芯天下产品货架期说明函

XTX Products Shelf Life Declaration

首先，非常感谢您选择使用芯天下的产品。
First of all, thank you for purchasing our products.

本说明用于介绍芯天下传统封装产品货架期的定义和管控标准，用以解释客户在使用中较为关心的货架期问题。此说明函不适用于KGD wafer.
This document describes the definition of shelf-life and control standards for the XTX packaged products to explain the shelf-life related questions that customers concerned in use. Please note this letter is not used for KGD wafer.

产品货架期是指从产品包装时间开始到客户拆开MBB包装的时间，但为方便操作，芯天下货架期均指从产品封装时间开始到客户拆开MBB包装的时间。
Product shelf life is between the vacuum package date to unpacking the vacuum package date while

基于对产品的经验和实际评估数据的结果，芯天下保证所提供的产品，包含存储芯片，电源芯片以及微控制芯片，在产品符合包装规范存储且外包装无破损的情况下，Date Code未超过两年，其依然符合产品出货要求并能够满足客户的正常使用。
Based on the results of our experience and the actual evaluation data, XTXTechnology Inc. guarantees the shelf lie of all the products provided to you, including Memory chip, PMIC chip and MCU chip, with an assembly date code within 2 years, comfort to the shipping standard. Please note this guarantee is only valid when products are stored properly and the packing is not damaged.

芯天下提供的所有产品包装中，均按照J-STD-033D 标准要求在静电袋内放置了湿度指示卡以及干燥剂，请在打开静电袋后，检查湿度指示卡。若湿度指示卡颜色变化显示超过10%，请根据J-STD-033D要求先烘烤再贴片。
An HIC (humidity indicator card) and desiccant are packed in the MBB according to the J-STD-033D standard, please check the HIC inside the MBB before use. If the HIC shows >10%, please bake the chips before SMT process according to the J-STD-033D standard.

请严格按照芯天下产品包装袋上显示的潮敏等级MSL进行存储和使用，若打开静电袋后产品车间使用寿命超出受控时间，请根据不同的环境湿度暴露情况对产品

进行烘烤。按照J-STD-033标准允许的烘烤条件烘烤后，产品的车间使用寿命可以重置。若客户将产品进行烘烤后，置于配备全新干燥剂的包装袋真空保存，则产品货架期可以重置。

Products should be stored and used in accordance with requirement J-STD-033. Drying options for various moisture sensitivity levels and ambient humidity exposure are given. Drying per an allowable option resets floor life clock. If dried and sealed in an MBB with fresh desiccant, the shelf life is reset.

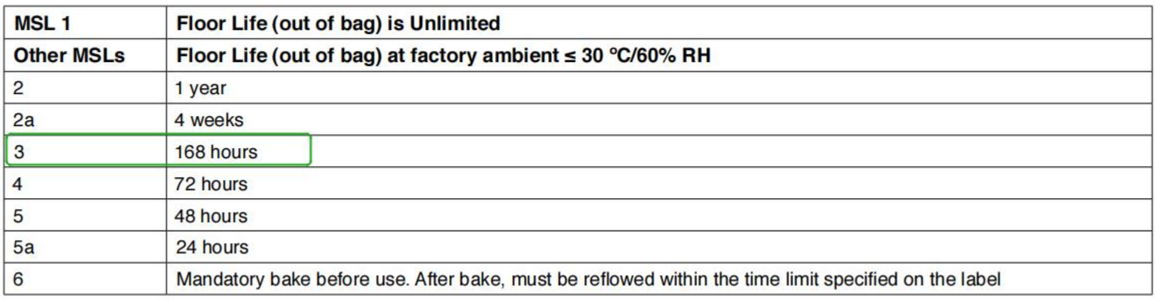

Table 5-1 Moisture Classification Level (MSL) and Floor Life per J-STD-020

MSL 1	**Floor Life (out of bag) is Unlimited**
Other MSLs	**Floor Life (out of bag) at factory ambient ≤ 30 °C/60% RH**
2	1 year
2a	4 weeks
3	168 hours
4	72 hours
5	48 hours
5a	24 hours
6	Mandatory bake before use. After bake, must be reflowed within the time limit specified on the label

