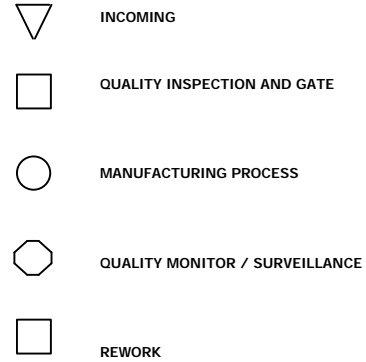
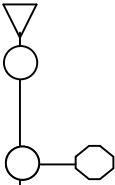

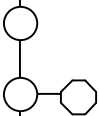



**ATTACHMENT 2.
ASSEMBLY FLOWCHART**

Vendor: Linear Technology Corporation
 Product: Bipolar or CMOS Process
 Package: SOIC Package
 Location of Wafer Fab: Linear Technology Corp., Milpitas, CA. / Camas, WA.
 Assembly: Penang/Carsem/Unisem-Malaysia ChipPac-China
 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: Dwight Somerset, LTC, Milpitas, CA.
 (408) 432-1900 Ext. 2427



FLOW CHART INCOMING ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/ TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	WAFER SORT WAFER SORT MONITOR	100% DIE LEVEL ELECTRICAL TEST REJECTS ARE INKED MONITOR PROBING AND 2ND OPTICAL QUALITY	PROBE DEFECTS 2ND OPTICAL DEFECTS	WAFER PROBER 75X MICROSCOPE	MINIMUM OF 1 TIME PER SHIFT. S/S = 1, ACC = 0	LOG
	KIT FOR OVERSEAS ASSEMBLY (N/A FOR PENANG)	WAFERS ARE KITTED WITH LTC BONDING DIAGRAM AND LTC ASSEMBLY TRAVELER				
	WAFER MOUNT WAFER MOUNT MONITOR	PREPARATION FOR DIE SEPERATION	VISUAL INSPECTION	UNAIDED EYE	3 WAFERS/SHIFT Ø PPM TARGET	GO/NO GO INSPECTION
	WAFER SAW BACTERIA COUNT SET-UP CHECK PARAMETERS PARAMETERS DI WATER QUALITY	DIE SEPERATION BACTERIA CULTURE INSPECTION BLADE LIFE SAW KERF PRESSURE, SPEED, CUT COUNT PRESSURE, SPEED, CUT COUNT RESISTIVITY	ALIGNMENT ACCURACY 10 COL / 100 CC PER SPEC 45K IN SAW LINE 1.0 TO 2.2 MILS PER SPEC PER SPEC 12 M OHM MIN	TV ALIGNMENT MICRO AUTOMATION OR DISCO SAW 10X TO 30X MICROSCOPE BACTERIA CULTURE VISUAL COUNT USAGE TM MICROSCOPE OR EQUIVALENT VISUAL RESISTIVITY METER	EVERY WAFER LOT / MACHINE, Ø PPM TARGET 1X PER WEEK EA WAFER LOT N/A ONCE PER SHIFT 4 CUTS PER MACHINE 1X PER SHIFT 1X PER WEEK 1X PER WEEK	LOG LOG LOG LOG LOG LOG LOG

