



# FPF1203 / FPF1203L / FPF1204 / FPF12045

## IntelliMAX™ Ultra-Small, Slew-Rate-Controlled Load Switch

### Features

- 1.2 V to 5.5 V Input Voltage Operating Range
- Typical  $R_{ON}$ :
  - 45 m $\Omega$  at  $V_{IN}=5.5$  V
  - 55 m $\Omega$  at  $V_{IN}=3.3$  V
  - 90 m $\Omega$  at  $V_{IN}=1.8$  V
  - 185 m $\Omega$  at  $V_{IN}=1.2$  V
- Slew Rate Control with  $t_R$ :
  - FPF1203/FPF1203L/FPF1204: 100  $\mu$ s
  - FPF12045: 2  $\mu$ s
- Output Discharge Function on FPF1204 / 45
- Low <1.5  $\mu$ A Quiescent Current
- ESD Protected: Above 7 kV HBM, 2 kV CDM
- GPIO / CMOS-Compatible Enable Circuitry
- 4-Bump, WLCSP 0.76 mm x 0.76 mm, 0.4 mm Pitch

### Applications

- Mobile Devices and Smart Phones
- Portable Media Devices
- Tablet PCs
- Advanced Notebook, UMPC, MID
- Portable Medical Devices
- GPS and Navigation Equipment

### Description

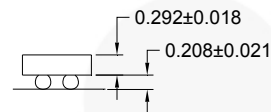
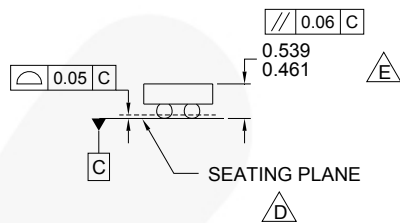
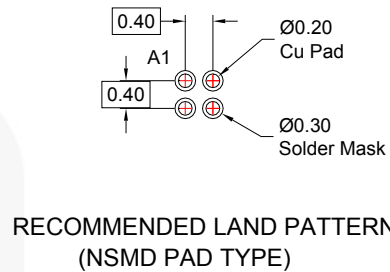
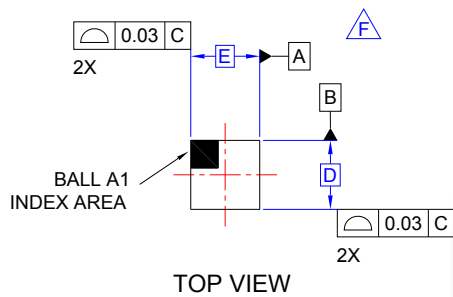
The FPF1203 / 03L / 04 / 45 are ultra-small integrated IntelliMAX™ load switches with integrated P-channel switch and analog control features. Integrated slew-rate control prevents inrush current and the resulting excessive voltage drop on the power rail. The input voltage range operates from 1.2 V to 5.5 V to provide power-disconnect capability for post-regulated power rails in portable and consumer products. The low shut-off current of 1  $\mu$ A (maximum) allows power designs to meet standby and off-power drain specifications.

The FPF1203 / 03L / 04 / 45 are controlled by a logic input (ON pin) compatible with standard CMOS GPIO circuitry found on Field Programmable Gate Array (FPGA) embedded processors. The FPF1203 / 03L / 04 / 45 are available in 0.76 mm x 0.76 mm 4-bump WLCSP.

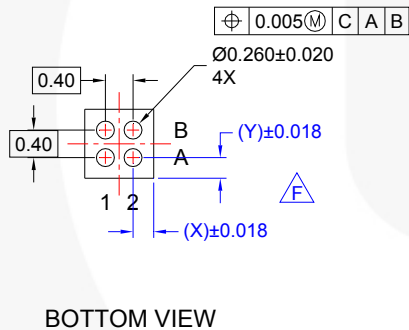
### Ordering Information

Part Number	Top Mark	Switch (Typical) at 3.3V <sub>IN</sub>	Output Discharge	ON Pin Activity	t <sub>R</sub>	Package
FPF1203UCX	QL	55 m $\Omega$	NA	Active HIGH	100 $\mu$ s	4-Bump, Wafer-Level Chip-Scale Package (WLCSP), 0.76 mm x 0.76 mm, 0.4 mm Pitch
FPF1204UCX	QM	55 m $\Omega$	65 $\Omega$	Active HIGH	100 $\mu$ s	
FPF1204BUCX (Backside Laminate)	QM	55 m $\Omega$	65 $\Omega$	Active HIGH	100 $\mu$ s	
FPF12045UCX	NC	55 m $\Omega$	65 $\Omega$	Active HIGH	2 $\mu$ s	
FPF1203LUCX (Preliminary)	QP	55 m $\Omega$	n/a	Active LOW	100 $\mu$ s	

## Physical Dimensions



SIDE VIEWS



BOTTOM VIEW

### 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 500 MICRONS ±39 MICRONS (461-539 MICRONS).
- F. FOR DIMENSIONS D, E, X, AND Y SEE PRODUCT DATASHEET.
- G. DRAWING FILNAME: MKT-UC004AFrev1.

Figure 24. 4-Bump, 0.76 x 0.76 mm, Wafer-Level Chip-Scale Packaging

### Product-Specific Dimensions

Product	D	E	X	Y
FPF1203UCX	760 μm ± 30 μm	760 μm ± 30 μm	0.180 mm ± 0.018 μm	0.180 mm ± 0.018 μm
FPF1204UCX	760 μm ± 30 μm	760 μm ± 30 μm	0.180 mm ± 0.018 μm	0.180 mm ± 0.018 μm
FPF1204BUCX	760 μm ± 30 μm	760 μm ± 30 μm	0.180 mm ± 0.018 μm	0.180 mm ± 0.018 μm
FPF12045UCX	760 μm ± 30 μm	760 μm ± 30 μm	0.180 mm ± 0.018 μm	0.180 mm ± 0.018 μm
FPF1203LUCX	760 μm ± 30 μm	760 μm ± 30 μm	0.180 mm ± 0.018 μm	0.180 mm ± 0.018 μm




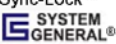
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