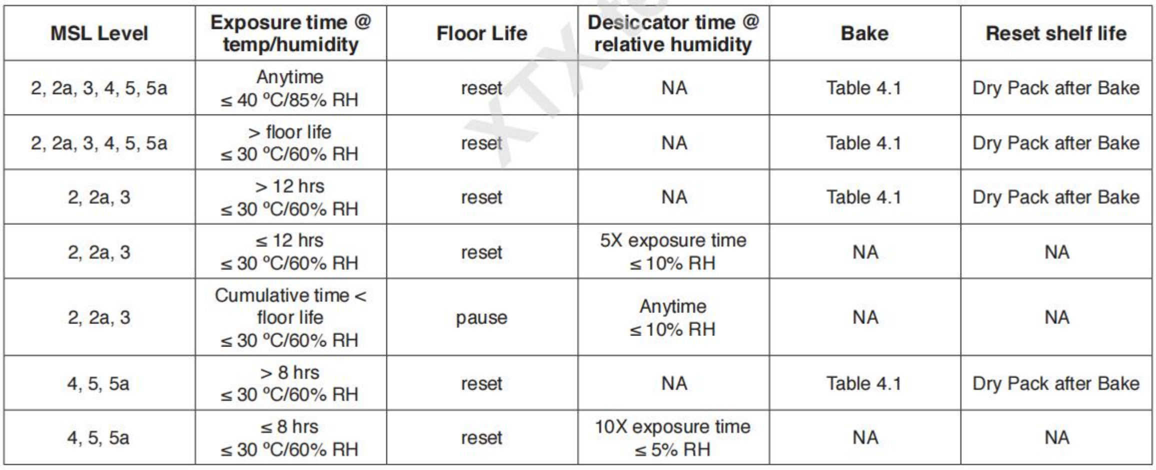

Table 4-3 Resetting or Pausing the Floor-Life Clock at User Site

MSL Level	Exposure time @ temp/humidity	Floor Life	Desiccator time @ relative humidity	Bake	Reset shelf life
2, 2a, 3, 4, 5, 5a	Anytime ≤ 40 °C/85% RH	reset	NA	Table 4.1	Dry Pack after Bake
2, 2a, 3, 4, 5, 5a	> floor life ≤ 30 °C/60% RH	reset	NA	Table 4.1	Dry Pack after Bake
2, 2a, 3	> 12 hrs ≤ 30 °C/60% RH	reset	NA	Table 4.1	Dry Pack after Bake
2, 2a, 3	≤ 12 hrs ≤ 30 °C/60% RH	reset	5X exposure time ≤ 10% RH	NA	NA
2, 2a, 3	Cumulative time < floor life ≤ 30 °C/60% RH	pause	Anytime ≤ 10% RH	NA	NA
4, 5, 5a	> 8 hrs ≤ 30 °C/60% RH	reset	NA	Table 4.1	Dry Pack after Bake
4, 5, 5a	≤ 8 hrs ≤ 30 °C/60% RH	reset	10X exposure time ≤ 5% RH	NA	NA

Table 4-1 Reference Conditions for Drying Mounted or Unmounted SMD Packages
(User Bake: Floor life begins counting at time = 0 after bake)

Package Body	Level	Bake @ 125 °C + 10/-0 °C < 5% RH		Bake @ 90 °C + 8/-0 °C ≤ 5% RH		Bake @ 40 °C + 5/-0 °C ≤ 5% RH	
		Exceeding Floor Life by > 72 h	Exceeding Floor Life by < 72 h	Exceeding Floor Life by > 72 h	Exceeding Floor Life by < 72 h	Exceeding Floor Life by > 72 h	Exceeding Floor Life by < 72 h
Thickness < 0.5 mm (see Note 5)	2	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)
	2a	1 hour	1 hour	2 hours	1 hour	12 hours	8 hours
	3	1 hour	1 hour	3 hours	1 hour	22 hours	8 hours
	4	1 hour	1 hour	3 hours	1 hour	22 hours	8 hours
	5	1 hour	1 hour	3 hours	1 hour	23 hours	8 hours
	5a	1 hour	1 hour	4 hours	1 hour	26 hours	8 hours
Thickness > 0.5 mm ≤ 0.8 mm (see Note 5)	2	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)
	2s	4 hours	3 hours	15 hours	13 hours	4 days	3 days
	3	4 hours	3 hours	15 hours	13 hours	4 days	3 days
	4	4 hours	3 hours	16 hours	13 hours	4 days	3 days
	5	4 hours	3 hours	16 hours	13 hours	4 days	3 days
	5a	4 hours	3 hours	16 hours	13 hours	4 days	3 days
Thickness > 0.8 mm ≤ 1.4 mm (see Note 5)	2	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)	Not Required (see Note 4)
	2a	8 hours	6 hours	25 hours	20 hours	8 days	7 days
	3	8 hours	6 hours	25 hours	20 hours	8 days	7 days
	4	9 hours	6 hours	27 hours	20 hours	10 days	7 days
	5	10 hours	6 hours	28 hours	20 hours	11 days	7 days
	5a	11 hours	6 hours	30 hours	20 hours	12 days	7 days
Thickness > 1.4 mm ≤ 2.0 mm (see Note 5)	2	18 hours	15 hours	63 hours	2 days	25 days	20 days
	2a	21 hours	16 hours	3 days	2 days	29 days	22 days
	3	27 hours	17 hours	4 days	2 days	37 days	23 days
	4	34 hours	20 hours	5 days	3 days	47 days	28 days
	5	40 hours	25 hours	6 days	4 days	57 days	35 days
	5a	48 hours	40 hours	8 days	6 days	79 days	56 days
Thickness > 2.0 mm ≤ 4.5 mm (see Note 5)	2	48 hours	48 hours	10 days	7 days	79 days	67 days
	2a	48 hours	48 hours	10 days	7 days	79 days	67 days
	3	48 hours	48 hours	10 days	8 days	79 days	67 days
	4	48 hours	48 hours	10 days	10 days	79 days	67 days
	5	48 hours	48 hours	10 days	10 days	79 days	67 days
	5a	48 hours	48 hours	10 days	10 days	79 days	67 days
Exception for BGA package > 17 mm x 17 mm or any stacked die package	2 -5a	96 hours (See Note 2 and Note 5	As above per package thickness and moisture level	Not applicable	As above per package thickness and moisture level	Not applicable	As above per package thickness and moisture level

若您在使用芯天下产品有任何产品问题出现，我司会第一时间提供技术服务支持，以满足您的生产/使用需求。

If any product issues arise, we will provide technical service support as soon as possible to meet your demands.

公司名称（Company name）： 芯天下技术股份有限公司
品质部：（Sign for quality department ）： Mandy Xu
公司印章（Corporate seal）： 4403071958040
日期（Date）： Oct 29th, 2024