# SiT8103 High Performance 1-110 MHz Oscillator



## **Pin Description Tables**

Pin #1 Functionality				
OE				
H or Open <sup>[2]</sup> : specified frequency output				
L: output is high impedance				
ST				
H or Open: specified frequency output				
L: output is low level (weak pull down). Oscillation stops				

Pin Map				
Pin	Connection			
1	OE/ST			
2	GND			
3	CLK			
4	VDD			

## **Absolute Maximum Table**

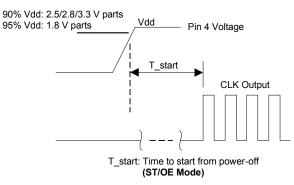
Attempted operation outside the absolute maximum ratings of the part may cause permanent damage to the part. Actual performance of the IC is only guaranteed within the operational specifications, not at absolute maximum ratings.

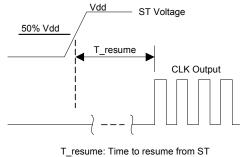
Parameter	Min.	Max.	Unit
Storage Temperature	-65	150	°C
VDD	-0.5	4	V
Electrostatic Discharge	-	6000	V
Theta JA (with copper plane on VDD and GND)	-	75	°C/W
Theta JC (with PCB traces of 0.010 inch to all pins)	-	24	°C/W
Soldering Temperature (follow standard Pb free soldering guidelines)	-	260	°C
Number of Program Writes	-	1	NA
Program Retention over -40 to 125°C, Process, VDD (0 to 3.65 V)	1,000+	-	years

# **Environmental Compliance**

Parameter	Condition/Test Method		
Mechanical Shock	MIL-STD-883F, Method 2002		
Mechanical Vibration	MIL-STD-883F, Method 2007		
Temperature Cycle	JESD22, Method A104		
Solderability	MIL-STD-883F, Method 2003		
Moisture Sensitivity Level	MSL1 @ 260°C		

## Startup and Resume Timing Diagram





(ST Mode Only)

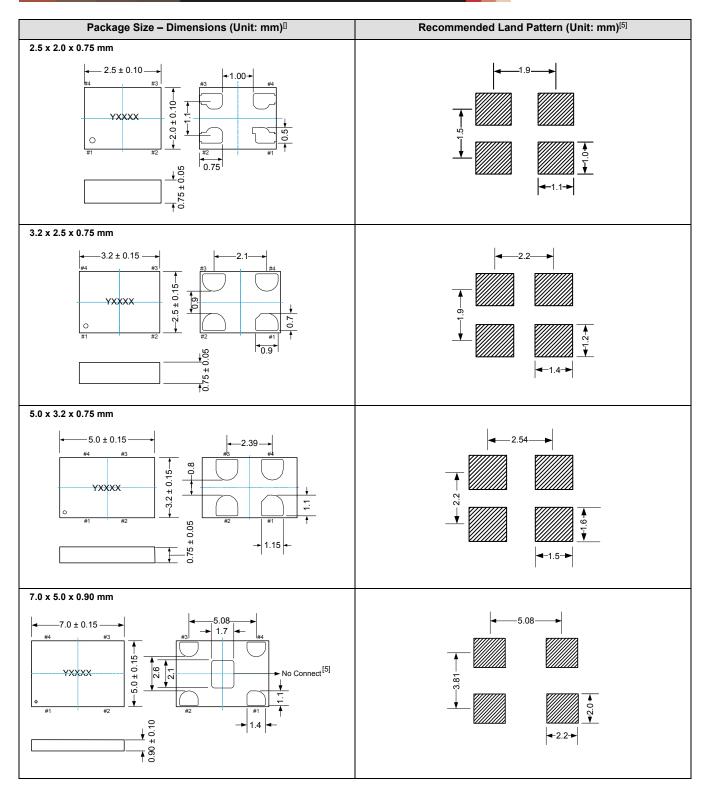
#### Note:

2. In 1.8 V mode, a resistor of <100 k $\Omega$  between OE pin and VDD is required.

Dimensions and Land Patterns

**SiT8103** High Performance 1-110 MHz Oscillator





Notes:

