

**SHUTTLE CRITICAL ITEMS LIST - ORBITER**

SUBSYSTEM : EPD&C - INSTRUMENTATION FMEA NO 05-6R -323000-2 REV: 8/16/88

ASSEMBLY : FWD PCA-1,2				CRIT. FUNC: 1R	
P/N RI : JANTX1N1204RA				CRIT. HDW: 3	
P/N VENDOR:		VEHICLE	102	103	104
QUANTITY : 4		EFFECTIVITY:	X	X	X
: (FOUR)		PHASE(S):	PL X LO X OO X DO X LS X		

PREPARED BY:		REDUNDANCY SCREEN:	A-PASS	B-FAIL	C-PASS
DES	L MUCHOW	APPROVED BY:	APPROVED BY (NASA):		
REL	R GREGORIAN	DES	<i>[Signature]</i>		
QE	E GUTIERREZ	REL	<i>[Signature]</i>		
		QE	<i>[Signature]</i>		

EPD&C  
 EOM 544  
 9/1/88  
 9/1/88

ITEM:  
 DIODE, 12A

FUNCTION:  
 PROVIDES BUS ISOLATION BETWEEN MAIN BUSES A & B FOR PCOMU-1 AND PCOMU-  
 POWER AND A LOGIC SIGNAL TO ENABLE NSP-1 OR NSP-2. DIODES ARE AT RP  
 OUTPUTS.  
 REFERENCE DESIGNATORS: 82V76A23CR9, CR10; 81V76A22CR36, CR39.

FAILURE MODE:  
 SHORT (END TO END)

CAUSE(S):  
 STRUCTURAL FAILURE (MECHANICAL STRESS, VIBRATION), CONTAMINATION,  
 ELECTRICAL STRESS, THERMAL STRESS, PROCESSING ANOMALY

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

(A) LOSS OF MAIN BUS ISOLATION.

(B,C) FIRST FAILURE : NO EFFECT

(D) FIRST FAILURE : NO EFFECT  
 SECOND FAILURE : LOSS OF MAIN BUS AND ASSOCIATED PATHS CAUSING  
 REDUNDANT RPC TO TRIP WHICH WILL CAUSE LOSS OF  
 SELECTED PCOMU AND LOSS OF NSP LOGIC  
 SIGNAL.  
 THIRD FAILURE : LOSS OF REDUNDANT PCOMU AND NSP LOGIC SIGNAL.  
 FOURTH FAILURE : LOSS OF PCOMU MEASUREMENT PROCESSING MAY CONCEAL  
 CRITICAL SUBSYSTEM FAILURE THAT COULD CAUSE LOSS  
 OF CREW/VEHICLE.

FAILS SCREEN "B" BECAUSE FAILURE IS MASKED BY REDUNDANT PATHS.

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DISPOSITION & RATIONALE:

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

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX F, ITEM NO. 2 - DIODE.

(B) GROUND TURNAROUND TEST

PCMU POWER REDUNDANCY TESTS AND NSP LOGIC SIGNAL ARE CHECKED PRIOR TO EVERY FLIGHT.

(E) OPERATIONAL USE

NONE