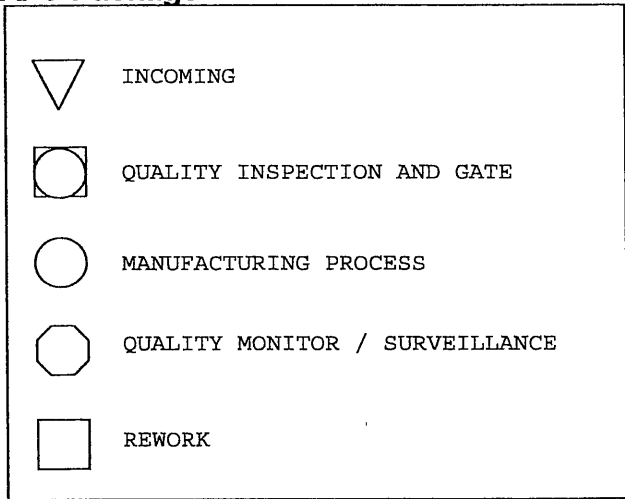



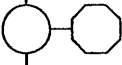

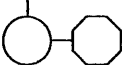









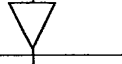





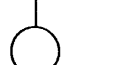


Assembly Flowchart Module/ BGA/ Y Package

(Updated 08/02/2011)







Vendor: Linear Technology Corporation
 Package: Module / BGA / Y package
 Assembly: Carsem, Malaysia, LTC Penang
 Final Test: Linear Technology Corp., Milpitas & CA., Singapore
 Q.C. Test: Linear Technology Corp., Milpitas & CA., Singapore
 Source Accept Test: Linear Technology Corp., Milpitas & CA., Singapore
 Quality Contact: Naib Girn, LTC Milpitas, CA
 (408) 432-1900 Ext. 2519



FLOW CHART INCOMING ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	WAFER INVENTORY					
	QA INCOMING WAFER DIE BUY-OFF	WAFER INSPECTION	PER APPLICABLE SPEC.		EVERY WAFER	
	WAFER MOUNT/CURE	WAFER INSPECTION	PER APPLICABLE SPEC			
	WAFER SAW/CLEAN	DIE PREPARATION	PER APPLICABLE SPEC	AUTO SAW	EVERY LOT 1 WAFER SETUP CHECK	%DEFECTIVE LOG
	SAW MONITORING	VISUAL	PER APPLICABLE SPEC	10X -30X SCOPE		
	2 nd OPTICAL INSPECTION	DIE QUALITY	PER APPLICABLE SPEC	75X – 150X MICROSCOPE	EVERY LOT 100%	YIELD ANALYSIS%
	QA 2 nd OPTICAL LOT ACCEPTANCE		PER APPLICABLE SPEC	75X – 150X MICROSCOPE	SAMPLE SIZE 116 0/1 PER LOT	LAR AND % UNIT DEFECTIVE TREND CHART
	SUBSTRATE INVENTORY					
	QA INCOMING SUBSTRATE BUY-OFF		PER APPLICABLE SPEC			
	COMPONENT INVENTORY					
	QA INCOMING COMPONENT BUY-OFF		PER APPLICABLE SPEC			
	SOLDER PASTE INVENTORY					
	QA INCOMING SOLDER PASTE BUY-OFF		PER APPLICABLE SPEC			
	SUBSTRATE BAKE	6 HR @125°C	PER APPLICABLE SPEC	BOX OVEN		
	SOLDER PRINT		PER APPLICABLE SPEC	AUTO SOLDER PRINT MACHINE		
	SOLDER PRINT MONITORING		PER APPLICABLE SPEC	10X TO 30X MICROSCOPE	ONE STRIP SETUP CHECK	LOG SHEET

FLOW CHART INCOMING ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	COMPONENT ATTACH		PER APPLICABLE SPEC	AUTO COMPONENT ATTACH MACHINE		
	COMPONENT ATTACH MONITORING		PER APPLICABLE SPEC	10X TO 30X MICROSCOPE	ONE STRIP SETUP CHECK	LOG SHEET
	SOLDER DIE ATTACH		PER APPLICABLE SPEC	AUTO DIE BONDER		nP CHART % DEFECTIVE TREND CHART X BAR & R
	SOLDER DIE ATTACH MONITORING		PER APPLICABLE SPEC	10X TO 30X MICROSCOPE DIE SHEAR TESTER	ONE STRIP SETUP CHECK	X BAR & R DIE SHEAR STRENGTH CHART
	COMPONENT/DIE REFLOW		PER APPLICABLE SPEC	AUTO REFLOW OVEN		
	COMPONENT/DIE REFLOW MONITORING		PER APPLICABLE SPEC	THERMOCOUPLE	ONE STRIP SETUP CHECK FOR REFLOW PROFILE	LOG SHEET
	ULTRASONIC FLUX CLEAN		PER APPLICABLE SPEC	AUTO FLUX CLEAN MACHINE		
	ULTRASONIC FLUX CLEAN MONITORING		PER APPLICABLE SPEC	10X TO 30X MICROSCOPE	ONE STRIP SETUP CHECK	LOG SHEET
	COMPONENT/DIE INSPECTION		PER APPLICABLE SPEC	10X TO 30X MICROSCOPE	100%	LOG SHEET
	UNDERFILL INVENTORY					
	QA INCOMING UNDERFILL BUY-OFF		PER APPLICABLE SPEC			
	UNDERFILL (OPTIONAL)		PER APPLICABLE SPEC	AUTO UNDERFILL MACHINE		
	UNDERFILL CURE		PER APPLICABLE SPEC	10X TO 30X MICROSCOPE	ONE STRIP CHECK	LOG SHEET
	QA MONITORING	CURE QUALITY	PER APPLICABLE SPEC	10X TO 30X		
	GOLD WIRE INVENTORY					
	QA INCOMING GOLD WIRE BUY-OFF		PER APPLICABLE SPEC			
	PLASMA CLEAN		PER APPLICABLE SPEC			
	WIRE BOND (1 st PASS)	BALL BONDS GOLD 1.00MIL WIRE	PER APPLICABLE SPEC	AUTO THERMSONIC BALL BONDER		
	WIRE BOND (2 nd PASS)	OPTIONAL	PER APPLICABLE SPEC			
	WIRE BOND MONITORING	WIRE PULL BALL SHEAR	PER APPLICABLE SPEC	10X TO 30X MICROSCOPE BOND PULL TESTER	EVERY SETUP AND 1 TIME PER SHIFT	% DEF. TREND CHART. X BAR & R WIRE BOND STR. TREND CHART
	3 rd OPTICAL INSPECTION	CHECK FOR WORKMANSHIP QUALITY PRIOR TO MOLDING	PER APPLICABLE SPEC	30X TO 60X MICROSCOPE	EVERY LOT 100%	YIELD CHART
	QA 3 rd OPTICAL LOT ACCEPTANCE	DIE, DIE BOND, WIRE BOND VISUAL QUALITY	PER APPLICABLE SPEC	30X TO 60X MICROSCOPE	EVERY LOT S/S=45, ACC=0	% LAR AND % UNIT DEFECTIVE TREND CHART

