

March. 31, 2009

Re: Recommended Solder Profiles

This document is intended as a reference for solder profiles for SEI resistive components. These profiles should be compatible with most soldering processes. These are only recommendations; actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with \*.

### **Sn – Pb terminations**

**SOLDERING IRON RECOMMENDED TEMPS:** 330C to 350C with minimum duration.

#### **WAVE SOLDERING**

	MAXIMUM	RECOMMENDED	MINIMUM
<u>PREHEAT TIME</u>	80 sec.	70 sec.	60 sec.
<u>TEMPERATURE DIFF.</u>	140 deg. C	120 deg. C	100 deg. C
<u>SOLDER TEMP.</u>	260 deg. C	240 deg. C	225 deg. C
<u>DWELL TIME @ MAX.</u>	4 sec.	3 sec.	*
<u>RAMP DN (deg. C/sec)</u>	NA	4 deg. C/sec.	NA

**TEMPERATURE DIFF. = difference between final preheat stage and soldering stage.**

#### **CONVECTION/IR REFLOW SOLDERING**

	MAXIMUM	RECOMMENDED	MINIMUM
<u>RAMP UP (deg. C/sec)</u>	4 deg.C/sec.	2 deg. C/sec.	*
<u>DWELL TIME &gt; 180 deg. C</u>	180 sec.	90 sec.	60 sec.
<u>SOLDER TEMP.</u>	260 deg. C	225 deg. C	*
<u>DWELL TIME @ MAX.</u>	20 sec.	15 sec.	10 sec.
<u>RAMP DN (deg. C/sec)</u>	4 deg. C/sec.	2 deg. C/sec.	*

#### **VAPOR PHASE SOLDERING**

	MAXIMUM	RECOMMENDED	MINIMUM
<u>RAMP UP (deg. C/sec)</u>	4 deg.C/sec.	2 deg. C/sec.	*
<u>DWELL TIME &gt; 183 deg. C</u>	85 deg. C	75deg. C	*
<u>SOLDER TEMP.</u>	220 deg. C	215 deg. C	*
<u>DWELL TIME @ MAX.</u>	75 sec.	70 sec.	*
<u>RAMP DN (deg. C/sec)</u>	4 deg. C/sec.	2 deg. C/sec.	*

## 100% Matte Tin / RoHS Compliant Terminations

**SOLDERING IRON RECOMMENDED TEMPS:** 350C TO 400C with minimum duration

### **WAVE SOLDERING**

	MAXIMUM	RECOMMENDED	MINIMUM
<u>PREHEAT TIME</u>	80 sec.	70 sec.	60 sec.
<u>TEMPERATURE DIFF.</u>	140 deg. C	120 deg. C	100 deg. C
<u>SOLDER TEMP.</u>	260 deg. C	240 deg. C	225 deg. C
<u>DWELL TIME @ MAX.</u>	10 sec.	5 sec.	*
<u>RAMP DN (deg. C/sec)</u>	NA	NA	NA

**TEMPERATURE DIFF. = difference between final preheat stage and soldering stage.**

### **CONVECTION/IR REFLOW SOLDERING**

	MAXIMUM	RECOMMENDED	MINIMUM
<u>RAMP UP (deg. C/sec)</u>	4 deg. C/sec.	3 deg. C/sec.	*
<u>DWELL TIME &gt; 215 deg. C</u>	180 sec.	90 sec.	60 sec.
<u>SOLDER TEMP.</u>	260 deg. C	245 deg. C	*
<u>DWELL TIME @ MAX.</u>	30 sec.	15 sec.	10 sec.
<u>RAMP DN (deg. C/sec)</u>	6 deg. C/sec.	3 deg. C/sec.	*