S-100 SCREENING PROCEDURE

All parts procured with S-100 Screening shall be 100% screened in accordance with one of the three following procedures, as applicable. All testing is performed at room temperature. For testing at high and low temperatures, Group A testing is required.

DISCRETE SEMICONDUCTORS

Reference: MIL-PRF-19500, JANTXV Level

	TEST / PROCESS	MIL-STD-750 METHOD	CONDITIONS
1	Pre-cap Visual Inspection	2074 Diodes (Glass) 2069 Power FETs 2072 Transistors, non-glass Diodes	JANTXV level.
3a	Temperature Cycling	1051	Test condition C or maximum storage temperature, whichever is less. 20 cycles, t (extremes) ≥ 10 minutes. No dwell time required at 25^0C.
3b	Surge	4066	Condition A or B, as specified. Only applicable if specified.
3c	Thermal Impedance	3161 Power FETs 3103 IGBT 3131 Bipolar Transistor 3101 Diodes	Only applicable if specified.
9	Interim Electrical Parameters	-	Per device detail specification.
10	High Temperature Reverse Bias - HTRB (Not required for zeners and case mounted rectifiers)	1039 Transistors 1042 Power FETs 1038 Diodes and Rectifiers	Condition A 80% (minimum of rated VCB (bipolar), VGS (FET) or VDS (FET). Condition B 80% (minimum) of rated VGS. Condition A 80% (minimum) of rated VR or VRWM; 100% of VRWM if half sine condition is specified.
11	Interim Electrical Parameters	-	As specified, but including all delta parameters, as a minimum. Leakage current shall be measured prior to any other parameter, within 24 hours after removal of applied voltage in HTRB.
12	Burn-in	1039 Bipolar Transistors 1042 Power FETs 1038 Diodes, Rectifiers and Zeners 1038 Case mount Rectifiers 1040 Thyristors	Condition B 160 hours minimum. Condition A 160 hours minimum. Condition B 96 hours minimum. Condition A 48 hours minimum (performed at 125° C for Schottky Devices rated at 45V and above; performed at 100° C for Schottky Devices rated at 30V and below). 96 hours minimum (full wave blocking test).
13	Final Electrical	-	Group A, Subgroup 2, and delta parameters. Glass Rectifiers and Switching Diodes need Scope Display
14	Hermetic Seal a. Fine b. Gross	1071	Fine leak – not required for Double Plug Diodes
17	Case Isolation	To be performed on case isolated packages.	As specified.

Notes: 1) Sequence and testing varies per device.
2) For diode bridges pre-cap visual is performed at the bridge assembly level prior to potting.
3) Flow in accordance with slash sheet may be used if applicable.

HYBRIDS

Reference: MIL-PRF-38534, Class H

	SCREEN	MIL-STD-883 METHOD	CONDITIONS
1	Internal Visual	2017	Condition B
2	Temperature Cycling	1010	Condition C
3	Constant Acceleration	2001	Condition A (min) Y1 orientation only.
4	Pre burn in Electrical Parameters	-	Per device detailed specification.
5	Burn-in	1015	160 hours at 125° C minimum.
6	Final Electrical Parameters	-	Per device detailed specification.
7	PDA Calculation	-	10%
8	Seal: a. Fine b. Gross	1014	-
9	External Visual, Mechanical	2009	-

MICROCIRCUITS

Reference: MIL-PRF-38535, Class B; and MIL-STD-883, Test Method 5004 Class B

	SCREEN	MIL-STD-883 METHOD	CONDITIONS
1	Internal Visual	2010	Condition B
2	Temperature Cycling	1010	Condition C
3	Constant Acceleration	2001	Condition E (min) Y1 orientation only.
3.1	Visual Inspection		
4	Pre burn in Electrical Parameters	-	Per device detailed specification.
5	Burn-in	1015	96 hours at 125° C minimum.
	Post burn in electrical Parameters		Per device detailed specification
6	PDA Calculation		5% max
7	Final Electrical Parameters	-	Per device detailed specification.
8	Seal: a. Fine b. Gross	1014	-
9	External Visual, Mechanical	2009	-