DATA SHEET 2044, REV. E

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

Reference. Mil-PRF-19500, JANTAV Level						
	TEST / PROCESS	MIL-STD-750 METHOD	CONDITIONS			
1	Pre-cap Visual Inspection	2074 Diodes (Glass) 2069 Power FETs	JANTXV level.			
		2072 Transistors, non-glass Diodes				
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°C.			
3b	Surge	4066	Condition A or B, as specified. Only applicable if specified.			
3c	Thermal Impedance	3161 Power FETs	Only applicable if specified.			
		3103 IGBT				
		3131 Bipolar Transistor 3101 Diodes				
9	Interim Electrical Parameters	-	Per device detail specification.			
10	High Temperature Reverse	1039 Transistors	Condition A 80% (minimum of rated VCB			
	Bias - HTRB (Not required for		(bipolar), VGS (FET) or VDS (FET).			
	zeners and case mounted	1042 Power FETs	Condition B 80% (minimum) of rated VGS.			
	rectifiers)	1038 Diodes and Rectifiers	Condition A 80% (minimum) of rated VR or			
			VRWM; 100% of VRWM if half sine			
4.4			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	Condition B 160 hours minimum.			
		1042 Power FETs	Condition A 160 hours minimum.			
		1038 Diodes, Rectifiers and Zeners	Condition B 96 hours minimum.			
		1038 Case mount Rectifiers	Condition A 48 hours minimum (performed			
			at 125° C for Schottky Devices rated at 45V			
			and above; performed at 100° C for Schottky			
		40.40 = 1	Devices rated at 30V and below).			
		1040 Thyristors	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	1071	Fine leak – not required for Double Plug			
	a. Fine		Diodes			
	b. Gross					
17	Case Isolation	To be performed on case isolated	As specified.			
		packages.				

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.

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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:	1014	-
	a. Fine		
	b. Gross		
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:	1014	-
	a. Fine		
	b. Gross		
9	External Visual, Mechanical	2009	-

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