2	General updates for drawing standardization.	10-19-09	L. England / FSME



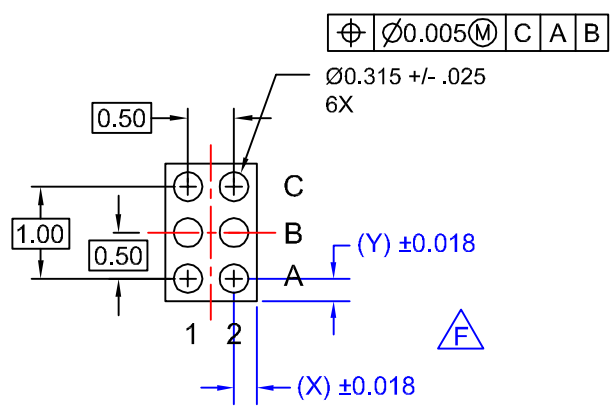
TOP VIEW



RECOMMENDED LAND PATTERN (NSMD PAD TYPE)



SIDE VIEWS



BOTTOM VIEW

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.

APPROVALS	DATE	FAIRCHILD SEMICONDUCTOR™			
DRAWN L. England	10-19-09	6BALL WLCSP, 2X3 ARRAY 0.5MM PITCH, 300UM BALL			
DFTG. CHK. E. Shacham	10-19-09				
ENGR. CHK.					
		SCALE N/A	SIZE N/A	DRAWING NUMBER MKT-UC006AF	REV 2
		DO NOT SCALE DRAWING		SHEET 1 of 1	



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