

## 2.5 V CRYSTAL OSCILLATOR I/O CELLS

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## Key Features

- UMC 90 nm logic LL-RVT (low-K) process
- High frequency oscillator pad range:  
1 MHz ~ 66 MHz
- Low frequency oscillator pad range:  
32 KHz ~ 1 MHz
- Programmable output driving capability
- Oscillation/power-down  
(stop)/tri-state/parallel models
- Internal feedback resistance
- Built-in antenna diodes for all the pins
- Silicon proven ESD robustness and  
latch-up immunity

## General Description

The FSD0K\_A library is tailored for UMC's 90 nm logic LL-RVT (low-K) process. All the cells have been designed as programmable crystal oscillator I/O cells. Two layout structures, both optimized for pad-/core-limited designs, are available to support the programmable features and functions.

## Quick Reference

Characteristic		Description
Physical	Process	UMC 90 nm logic LL-RVT (low-K) process
	Cell width * cell height	134.4 $\mu$ m * 227.92 $\mu$ m (staggered) 241.92 $\mu$ m * 142.8 $\mu$ m (inline)
	Cell layout metal	M1, M2, M3
	Power ring metal	M4 and above
	Layout resolution	0.005 $\mu$ m
Electrical	Recommended operating condition	Power supply voltage Core: 1.08 V ~ 1.32 V I/O: 2.25 V ~ 2.75 V Junction temperature: -40 $^{\circ}$ C ~ 125 $^{\circ}$ C
	Frequency	High frequency oscillator pad: 1 MHz ~ 66 MHz Low frequency oscillator pad: 32 kHz ~ 1 MHz
	Input threshold	CMOS



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