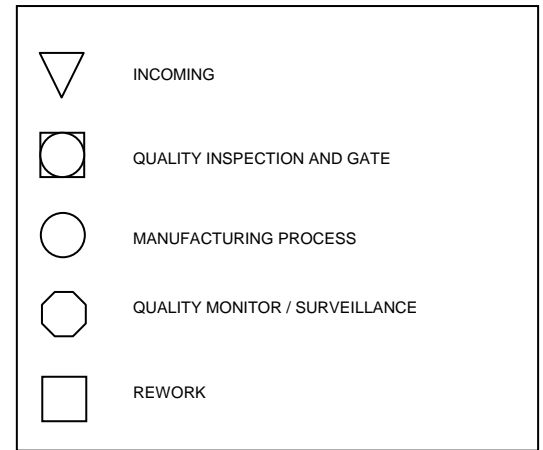


**ASSEMBLY FLOWCHART**  
**QFN/DFN PACKAGE**  
 Updated 08/25/08

Vendor: Linear Technology Corporation  
 Package: QFN/DFN Package  
 Assembly: LTC Penang & Carsem-Malaysia & UTAC -Thailand  
 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	Wafer preparation				
	QA Incoming Wafer Buy-off	Wafer Inspection	Per Applicable Spec		Every Lot 100% Basis	
	Wafer mount /cure	Wafer inspection	Per Applicable Spec			
	Wafer saw / clean	Die preparation	Per Applicable Spec	Auto saw		
	Wafer saw monitor	Visual	Per Applicable Spec	10x – 30x scope	Every lot – 1 wafer set up check	% defective log
	2 <sup>nd</sup> optical inspection	Die quality	Per Applicable Specs	75x – 150x microscope	Every lot 100% basis	Yield analysis %
	QA 2 <sup>nd</sup> optical lot acceptance		Per Applicable Spec	75x – 150x microscope	Sample size 32 0/1 per lot	LAR and % unit defective trend chart
	Lead frame inventory	Lead frame preparation				











Revision B

FLOW CHART INCOMING FAB REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/ TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	QA INCOMING LEAD FRAME BUY-OFF		SPEC.NO: CSI-01			
	2D CODING FOR LEAD FRAME IDENTIFICATION		SPEC.NO: ASYML1501			
	2D CODING MONITORING		SPEC.NO: ASYML1501			
	FILM / TAPE- ATTACH TO LEADFRAME		SPEC.NO: ASYML1601			
	FILM / TAPE- ATTACH TO LEADFRAME MONITORING		SPEC.NO: ASYML1602			
	EPOXY INVENTORY					
	QA INCOMING EPOXY BUY-OFF		SPEC.NO: CSI-05			
	DIE ATTACH	DIE BONDED TO LEAD FRAME WITH EPOXY	SPEC.NO: ASYML2002 ASYML2003	AUTO DIE BONDER	S/S = 1 STRIP PER WAFER, PER HOUR	nP CHART % DEFECTIVE TREND CHART
	DIE ATTACH MONITOR		SPEC.NO: ASYML2001	10X TO 30X MICROSCOPE DIE SHEAR TESTER		X BAR & R DIE SHEAR STRENGTH CHART
	EPOXY CURE	DIE ATTACH EPOXY CURE	SPEC.NO: CMD-005-6	OVEN		
	QA MONITORING	CURE QUALITY	SPEC.NO: IC-024	10X TO 30X		
	GOLD WIRE INVENTORY					
	QA INCOMING GOLD WIRE BUY-OFF		SPEC.NO: CSI-02	10X TO 30X		
	WIRE BOND	BALL BONDS GOLD 1.00 MIL WIRE	ASYML3102	AUTO THERMOSONIC BALL BONDER	SS = 100 EVERY HOUR, ACC = Ø	nP CHART
	WIRE BOND MONITOR	BOND PULL STRENGTH	SPEC.NO: IC-025 IC-005 ASYML3101	10X TO 30X MICROSCOPE BOND PULL TESTER	EVERY SET-UP AND 1 TIME PER SHIFT	% DEF. TREND CHART, X BAR & R WIRE BOND STR. TREND CHART
	100% 3RD OPTICAL INSPECTION	CHECK FOR WORKMANSHIP QUALITY PRIOR TO MOLDING	SPEC.NO: CMD-007-2 ASYML3301	30X TO 60X MICROSCOPE	EVERY LOT 100% BASIS	YIELD CHART
	QA 3RD OPTICAL INSPECTION	DIE, DIE BOND, WIRE BOND VISUAL QUALITY	SPEC.NO: IC-006	30X TO 60X MICROSCOPE	EVERY LOT LTPD = 5% S/S = 45, ACC = Ø	% LAR AND % UNIT DEFECTIVE TREND CHART

