



# 0.13μm High Performance High Density Standard Cells - FSC0H\_D Core Cell

## Key Features

- UMC's "0.13μm 1.2V/3.3V HS/FSG/L130E Logic Process"
- Raw gate density: 250,000 gates/mm<sup>2</sup> offers high density needed for low cost applications
- Wide drive strength range and optimized P/N ratio for performance.
- Complete set of models for industry-standard EDA tools.
- Support arithmetic cells for data-path designs.
- Full set of gated clock buffers for power saving.
- Each cell has at least one sub / well contact
- Flexible row abutment
- Built-in decoupling capacitance to aid IR drop in filler cells

## General Description

This library is tailored for UMC's 0.13μm 1.2V/3.3V HS/L130E Logic Process. It is especially suitable for high performance / high density applications. The 8-track (3.2μm) cell height along with a wide selection of drive strengths enable customers to implement high performance designs with smallest area. To maximize yield, Faraday ensures all cells have no bent-gate transistors. This library can be customized to provide new cells for customers, following Faraday's internal evaluation procedures.

## Quick Reference

	Characteristic	Description
<b>Physical</b>	Process	UMC 0.13um 1.2V/3.3V 1P8M HS Logic Process
	Drawn Gate Length	0.12μm
	Gate Density	250,000 gates/mm <sup>2</sup>
	Core Cell Height	3.2μm (8-track)
	Vertical / Horizontal Routing Grid	0.4μm / 0.4μm
	Power / ground rail width	0.56μm
	Layout resolution	0.01μm
<b>Electrical</b>	Recommended Operating Conditions	Power Supply Voltage: 1.08V to 1.32V Junction Temperature: -40°C ~ 125°C
	Speed	Td = 19.8ps/stage (Measured from 101-stage NAND2 ring for typical process at 1.2V and 25°C)
	Power Consumption	6nW / MHz / gate (Measured from NAND2 chain, output load = 2 INVERTER in typical process and operated under 1.2V, 25°C)
	Drive Strengths Level	Up to 12 (Depending on cell)

### HEADQUARTERS

Hsinchu, Taiwan,  
Tel: 886-3-578-7888  
Fax: 886-3-578-7889  
sales@faraday.com.tw

### USA OFFICE

Sunnyvale, USA  
Tel: 1-408-522-8888  
Fax: 1-408-522-8889  
sales@faraday-usa.com

### EUROPE OFFICE

Hoofddorp, Netherlands  
Tel: 31-2356-20496  
Fax: 31-2356-36297  
eusales@faraday.com.tw

### JAPAN OFFICE

Tokyo, Japan  
Tel: 81-3-5214-0070  
Fax: 81-3-5214-0076  
sales@faraday.co.jp

### CHINA OFFICE

Shanghai, P. R. China  
Tel: 86-21-6406-7523  
Fax: 86-21-6406-5327  
sales@faraday.com.cn