Table 08 Diode Screening Requirements

Inspection/Test	MIL-STD-750 Methods	MIL-STD-750 Conditions and Requirements	Grade 1	Grade 2
1. Internal Visual	2073/2074		X	X
2. Temperature Cycling	1051	Condition G (-55°C to +150°C) or max storage temperature whichever is less No dwell is required at 25°C. 20 cycles, t (extreme) ≥ 10 min.	X	X
3. Constant Acceleration	2006	20,000 g's in Y_1 Direction except at 10,000 g's for devices with power rating ≥ 10 Watts @ T_C = 25 °C. Not required for metallurgically bonded diodes.	X	X
4. PIND	2052	Condition A. Not required for non-cavity diodes.	X	X (Note 1)
5. Instability shock a. FIST b. BIST	 2081 2082	Shock test is required only for Axial Lead Diodes. Omit FIST for temperature compensated reference diode.	X	
6. Serialization			X	X
7. Initial Electrical		Read and record delta parameters per Table 8A on next page	X	X
8. Burn-In	1038	Conditions A and/or B per Table 8A on next page. Duration (hours) for HTRB/ Power Burn-in	X 48/240	X 48/160
9. Final Electrical		See Table 08A	X	X
10. Calculate Deltas		See Table 08A	X	
11. Percent Defective Allowable		PDA applies to DC measurements @ 25°C and delta limits (when applicable).	5%	10%
12. Hermetic Seal a. Fine Leak b. Gross Leak	1071	 G or H. Not required for double-plug diodes C or K	X	X
13. Radiographic	2076		X	
14. External Visual	2071		X	X

Note:

1. When procured directly from the manufacturer, JANTXV/ JANTX diodes should be procured with PIND testing per MIL-STD-19500, Paragraph 4.6.3.4.

Table 08A Burn-In And Electrical Measurement Requirements For Diodes

Diode Types	Required Burn-In		Delta Parameters	Electrical Measurements (Notes 1, 2, and 3)
	HTRB (Condition A)	Power (Condition B)		
Rectifier (Power, Fast Recovery, High Voltage)	80% rated V_{RM} (Note 4) 125°C≤T_A≤150°C	60 Hz Sinewave Rated V_{RWM} and I_O T_A = 25 °C	ΔV_F ΔI_R	V_F, I_R, V_R, V_{BR}, I_{FSM} t_{rr}, C_j.
Switching (General purpose, Schottky, RF, PIN)	80% rated V_{RM} 125°C≤T_A≤150°C	60 Hz Sinewave Rated V_{RWM} and I_O T_A = 25 °C	ΔV_F ΔI_R	V_F, V_R, V_{BR}, I_R, t_{rr}, τ, C_j, P_o/P_i
Zener (Voltage Reference)	Not Applicable	Specify I_Z to meet rated P_d T_A = 125 °C	ΔV_Z	V_F, Vz, Iz Z_Z, αV_z
Current Regulator Diode	Not required	Rated V_{POV} T_A = 25 °C	ΔI_s	V_L, Z_S, Z_K, V_s, I_s, αI_s.
Transient Suppressor Diode	80% rated V_{RWM} 125°C≤T_A≤150°C	Specify I_p, T_p, number of pulses T_A = 25 °C (Note 5)	ΔV_{BR} ΔI_R	V_{BR}, V_{CM}, I_{SM}, I_R.
Light Emitting Diode	Not Applicable	Rated I_F T_A = 25 °C	ΔV_F ΔI_V	I_V, I_R, V_F C_T
Tunnel diode (Microwave)	Rated V_R 125°C≤T_A≤150°C	Specify I_F & V_F to meet max. P_d T_A = 25 °C	ΔV_P ΔV_R	I_P, I_V, V_R, V_F, V_V C_T
Varactor (Tuning)	80% rated V_{RM} 125°C≤T_A≤150°C	Not Required	ΔI_R ΔC_T	I_R, V_{BR} C_C, C_T, Q, C_{t1}, L_S, C_{tz}
Thyristor (SCRs)	80% rated V_{RM} 80% rated V_{DM} 125°C≤T_A≤150°C	Rated V_{DWM} & V_{RWM}. Specify V_{GT} & V_{GQ}. (Note 6) T_A = 25 °C	ΔI_{DM} ΔI_{RM}	I_{DM}, I_{GM}, I_{GT}, I_L, I_{RM}, V_{BR}, V_{GT}, dV/dt, t_{on}, t_{off}

Notes:

1. See MIL-S-19500, Appendix B for symbol definitions.
2. Minimum required parameters are specified. When necessary, application critical parameters not listed in the table shall also be measured.
3. All DC parameters shall be tested at 25°C, at minimum and at maximum operating temperatures. All AC parametric measurements shall be performed at the required 25°C.
4. Case mounted rectifiers with I_o rated > 10 A @Tc= 100°C do not require HTRB.
5. Refer to slash sheets (e.g. /516) for the unique power burn-in sequence of transient suppressor diodes.
6. Power burn-in is applied only to SCR specifically designed with gate turn-off control; otherwise, use method 1040, condition A or B.