

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - FWD-RCS

FMEA NO 05-6KF-2111 -1

REV: 11/03/

ASSEMBLY : FWD PCA 3
 E/N RI : RLR42C1201GM
 P/N VENDOR:
 QUANTITY : 1
 : ONE
 :

	VEHICLE	102	103	104
EFFECTIVITY:		X	X	X
PHASE(S):	FL	LO	X OO	X DO LS

CRIT. FUNC: L
 CRIT. HDW:

PREPARED BY:
 DES D SOVEREIGN
 REL J BEEKMAN
 QE

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS
 APPROVED BY:
 DES *D.S. R. B...*
 REL *Michael CL Fort 11-21-87*
 QE *[Signature]*

APPROVED BY (NASA):
 SSM *[Signature]*
 REL *[Signature]*
 QE *[Signature]*

EDDC 11/03/87
 For use in 11/03/87

ITEM:

CURRENT LIMIT RESISTOR (1.2 KILO OHM, 2 WATT) - FORWARD RCS REACTION JET DRIVER 2 (MANIFOLD L5/F5/R5 POWER CIRCUIT) - STIMULUS TO REMOTE POWER CONTROLLER 37.

FUNCTION:

CONDUCTS CIRCUIT CURRENT AND PROVIDES CURRENT LIMITING FOR A STIMULUS INPUT TO REMOTE POWER CONTROLLER (RPC) 37 FROM THE REACTION JET DRIVER FORWARD (RJDF) 2 VERNIER JET CONTROL (MANIFOLD L5/F5/R5) POWER CIRCUIT. 83V76A24A1R89.

FAILURE MODE:

OPEN, ELEMENT OPENS.

CAUSE(S):

STRUCTURAL FAILURE, VIBRATION, MECHANICAL SHOCK

EFFECT(S) ON:

(A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) LOSS OF REDUNDANCY.

(B) NO EFFECT FIRST FAILURE.

(C, D) NO EFFECT.

(E) FUNCTIONAL CRITICALITY EFFECT - PRIMARY USE IS FOR VERNIER THRUSTER OPERATION. IN ADDITION PROVIDES REDUNDANCY FOR PRIMARY THRUSTER USE. POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF CAPABILITY TO PERFORM EXTERNAL TANK SEPARATION AFTER LOSS OF ALL REACTION JET DRIVER POWER. REQUIRES 3 OTHER FAILURES (DRIVER RPC DIODE OPEN, TWO THRUSTERS FAIL BEFORE THE EFFECT IS MANIFESTED. FIRST FAILURE OF STRING NOT DETECTABLE IN FLIGHT DUE TO LACK OF MONITORING MEASUREMENTS.

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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 E, ITEM NO. 1 - RESISTOR, FILM.

(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.