GENERAL DESCRIPTION

While the VSC8201XVZ is a lead-free device, it is not compatible with a 260°C solder reflow profile. This document will describe the proper solder reflow profile for use with the VSC8201XVZ.

1.0 INTRODUCTION

As with all BGA packaged devices, reliable mounting of the VSC8201XVZ requires careful attention to the temperature profile used in the solder reflow process. Reflow process, equipment, and the thermal characteristics of each circuit board design can all affect the required profile. This Application Note provides guidelines that can be used to develop a reliable reflow profile for each application.

1.1 References

1.1.1 Vitesse Documents

VMDS-10103	VSC8201 Datasheet

1.1.2 JEDEC Standard

IPC/JEDEC J-STD-020	Moisture/Reflow Sensitivity Classification for Nonhermetic Solid State Surface Mount Devices

2.0 REFLOW PROFILE SPECIFICATIONS

Note: All temperatures refer to topside of the package, measured on the package body surface.

Table 1. Reflow Profile Specifications

Specification	Value	Units
Average Ramp-Up Rate (Ts_{max} to T_P)	3	°C/second (max)
Preheat - Temperature Min (Ts_{min}) - Temperature Max (Ts_{max}) - Time (ts_{min} to ts_{max})	 100 150 60-120	 °C °C seconds
Time maintained above: - Temperature (T_L) - Time (t_L)	 183 60-150	 °C seconds
Peak Temperature (T_P)	240	°C
Time within 5°C of actual Peak Temperature (t_P)	10-30	seconds
Ramp-Down Rate	6	°C/second
Time 25°C to Peak Temperature	6	minutes (max)
Maximum number of reflow cycles	6	

3.0 EXAMPLE PROFILE

The plot below shows an example thermal profile that meets the above specifications.

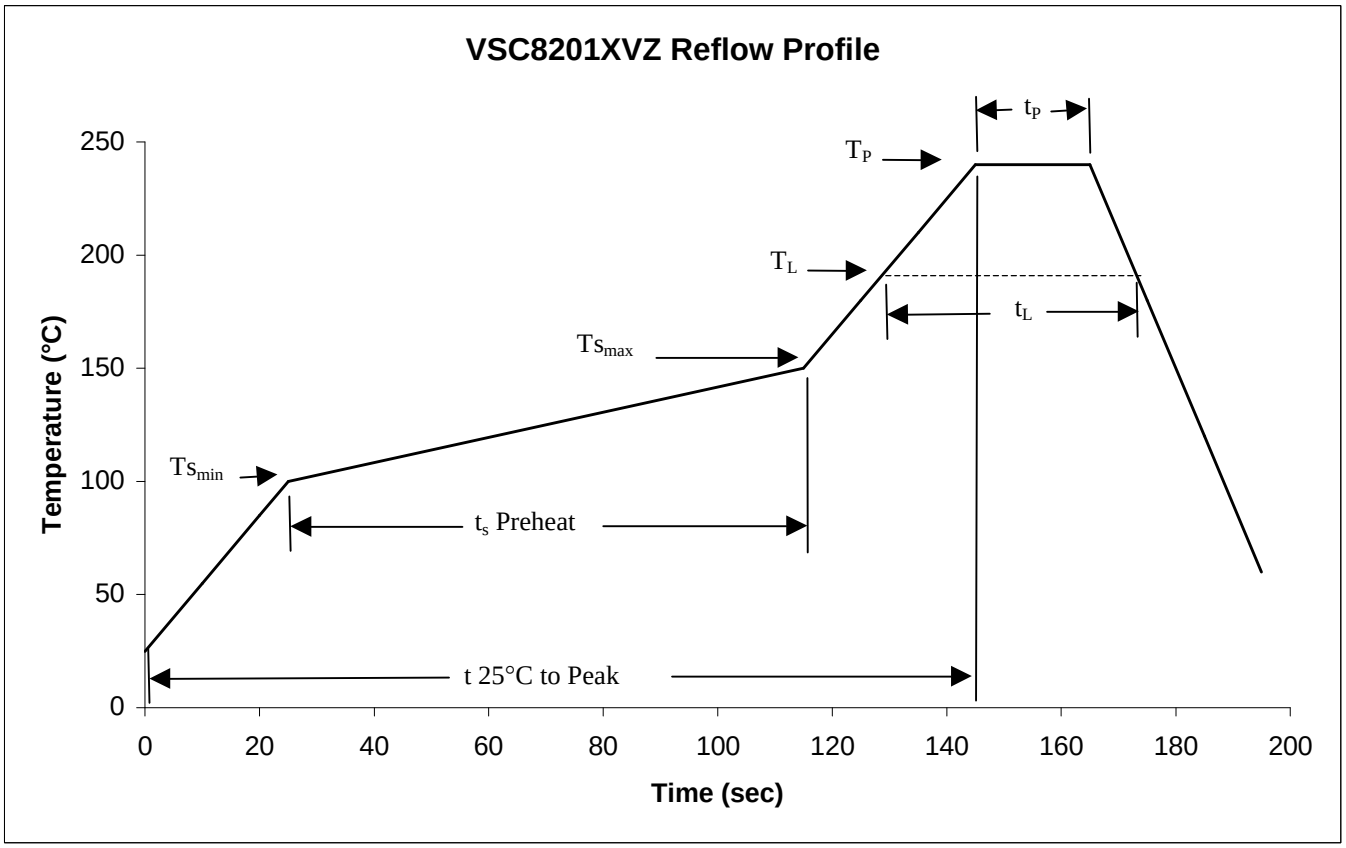

Figure 1. Reflow Profile

DOCUMENT HISTORY & NOTES

Table 2. Document History

Rev	Date	Description
01-00	12 April 2005	Initial Document Release

CORPORATE HEADQUARTERS
Vitesse Semiconductor Corporation
741 Calle Plano
Camarillo, CA 93012
Tel: 1-800-VITESSE • FAX: 1-805-987-5896

For application support, latest technical literature, and locations of sales offices,
please visit our web site at
www.vitesse.com