PROCESS FLOW CHART PACKAGED DEVICES

FABRICATION

WAFER INSPECTION

WAFER FABRICATION AND METALLIZATION

SURFACE STABILIZATION WAFER BAKE 200°C FOR 24 HOURS

DIE THICKNESS MEASUREMENT

FINAL ELECTRICAL

VISUAL INSPECTION
Ref. Inspection Table

(OS) SEM ANALYSIS
MILITARY & SPACE ONLY

QA VISUAL INSPECTION
Ref. Inspection Table

ASSEMBLE

SERIALIZATION

100% RTH MEASUREMENT

TUNE & TEST

100% PRE-CAP VISUAL INSPECTION
930-100028-01-XX

PACKAGE SEAL

MARKING

QUALIFICATION

QA WAFER INSPECTION

100% DC PROBE

WAFER SCRIBE AND BREAK

BOND PULL TEST
930-000093-01-XX

DIE SHEAR TEST
930-000094-01-XX

RF SAMPLE TEST
930-100005-01-XX

PULSE IV TEST

HIGH TEMPERATURE BAKE

POWER BLAST

WAFER SELECTION

COMMERCIAL

(OS) HERMETIC SEAL TEST
100% GROSS

48 HOUR DC BURN-IN 100%
150°C JUNCTION TEMPERATURE

100% GROUP A TESTING

QA FINAL INSPECTION
(AQL SAMPLE PLAN)

GROUP B
PERIODICALLY

SHIP

MILITARY

(OS) 100% TEMPERATURE CYCLE
10 CYCLES

(OS) 100% CONSTANT ACCELERATION
1000G

(OS) HERMETIC SEAL TEST
100% FINE & GROSS

100% GROUP A ELECTRICAL TEST
READ AND RECORD

100% DC POWER BURN-IN
168 HOURS @ Tch= 150°C

100% ELECTRICAL DELTA
EVALUATION

(OS) PDA

100% QA FINAL INSPECTION

GROUP B
PER
ASSEMBLY
LOT

SHIP

HI-REL / SPACE

(OS) 100% TEMPERATURE CYCLE
20 CYCLES

(OS) 100% CONSTANT ACCELERATION
1000G

(OS) HERMETIC SEAL TEST
100% FINE & GROSS

(OS) PIND TEST

100% GROUP A ELECTRICAL TEST
READ AND RECORD

100% HTRB

100% GROUP A ELECTRICAL TEST
READ AND RECORD

100% DC POWER BURN-IN
240 HOURS @ Tch= 150°C

100% ELECTRICAL DELTA
EVALUATION

(OS) PDA

100% QA FINAL INSPECTION

GROUP B
PER
ASSEMBLY
LOT

SHIP

GROUP A TESTING	
DC	IDSS
	BVGD
	Vp
	gm
RF	P1dB
	G1dB
	Id 1dB
	Im3 (optional

GROUP B TESTING	* MIL-STD-883	* MIL-STD-750
Physical Dimensions	Method 2016	Method 2066
Solderability	Method 2003	Method 2026
Resistance to Solvents	Method 2015	Method 1022
Temperature Cycling • Military Grade • Space Grade	Method 1010 25 Cycles 50 Cycles	Method 1051 25 Cycles 50 Cycles
Steady State Life Tch= 175°C for 340 Hours minimum	Method 1005	Method 1027
DPA	*** MIL-STD-1580A**	*** MIL-STD-1580A**
	*** Unless otherwise indicated**	*** Unless otherwise indicated**

Environmental & Mechanical Testing Specifications		
	***MIL-STD-883**	***MIL-STD-750**
Hermetic Seal Test	Method 1014	Method 1071
• Fine Leak	Condition A1	Condition G or H
• Gross Leak	Condition C	
Temperature Cycle (Standard Military Level)	Method 1010, Condition C	Method 1051, Condition C
Temperature Cycle (Standard Space Level)	Method 1010, Condition C	Method 1051, Condition C
Constant Acceleration	Method 2001	Method 2006
PIND Test	Method 2020	Method 2052, Condition A
RTH Measurement	Method 1012	
HTRB (High Temperature Reverse Bias)	Method 1015, Condition A	Method 1042, Condition B
DPA	*MIL-STD-1580A	*MIL-STD-1580A
	***Unless otherwise indicated**	***Unless otherwise indicated**

Delta Parameters	Delta Limits for Burn-In	Delta Limits for Group B Test
Saturated Drain Current – IDSS	+/- 10%	+/- 10%
Transconductance – gm	+/- 10%	+/- 20%
Pinch off Voltage – Vp	+/- 10%	+/- 15%
Power – P1dB	+/- 0.5dB	-0.5dB

INSPECTION TABLE		
COMMERCIAL	**MILITARY**	**HI-REL / SPACE**
AQL Sampling plan	MIL-STD-883, Method 2010, Class level B	MIL-STD-883, Method 2010, Class level S
Excelics Internal specifications	MIL-STD-750, Method 2070, 2071 & 2072	MIL-STD-750, Method 2070, 2071 & 2072