FLOW CHART INCOMNG ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/ TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	DIE SORT 2ND OPT	VISUAL INSPECTION	PER SPEC	75X MICROSCOPE	YIELD TRIGGER 93.0%	LOG
	DIE SORT BUY OFF	VISUAL INSPECTION	PER SPEC	75X MICROSCOPE	32 / LOT ACC = 0, REJ = 1	LOG
	DIE ATTACH	DIE BONDED WITH EPOXY	PER SPEC	AUTO DIE ATTACHER 20X MICROSCOPE	1 STRIP/MAG ACC = 0, REJ = 1	LOG
	DIE PLACEMENT	VISUAL	PER SPEC	20X TO 40X MICROSCOPE	1 STRIP/WAFER LOT ACC = 0, REJ = 1	LOG
	DIE BACK CRACK	VISUAL	PER SPEC	75X TO 200X MICROSCOPE	4 UNITS/WAFER LOT CHIPS, CRACKS	LOG
	DIE ATTACH MONITOR	VISUAL QUALITY	DIE SHEAR TESTER	30X TO 60X MICROSCOPE	3 UNITS PER OVEN LOAD	nP CHART
	RESIN BLEED	VISUAL		20X TO 40X MICROSCOPE	2 STRIPS/OVEN/DAY ZERO BLEED	LOG
	EPOXY CURE	CURE TEMP	EPOXY CURE +175°C +/-5°C	PYROMETER / TC	1X/DAY	LOG
	WIRE BOND	BALL BONDS	GOLD WIRE	AUTO THERMOSONIC BALL BONDER 20X TO 40X	10 UNITS/LOT ACC = 0, REJ = 1	LOG
	SURVEILLANCE	VISUAL	PER SPEC	20X TO 40X MICROSCOPE	10 UNITS/MAG ACC = 0, REJ = 1	LOG
	PARAMETERS	VISUAL	PER SPEC		1X PER LOT	LOG
	CAPILLARY LIFE	VISUAL	COUNT USAGE		EVERY 6 SHIFTS (<800K BONDS)	
	SET-UP	VISUAL		20X TO 40X MICROSCOPE	10 UNITS / LOT ACC = 0, REJ = 1	LOG
	WIRE BOND MONITOR	WIRE PULL	5GM(1MIL), 7GM (1.3MIL), 8GM(1.5 MIL), 12GM(2MIL), 15GM(3MIL)	BOND PULL TESTER	EACH LOT / CAP CHANGE (ALL WIRES)	X BAR R CHART
	BALL SHEAR	VISUAL	35GM(1MIL), 40GM (OTHER SIZES)GND BOND 60GM(1MIL) 80GM(1.3MIL), 120GM(1.5MIL)	BALL SHEAR TESTER	EACH LOT / CAP CHANGE (5 WIRES INCLUDING GND BONDS)	X BAR R CHART
	PARAMETERS	VISUAL	(POWER, FORCE TIME, TEMP)		1X / DAY	LOG
	BOND PEEL TEST	VISUAL	>25% AU REMAINING	75X MICROSCOPE	1 WIRE/MACH/DAY	LOG
	BOND CRATER	VISUAL	NO CRATERING	75X MICROSCOPE	1X/MACH/DAY (10 UNITS)	LOG
	3RD OPTICAL INSPECTION	VISUAL INSPECTION	PER SPEC	20X TO 40X MICROSCOPE	YIELD TRIGGER 95%	LOG
	QA 3RD OPTICAL INSPECTION	CHECK FOR WORKMANSHIP QUALITY	PER SPEC	MIN 30X MICROSCOPE	125 PER LOT ACC = 0, REJ = 1 (MRB>10%, 3X REJ)	LOG

FLOW CHART INCMNG ASSY Rework	PROCESS STEP	DESCRIPTION	INSPECTION/ TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE	
	DIE COAT (WHERE APPLICABLE)	SETUP CHECK SURVEILLANCE PENETRATION	PER SPEC PER SPEC PER SPEC	VISUAL 10X TO 30X MICROSCOPE PENETROMETER	EACH LOT 1 STRIP / MAG EACH PREP	LOG LOG LOG	
		DIE COAT QA BUYOFF NEEDLE TEST DIE COAT OVEN THINCOAT HEIGHT	COAT DEFECTS VISUAL PARAMETER VISUAL	PER SPEC CURE TEST +150°C, 3 HRS PER SPEC	10X MICROSCOPE CURE TESTER OVEN TOOLMAKERS	300 / LOT ACC = 0, REJ = 1 CURE CONDITION 1X/SHIFT/OVEN EACH LOT	LOG LOG nP CHART nP CHART
		MOLD - EPOXY NOVOLAC SURVEILANCE TEMPERATURE SURVEILLANCE COMPOUND AGEING CHECK MISMATCH PARAMETERS MOLD QUALITY	ENCAPSULATION PARAMETERS VISUAL MOLD TEMP VISUAL VISUAL OFFSET PRESS, SPEED XRAY VISUAL	PER SPEC PER SPEC +175°C +/- 5°C PER SPEC AGE LIFE <1.0MIL(SOIC) PER SPEC SWEEP,VOIDS WIRE DEFECTS	VISUAL MIN 3X PYROMETER 30X TO 40X MICROSCOPE VISUAL TOOLMAKER'S VISUAL SOFT XRAY	1X / SHIFT 1 SHOT / LOT ACC = 0, REJ = 1 1X/SHIFT/MACH/ MOLD CHANGE 6 STRIPS/MACH/ SHIFT/CONVERSION 1X / SHIFT 1X/DAY/MC 4 UNITS/SHOT 1X / MACH / DAY 1X/DAY EVERY LOT 20 UNITS ACC = 0, REJ = 1	CHECKLIST CHECKLIST X BAR R CHART LOG LOG LOG
	POST MOLD CURE POST MOLD CURE MONITOR	TEMPERATURE TEMPERATURE	+175°C +/- 5°C 6 HOURS +175°C +/- 5°C 6 HOURS	PYROMETER PYROMETER	CONTINUOUS 1X/OVEN/DAY		
	SLURRY DEFLASH VISUAL DEFLASH MONITOR	REMOVE MOLD FLASH FROM PACKAGE PRESSURE	PER SPEC PER SPEC	UNAIDED EYE PRESSURE GAGE	2X/SHIFT/PKG CHANGE - 5 STRIPS ACC = 0, REJ = 1 2X/SHIFT/MACH	LOG LOG	
	MARKING SET-UP CHECK PERMANENCY IR, VISCOSITY	VISUAL INSPECTION VISUAL MARK PERMANENCY VISUAL	PER SPEC PER SPEC 1 SOLUTION 3 SOLUTIONS PER SPEC	UNAIDED EYE UNAIDED EYE UNAIDED EYE	2 STRIPS/3X/SHIFT ACC = 0, REJ = 1 1X / SHIFT 1 LOT/MACH/SHIFT 11 UNITS ACC = 0, REJ = 1 1X/WEEK(11 UNITS/ SOLUTION ACC = 0, REJ = 1 1X / SHIFT	LOG CHECKLIST LOG nP CHART	

