Purpose:

To identify the steps associated with baking parts in accordance with IPC/JEDEC J-STD-033C, dated February 2012, "Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices."

Responsibility:

The Production Supervisor and Group Leader are responsible for baking parts.

Definitions:

Moisture Sensitivity Level (MSL): MSL is a measure of device sensitivity to moisture. The higher the MSL#, the greater is the sensitivity. There are eight levels: 1, 2, 2a, 3, 4, 5, 5a, and 6. This identification enables users to store and handle the SMDs to avoid subsequent thermal/mechanical damage during reflow attachment and/or repair operations.

Procedure:

1) Get the Sales Order, Baking Line Traveler, and the proper size of trays. If trays are not found of the right size, and are not heat resistant up to 130C, immediately notify Sales using a Customer Disposition Form.
2) Get the body thickness and moisture sensitivity level (listed on sales order). If moisture sensitivity level (MSL) is unavailable, bake at 125°C for 48 hours. If the MSL level is listed as 1 then the parts are not moisture-sensitive and no baking is required.
3) Table 4-2 of JEDEC Standard IPC/JEDEC J-STD-033C entitled "Default Baking Times Used Prior to Dry-Pack
4) that were Exposed to Conditions ≤60% RH (Supplier Bake: ''MET'' = 24 h).
   a) Using the table below, look-up the bake time:

Package Body Thickness	MSL Level	Bake Time @ 125°C	Bake Time @ 150°C
≤1.4 mm	2	7 hours	3 hours
	2a	8 hours	4 hours
	3	16 hours	8 hours
	4	21 hours	10 hours
	5	24 hours	12 hours
	5a	28 hours	14 hours
>1.4 mm ≤2.0 mm	2	18 hours	9 hours
	2a	23 hours	11 hours
	3	43 hours	21 hours
	4	48 hours	24 hours
	5	48 hours	24 hours
	5a	48 hours	24 hours
>2.0 mm ≤4.5 mm	2	48 hours	24 hours
	2a	48 hours	24 hours
	3	48 hours	24 hours
	4	48 hours	24 hours
	5	48 hours	24 hours
	5a	48 hours	24 hours

Note 1: If baking of packages >4.5 mm thick is required see appendix B.

Note 2: The bake times specified are conservative for packages without blocking planes or stacked die. For a stacked die or BGA package with internal planes that impede moisture diffusion the actual bake time may be longer than that

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required in Table 4-2 if packages have had extended exposure to factory ambient before bake. Also the actual bake time may be reduced if technically justified. The increase or decrease in bake time shall be determined using the procedure in JEDEC JESD22-A120 (i.e., <0.002% weight loss between successive readouts) or per critical interface concentration calculations.

b) Turn on the main switch and main circuit breaker of the calibrated oven.
c) Pre-heat the oven at a preset temperature of 125°C for fifteen (15) minutes.
d) Deposit the components onto trays at an ESD workstation.
e) Ground yourself with a wrist strap.

5) Load the parts into the oven. Fill out the baking line traveler and indicate the location of parts on each shelf by using the schematic on that form in order to ensure traceability. Place the paperwork in a plastic wallet next to the oven.
6) Using a pair of gloves, take the parts out of the oven after the parts have been baked for the allotted time.
7) Place the parts on cooling rack. Keep the paperwork next to the parts.
8) Record the time that the parts were taken out of the oven on the traveler.
9) Switch off the Oven.
10) Wait for approximately 15 minutes for the parts to cool at room temperature.
11) If there is a taping operation after baking, do that and then dry-pack the parts as soon as possible in order to minimize exposure to moisture. If no taping operation is required, tray the parts, place on the tray covers, and secure them with two Velcro straps.
12) Bring the parts to: "Holding Area waiting for Labeling".

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