

MICROSEMI ANALOG MIXED SIGNAL GROUP

MAJOR CHANGE CATEGORIES

Changes to the following manufacturing categories and processing elements are defined as MAJOR and require change control. Changes to these listed processes and materials, as a minimum, are to be evaluated by MSC-AMSG Technical Review Board (TRB). If any major change is contemplated, please notify MSC-AMSG Quality Assurance prior to implementation. Required information about the proposed change includes:

1) Detailed description, 2) Purpose, 3) Justification and 4) Implementation date.

1.0 WAFER FABRICATION FOUNDRIES

- a) Manufacturing Flow
- b) Lot formation
- c) Fabrication process sequence or process limits.
- d) Fabrication process materials or material specifications, including epitaxy layer thickness
- e) Photoresistive materials or material specifications
- f) Doping material source, concentration, or process technique (e.g. ion implant vs. diffusion)
- g) Cross-section diffusion profile
- h) Passivation or glassivation material, thickness or technique (including addition or deletion of passivation)
- i) Metalization system (pattern, material, deposition or etching technique, line width or thickness)
- j) Conductor, resistor or dielectric materials
- k) Passivation or glassivation process temperature or time
- l) Oxidation or diffusion process, oxide composition and thickness, oxidation temperature and time
- m) Sintering or annealing temperature and time
- n) Method of mask making.
- o) Gate formation process material technique
- p) Backside process to include wafer thinning and backside metalization
- q) Ohmic contact formation
- r) Starting material qualification
- s) Sample plans (quantity and acceptance numbers)
- t) Wafer acceptance criteria
- u) Process Control Monitor (PCM) and acceptance metrics
- v) Change from a baseline process
- w) Wafer fabrication move from one line or building to another

2.0 ASSEMBLY SUB-CONTRACTORS (PROCESSING)

- a) Assembly Flow
- b) Lot formation
- c) Die separation method
- d) Die attach material and method
- e) Wire bond interconnect method
- f) Wire composition and dimension
- g) Internal visual inspection procedures
- h) Die coating material and technique
- i) Seal technique (materials or sealing process, gas composition)
- j) Screening tests procedures, sequence
- k) Sample plans (quantity and acceptance numbers)
- l) Physical location of any assembly or screening operation
- m) Quality Assurance Inspection procedures or inspection points

3.0 ASSEMBLY SUB-CONTRACTOR (CONFIGURATION AND MATERIALS)

- n) Package physical dimensions or configuration
- o) Cavity dimension
- p) Leads or terminations, number of leads or change in base material
- q) Lead or terminal plating material and thickness
- r) Body material
- s) Body plating material and thickness
- t) Die attach pad material and thickness
- u) Die attach pad plating/deposition technique
- v) Lid material
- w) Lid plating material and thickness
- x) Lid seal (preform) material
- y) Glass seal (frit) material, composition and dimension
- z) Hard glass seal material, composition and dimension
- aa) lead configuration (e.g., J-lead, gull wing)
- bb) Device marking process or materials

4.0 ELECTRICAL TEST SUB-CONTRACTORS

- a) Test Flow
- b) Test facility move from one facility or building to another
- c) Sample plans (quantity and acceptance numbers)
- d) Test procedures
- e) Quality Assurance Inspection procedures or inspection points
- f) Lot formation