FLOW CHART INCOMING ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	MOLD COMPOUND INVENTORY		PER APPLICABLE SPEC			
	QA INCOMING MOLD COMPOUND BUY-OFF					
	PRE-MOLD BAKE		PER APPLICABLE SPEC	BOX OVEN		
	PLASMA CLEAN		PER APPLICABLE SPEC			
	MOLD	ENCAPSULATION WITH EPOXY	PER APPLICABLE SPEC	TRANSFER MOLD	ONE STRIP SETUP CHECK	
	MOLD MONITORING	MOLDING QUALITY (X-RAY MONITORING/DIE VOID MONITORING)		30X TO 60X MICROSCOPE X-RAY MACHINE		LOG SHEET
	PLASMA CLEAN		PER APPLICABLE SPEC			
	INK MARK	TRACEABILITY, DEVICE MARKING	PER APPLICABLE SPEC	UNAIDED EYE, 6 INCHES UNDER NORMAL ROOM LIGHTING METHOD 2015 MIL-STD-883	ONE STRIP SETUP CHECK	
	INK MARK MONITORING	CHECK MARKING QUALITY				LOG SHEET
	POST MOLD CURE	CURE MOLD COMPOUND	CHECK OVEN TEMPERATURE	BAKE IN +175°C OVEN FOR 6 HOURS		
	MOLDED PACKAGE BAKE		PER APPLICABLE SPEC	BOX OVEN		
	SUBSTRATE CLEAN		PER APPLICABLE SPEC	AUTO FLUX CLEAN MACHINE		
	BALL MOUNT		PER APPLICABLE SPEC	AUTO BALL MOUNT MACHINE		
	REFLOW		PER APPLICABLE SPEC	AUTO REFLOW OVEN		
	FLUX CLEAN		PER APPLICABLE SPEC	AUTO FLUX CLEAN MACHINE		
	QA SOLDER BALL PULL/SHEAR		PER APPLICABLE SPEC	DAGE BALL PULL/SHEAR MACHINE		
	QA STRIP VISUAL GATE		PER APPLICABLE SPEC	UNAIDED EYE 10X MICROSCOPE	100%	
	SUBSTRATE MOUNT		PER APPLICABLE SPEC			
	SUBSTRATE SAW/CLEAN	SINGULATE UNIT	PER APPLICABLE SPEC	AUTO SAW MACHINE		
	SUBSTRATE SAW MONITORING	VISUAL INSPECTION	PER APPLICABLE SPEC	10X TO 30X MICROSCOPE	ONE STRIP SETUP CHECK	LOGBOOK
	TRAY INVENTORY					
	QA INCOMING TRAY BUY-OFF	CHECK VISUAL/PHYSICAL DIMENSIONS	PER APPLICABLE SPEC			
	PICK & PLACE					
	PICK & PLACE MONITORING					

	FINAL VISUAL	100% INSPECT		UNAIDED EYE TO 10X MICROSCOPE	100%	YIELD CHART
	BAKE (AS APPLICABLE)	MOISTURE DRIVE-OUT	PER APPLICABLE SPEC	OVEN	100%	
	DRY PACK (AS APPLICABLE)	ADD DESICCANT VACUUM PACK	PER APPLICABLE SPEC	VACUUM SEALER	100%	
	PACKING	PACKING AND PREPARATION FOR DELIVERY	PACKING AND PREPARATION FOR DELIVERY	ANTI-STATIC SHIPPING TRAY		
	QA OUTGOING LOT ACCEPTANCE	VISUAL INSPECTION	PER APPLICABLE SPEC	UNAIDED TO 10X MICROSCOPE	EVERY LOT S/S=45, ACC=0	%LAR AND %UNIT DEFECTIVE TREND CHART
	FINISHED GOODS STORE/TEST					