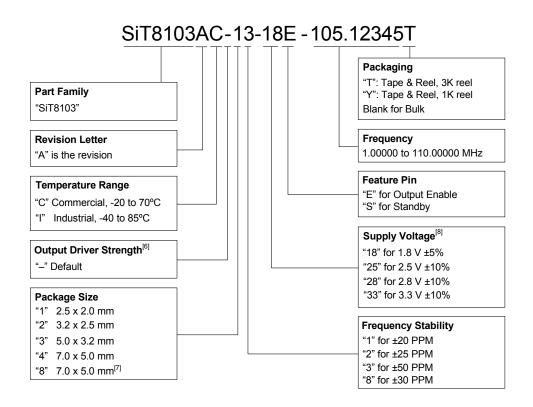
Top marking: Y denotes manufacturing origin and XXXX denotes manufacturing lot number. The value of "Y" will depend on the assembly location of the device
A capacitor of value 0.1 μF between Vdd and GND is recommended.
The 7050 package with part number designation "-8" has NO center pad.

Downloaded from Arrow.com.



## Part No. Guide - How to Order

The Part No. Guide is for reference only. For real-time customization and exact part number, use the SiTime Part Number Generator.



#### Notes:

Contact SiTime for different drive strength options for driving loads with faster rise/fall time spec than those shown in the electrical table, or reducing EMI.
Without Center Pad.

8. Supply voltage can be configured to any voltage up to 1 decimal place between 2.5V and 3.3V.

## Frequency Stability vs. Temperature Range Options

Frequency	Temperature	Supply Voltage			
Stability (PPM)			2.5 V	2.8 V	3.3 V
100	C (-20 to +70°C)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
±20	l (-40 to +85°C)	-	_	-	-
±25	C (-20 to +70°C) I (-40 to +85°C)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
±30	C (-20 to +70°C) I (-40 to +85°C)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
±50	C (-20 to +70°C) I (-40 to +85°C)	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$

© SiTime Corporation 2011. The information contained herein is subject to change at any time without notice. SiTime assumes no responsibility or liability for any loss, damage or defect of a Product which is caused in whole or in part by (i) use of any circuitry other than circuitry embodied in a SiTime product, (ii) misuse or abuse including static discharge, neglect or accident, (iii) unauthorized modification or repairs which have been soldered or altered during assembly and are not capable of being tested by SiTime under its normal test conditions, or (iv) improper installation, storage, handling, warehousing or transportation, or (v) being subjected to unusual physical, thermal, or electrical stress.

Disclaimer: SiTime makes no warranty of any kind, express or implied, with regard to this material, and specifically disclaims any and all express or implied warranties, either in fact or by operation of law, statutory or otherwise, including the implied warranties of merchantability and fitness for use or a particular purpose, and any implied warranty arising from course of dealing or usage of trade, as well as any common-law duties relating to accuracy or lack of negligence, with respect to this material, any sitime product and any product documentation. products sold by sitme are not suitable or intended to be used in a life support application or component, to operate nuclear facilities, or in other mission critical applications where human life may be involved or at stake. all sales are made conditioned upon compliance with the critical uses policy set forth below.

#### CRITICAL USE EXCLUSION POLICY

BUYER AGREES NOT TO USE SITIME'S PRODUCTS FOR ANY APPLICATION OR IN ANY COMPONENTS USED IN LIFE SUPPORT DEVICES OR TO OPERATE NUCLEAR FACILITIES OR FOR USE IN OTHER MISSION-CRITICAL APPLICATIONS OR COMPONENTS WHERE HUMAN LIFE OR PROPERTY MAY BE AT STAKE.

SiTime owns all rights, title and interest to the intellectual property related to SiTime's products, including any software, firmware, copyright, patent, or trademark. The sale of SiTime products does not convey or imply any license under patent or other rights. SiTime retains the copyright and trademark rights in all documents, catalogs and plans supplied pursuant to or ancillary to the sale of products or services by SiTime. Unless otherwise agreed to in writing by SiTime, any reproduction, modification, translation, compilation, or representation of this material shall be strictly prohibited.

Downloaded from Arrow.com.