

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 2069 Power FETs 2072 Transistors	JANTXV level.
2	Temperature Cycling	1051	Test condition C or maximum storage temperature, whichever is less. 20 cycles, t (extremes) ≥ 10 minutes.
3	Thermal Response	3161 Power FETs 3131 Bipolar Transistor 3101 Diodes	-
4	Hermetic Seal Fine Leak (Not applicable to double plug diodes and non-cavity products)	1071	Omit for double plug diodes. Test condition G or H. Maximum leak rate = 5×10^{-8} atm-cc/s except 5×10^{-7} atm-cc for devices with internal cavity > 0.3 cc. Maximum leak rate 5×10^{-6} atm-cc/s for cavities 3-40 cc. (May be performed after step 9)
5	Hermetic Seal Gross Leak	1071	-
6	Interim Electrical Parameters (Not applicable to case mounted rectifiers).	-	Per device detail specification.
7	High Temperature Reverse Bias (Not applicable to 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) as applicable. Condition B 80% (minimum) of rated VGS. Condition A- (Not required for case mounted rectifiers and zeners) 80% (minimum) of rated VR (Performed at 125° C for 45 to 100 Volt Schottky Devices, 100° C for 30 Volt Schottky Devices).
8	Interim Electrical Parameters	-	Per device detail specification.
9	Power Burn-in	1039 Bipolar Transistors 1042 Power FETs 1038 Diodes, Rectifiers and Zeners 1038 Case mount Rectifiers 1040 Thyristors	Condition B 96 hours minimum. Condition A 96 hours minimum. Condition B 96 hours minimum. Condition A 48 hours minimum (performed at 125° C for 30 Volt Schottky Devices), 96 hours minimum.
10	Final Electrical	-	Per device detail specification.

- 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.

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	96 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	-

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