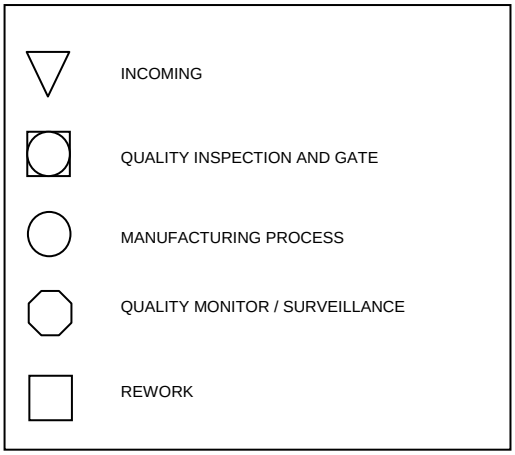
ASSEMBLY FLOWCHART
SSOP PACKAGE
Updated 08/25/08

Vendor:	Linear Technology Corporation
Package:	SSOP Package
Assembly:	Penang, Carsem, Unisem-Malaysia & Ana, -Phil, 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 SORT	100% DIE LEVEL ELECTRICAL TEST REJECTS ARE INKED		WAFER PROBER		
	WAFER SORT MONITOR	MONITOR PROBING AND 2ND OPTICAL QUALITY	PROBE DEFECTS 2ND OPTICAL DEFECTS	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	PREPARATION FOR DIE SEPERATION	VISUAL INSPECTION	UNAIDED EYE	3 WAFERS/SHIFT Ø PPM TARGET	GO/NO GO INSPECTION
	WAFER MOUNT MONITOR					
	WAFER SAW	DIE SEPERATION	ALIGNMENT ACCURACY	TV ALIGNMENT MICRO AUTOMATION OR DISCO SAW 10X TO 30X MICROSCOPE	EVERY WAFER LOT / MACHINE, Ø PPM TARGET	LOG
	BACTERIA COUNT	BACTERIA CULTURE	10 COL / 100 CC	BACTERIA CULTURE	1X PER WEEK	LOG
	SET-UP CHECK	INSPECTION	PER SPEC	VISUAL	EA WAFER LOT	LOG
		BLADE LIFE	45K IN SAW LINE	COUNT USAGE	N / A	LOG
		SAW KERF	1.0 TO 2.2 MILS	TM MICROSCOPE OR EQUIVALENT	ONCE PER SHIFT 4 CUTS PER MACHINE	nP CHART
	PARAMETERS	PRESSURE, SPEED, CUT COUNT	PER SPEC	VISUAL	1X PER SHIFT	LOG
	PARAMETERS	PRESSURE, SPEED, CUT COUNT	PER SPEC	VISUAL	1X PER WEEK	LOG
	DI WATER QUALITY	RESISTIVITY	12 M OHM MIN	RESISTIVITY METER	1X PER WEEK	LOG

Revision A.

FLOW CHART INCOMING 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 =Ø, REJ = 1	LOG
	DIE ATTACH	DIE BONDED WITH EPOXY	PER SPEC	AUTO DIE ATTACHER 20X MICROSCOPE	1 STRIP/MAG ACC = Ø, REJ = 1	LOG
	DIE PLACEMENT	VISUAL	PER SPEC	20X TO 40X MICROSCOPE	1 STRIP/WAFER LOT ACC = Ø, 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 = Ø, REJ = 1	LOG
	SURVEILLANCE	VISUAL	PER SPEC	20X TO 40X MICROSCOPE	10 UNITS/MAG ACC = Ø, 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 = Ø, 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 = Ø, REJ = 1 (MRB>10%, 3X REJ)	LOG

Revision A.

FLOW CHART INCOMING ASSY REWORK	PROCESS STEP	DESCRIPTION	INSPECTION/ TEST CRITERIA	METHOD & EQUIPMENT	SAMPLING PLAN	SPC TECHNIQUE
	MOLD - EPOXY NOVOLAC	ENCAPSULATION PARAMETERS	PER SPEC	VISUAL	1X / SHIFT	CHECKLIST
	SURVEILANCE	VISUAL	PER SPEC	MIN 3X	1 SHOT / LOT ACC = Ø, REJ = 1	CHECKLIST
	TEMPERATURE	MOLD TEMP	+175°C +/- 5°C	PYROMETER	1X/SHIFT/MACH/ MOLD CHANGE	X BAR R CHART
	SURVEILLANCE	VISUAL	PER SPEC	30X TO 40X MICROSCOPE	6 STRIPS/MACH/ SHIFT/CONVERSION	
	COMPOUND AGEING CHECK	VISUAL	AGE LIFE	VISUAL	1X / SHIFT	
	MISMATCH	OFFSET	<2.5MIL(SSOP)	TOOLMAKER'S	1X/DAY/MC 4 UNITS/SHOT	LOG
	PARAMETERS	PRESS, SPEED	PER SPEC	VISUAL	1X / MACH / DAY 1X/DAY	LOG
	MOLD QUALITY	XRAY VISUAL	SWEEP,VOIDS WIRE DEFECTS	SOFT XRAY	EVERY LOT 20 UNITS ACC = Ø, REJ = 1	LOG
	POST MOLD CURE	TEMPERATURE	+175°C +/- 5°C 6 HOURS	PYROMETER	CONTINUOUS	
	POST MOLD CURE MONITOR	TEMPERATURE	+175°C +/- 5°C 6 HOURS	PYROMETER	1X/OVEN/DAY	
	SLURRY DEFLASH VISUAL	REMOVE MOLD FLASH FROM PACKAGE	PER SPEC	UNAIDED EYE	2X/SHIFT/PKG CHANGE - 5 STRIPS ACC = Ø, REJ = 1	LOG
	DEFLASH MONITOR	PRESSURE	PER SPEC	PRESSURE GAGE	2X/SHIFT/MACH	LOG
	MARKING	VISUAL INSPECTION	PER SPEC	UNAIDED EYE	2 STRIPS/3X/SHIFT ACC = Ø, REJ = 1	LOG
	SET-UP CHECK	VISUAL	PER SPEC		1X / SHIFT	CHECKLIST
	PERMANENCY	MARK PERMANENCY	1 SOLUTION	UNAIDED EYE	1 LOT/MACH/SHIFT 11 UNITS ACC = Ø, REJ = 1	LOG
			3 SOLUTIONS	UNAIDED EYE	1X/WEEK(11 UNITS/ SOLUTION ACC = Ø, REJ = 1	
	IR, VISCOSITY	VISUAL	PER SPEC		1X / SHIFT	nP CHART
	SOLDER PLATE INSPECTION	PARAMETERS	PER SPEC	UNAIDED EYE	1X/PKG/SHIFT	LOG
		THICKNESS AND COMPOSITION	300 - 800 u INCH 85% ±10%	XRF	1X/SHIFT/MACH/ CHANGE OF SOLDER BATH - MIN OF 10 READINGS	nP CHART
		SOLDERABILITY (W&WO AGING)	95% COVERAGE	20X TO 40X MICROSCOPE	1X / SHIFT 10 UNITS	LOG
		PACKAGE CLEANLINESS	1.7 µG/INCH SQUARED	IONOGRAPH	3 LOTS / SHIFT 3 TESTS / LOT	LOG

Revision A.