Revision A

FLOW CHART INCMNG ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/ TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	MOLD COMPOUND INVENTORY  QA INCOMING MOLD COMPOUND BUY-OFF					
	MOLD AND TAPE DETACH FROM LEAD FRAME  MOLD MONITOR	ENCAPSULATION WITH EPOXY  MOLDING QUALITY		TRANSFER MOLD  30X TO 60X MICROSCOPE	5 TIMES PER SHIFT PER MOLD 1 SHOT, ACC = Ø	nP CHART  % LAR TREND CHART
	LASER TOP MARK  LASER TOP MARK MONITOR	TRACEABILITY, DEVICE MARKING  CHECK MARKING QUALITY		UNASSISTED EYE, 6 INCHES UNDER NORMAL ROOM LIGHTING METHOD 2015 MIL-STD-883	EVERY HALF HOUR, S/S = 15 UNITS, ACC = Ø PER MACHINE  2 TIMES PER SHIFT PER MACHINE S/S = 20, ACC = Ø	LOG BOOK  % UNIT DEFECTIVE P.A. TREND CHART
	POST MOLD CURE	CURE MOLDING COMPOUND	CHECK OVEN TEMPERATURE	BAKE IN +175°C OVEN FOR 6 HOURS	1X PER DAY EACH OVEN AT START AND 1 TIME PER SHIFT	X BAR & R % FAILED MONITOR TREND CHART
	SOLDER PLATE  SOLDER PLATE MONITOR	LEAD FINISH  SOLDERABILITY			2X PER SHIFT  S/S = 11, ACC = Ø	% DEFECTIVE TREND CHART
	QA LOT ACCEPTANCE	SOLDER COMP AND THICKNESS	L/F & HEATSINK MUST BE FREE FROM MOLD FLASH	UN-AIDED EYE		% UNIT DEFECTIVE P.A. TREND CHART
	STRIP INSPECTION	100% INSPECTION	VISUAL: INCOMPLETE DEFLASH, PACKAGE DAMAGE	3X TO 10X MICROSCOPE		% DEFECTIVE TREND CHART
	PRE-SAW STRIP MOUNTING	SAW PREPERATION				

Revision A.

FLOW CHART		PROCESS	DESCRIPTION	INSPECTION/	METHOD &	SAMPLING PLAN	SPC TECHNIQUE
INCMNG	ASSY	STEP		TEST CRITERIA	EQUIPMENT		
		SINGULATION WITH SAW	SINGULATE UNIT				
		SINGULATION WITH SAW MONITORING	VISUAL INSPECTION	PACKAGE DAMAGE	ASM AUTO MACHINE 7X TO 30X MICROSCOPE	2 STRIPS PER SHIFT	LOGBOOK
		ANTISTATIC TUBES/TRAYS INVENTORY		100% INSPECT		EVERY LOT 100% BASIS	
		QA INCOMING ANTISTATIC TUBES / TRAYS BUY-OFF					
		AUTO PICK & PLACE & BOTTOM LEAD INSPECTION					
		4TH OPTICAL INSPECTION	100% INSPECT		UN-AIDED EYE TO 10X MICROSCOPE		
		PACK	PACKING & PREPERATION FOR DELIVERY	PACKING & PREPERATION FOR DELIVERY	ANTI-STATIC SHIPPING TUBE		
		4TH OPT QA LOT ACCEPT	VISUAL INSPECTION		UN-AIDED EYE TO 10X MICROSCOPE		
		QA ACCEPT			UN-AIDED EYE TO 10X MICROSCOPE		% LAR AND % UNIT DEFECTIVE P.A. TREND CHART
		SHIP TO LTC					

Revision A.