

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - FWD-RCS FMEA NO 05-6KF-2260 -1 REV: 11/03/87

ASSEMBLY : FWD PCA 1,2,3  
 P/N RI : JANTX1N1188R  
 P/N VENDOR:  
 QUANTITY : 5  
 : FIVE  
 :

	VEHICLE	102	103	104
EFFECTIVITY:		X	X	X
PHASE(S):	PL	LO X CO	DO	LS

PREPARED BY: DES D SOVEREIGN  
 REL J BEEKMAN  
 QE

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS

APPROVED BY: DES D.S. Q. B...  
 REL M. J. ... 11-14-87  
 QE ...

APPROVED BY (NASA):  
 SSM  
 REL ...  
 QE ...

ITEM:  
 BLOCKING DIODE (35 AMP) STUD MOUNTED - FORWARD RCS REACTION JET DRIVER 1 AND 2 (MANIFOLD 1 THROUGH 5) DRIVER POWER CIRCUIT.

FUNCTION:  
 PROVIDES ISOLATION BETWEEN POWER INPUT CIRCUITS FEEDING THE ASSOCIATED REACTION JET DRIVER FORWARD (RJDF) 1 OR 2 (MANIFOLD 1 THROUGH 5) RCS DRIVER POWER CIRCUITS.  
 81V76A22CR35,49. 82V76A23CR40. 83V76A24CR25,26.

FAILURE MODE:  
 OPEN, FAILS TO CONDUCT, HIGH RESISTANCE.

CAUSE(S):  
 THERMAL STRESS, MECHANICAL SHOCK, VIBRATION.

EFFECT(S) ON:  
 (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) LOSS OF CIRCUIT OUTPUT.

(B) THE AFFECTED REACTION JET DRIVER CANNOT BE ENERGIZED AND ASSOCIATED THRUSTERS CANNOT BE FIRED. NO EFFECT - REDUNDANT THRUSTERS WILL COMPLETE THE REQUIRED FUNCTION.

(C,D) NO EFFECT.

(E) FUNCTIONAL CRITICALITY EFFECT - POSSIBLE LOSS OF CREW/VEHICLE DUE TO INABILITY TO PERFORM EXTERNAL TANK SEPARATION FOLLOWING LOSS OF MORE THAN ONE MANIFOLD. REQUIRES 2 OTHER FAILURES (2 RJDF BUS RELAYS FAIL OFF) BEFORE EFFECT IS MANIFESTED. FIRST FAILURE OF STRING NOT DETECTABLE IN FLIGHT DUE TO LACK OF MONITORING MEASUREMENTS.

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - FWD-RCS

FMEA NO 05-6KF-2260 -1

REV:11/03/87

DISPOSITION & RATIONALE:

(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A-D) FOR DISPOSITION AND RATIONALE REFER TO APPENDIX F, ITEM NO. 1 - DIODE, POWER - STUD MOUNTED.

(B) GROUND TURNAROUND TEST

COMPONENT CHECKED OUT EVERY FLIGHT DURING GROUND TURNAROUND VIA THE GUIDANCE, NAVIGATION, AND CONTROL (GN&C) ORBITER MAINTENANCE REQUIREMENTS AND SPECIFICATIONS DOCUMENT (OMRSD) REQUIREMENTS FOR CHECKING THE PRIMARY AND VERNIER REACTION JET DRIVER POWER. THE TESTING CONSISTS OF CYCLING THRUSTER REACTION JET DRIVER LOGIC AND DRIVER SWITCHES WHILE MONITORING VEHICLE INSTRUMENTATION TO DETERMINE IF COMPONENTS HAVE FAILED.

(E) OPERATIONAL USE

NO ACTION FOR FIRST FAILURE - NOT DETECTABLE. IF ASSOCIATED THRUSTERS FAIL OFF, USE REDUNDANT THRUSTERS TO MAINTAIN VEHICLE CONTROL.