SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - FWD-RCS FMEA NO 05-6KF-2270 -1 REV:11/03/87

ASSEMBLY :FWD PCA 3
P/N RI :JANTX1N1204RA
P/N VENDOR:
QUANTITY :1
:ONE
:

CRIT. FUNC: 2
CRIT. HDW: 2

VEHICLE EFFECTIVITY:	102	103	104
	X	X	X

PHASE(S): PL LO OO X DO LS

REDUNDANCY SCREEN: A- B- C-

PREPARED BY:
DES D SOVEREIGN
REL J BEEKMAN
QE

APPROVED BY:
DES
REL
QE

APPROVED BY (NASA):
SSM
REL
QE

ITEM:
BLOCKING DIODE (12 AMP) - FORWARD RCS REACTION JET DRIVER 2 POWER INPUT CIRCUIT TO F5 MANIFOLD DRIVERS.

FUNCTION:
CONDUCTS CIRCUIT CURRENT AND PROVIDES SWITCHING COMPONENT PROTECTION FOR THE REACTION JET DRIVER (RJD) 2, POWER INPUT CIRCUIT F5 MANIFOLD DRIVERS. 83V76A24A1CR31.

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

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

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

(A) LOSS OF FUNCTION

(B) LOSS OF DRIVER POWER TO REACTION JET DRIVER FORWARD 2 FOR VERNIER JETS F5.

(C) PROBABLE LOSS OF MISSION OBJECTIVES DUE TO LOSS OF VERNIER THRUSTERS NO OTHER REDUNDANT VERNIER THRUSTERS ARE AVAILABLE TO COMPLETE THE REQUIRED FUNCTIONS. PRIMARY THRUSTER USAGE WILL RESULT IN HIGHER PROPELLANT CONSUMPTION RATE RESULTING IN EARLY MISSION TERMINATION.

(D) NO EFFECT

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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. 2 - 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
PRIMARY THRUSTERS CAN BE USED FOR THE VERNIER FUNCTION. SOME MISSION OBJECTIVES MAY NOT BE MET DUE TO HIGHER PROPELLANT CONSUMPTION RATE ON PRIMARY THRUSTERS. MICROGRAVITY EXPERIMENTS WILL BE DISRUPTED DUE TO HIGHER ACCELERATION RATE OF PRIMARY THRUSTERS.