FLOW CHART INCMNG ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/ TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	SOLDER PLATE INSPECTION	PARAMETERS THICKNESS AND COMPOSITION SOLDERABILITY (W&WO AGING) PACKAGE CLEANLINESS	PER SPEC 300 - 800 u INCH 85% ±10% 95% COVERAGE 1.7 µG/INCH SQUARED	UNAIDED EYE XRF 20X TO 40X MICROSCOPE IONOGRAPH	1X/PKG/SHIFT 1X/SHIFT/MACH/ CHANGE OF SOLDER BATH - MIN OF 10 READINGS 1X / SHIFT 10 UNITS 3 LOTS / SHIFT 3 TESTS / LOT	LOG nP CHART LOG LOG
	SOLDER PLATE BUYOFF	VISUAL	SOLDER QUALITY ETC	3X TO 10X MICROSCOPE	S/S = 125 ACC = Ø, REJ = 1	LOG
	TRIM & FORM SINGULATION	SET-UP CHECK COPLANARITY LEAD SPREAD STANDOFF LEAD FATIGUE	PER SPEC PER SPEC PER SPEC	UNAIDED EYE COMPARATOR LEAD TESTER	5 UNITS / SHIFT 2 UNITS / LOT ACC = Ø, REJ = 1 1X / DAY / MACH 5 UNITS 1X / WK / MACH 2 LEADS	CHECKLIST nP CHART LOG
	CRACK / GAP BUYOFF	VISUAL	PER SPEC	30X TO 45X MICROSCOPE (SINGULATED)	45 / LOT / CONVER- SION 200/1ST LOT OF SHIFT ACC = Ø, REJ = 1	LOG
	DELAMINATION/ CRACK	VISUAL	PER SPEC	SCANNING ACOUSTIC MICROSCOPE (STRIP FORM)	MIN 2 LOTS/SHIFT/ MACHINE ACC = Ø, REJ = 1	LOG
	DEJUNK	SET-UP CHECK VISUAL	PER SPEC PER SPEC	UNAIDED EYE 30X TO 40X MICROSCOPE	5 UNITS / SHIFT 2 UNITS / LOT ACC = Ø, REJ = 1 45 UNITS HOURLY/ CONVERSION 100 UNITS/1ST LOT OF SHIFT ACC = Ø, REJ = 1	LOG LOG
	FINAL VISUAL INSPECTION	VISUAL QUALITY	PER SPEC	UNAIDED EYE	100% - YIELD TRIGGER 95.0%	LOG
	QA FINAL VISUAL INSPECTION	CORRECT MARK, MARKING PERMANENCY TEST (IF INK MARKED) VISUAL: BENT LEADS MOLD FLASH, SOLDER QUALITY ETC	PER SPEC	UNAIDED EYE	S/S = 125 ACC = Ø, REJ = 1	LOG
	QA PACK & DOCUMENTA- TION CHECK	PACKING & PREPERATION FOR DELIVERY	PER SPEC	UNAIDED EYE	5 TUBES ACC = Ø, REJ = 1	LOG
	SHIP TO LTC	ANTISTATIC TUBES			EVERY LOT 100% BASIS	