

**FAILURE MODES EFFECTS ANALYSIS (FMEA) – NON-CIL HARDWARE**  
**NUMBER:05-60-200501 -X**

**SUBSYSTEM NAME: EPD&C-GUIDANCE, NAVIGATION, & CONTROL (05-1)**  
**REVISION: 1 01/22/96**

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**PART DATA**

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	<b>PART NAME</b>	<b>PART NUMBER</b>
	<b>VENDOR NAME</b>	<b>VENDOR NUMBER</b>
LRU	:FWD PCA 3	V070-783360
SRU	:DIODE	JANTX1N1204RA

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**EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:**  
**DIODE 12 AMPS**

**REFERENCE DESIGNATORS:** 83V76A24CR27  
83V76A24CR28  
83V76A24CR29  
83V76A24CR30

**QUANTITY OF LIKE ITEMS:** 4  
FOUR

**FUNCTION:**  
PERMITS CONDUCTION AND PROVIDES MAIN BUS ISOLATION OF ELECTRICAL CURRENT FROM MAIN BUS A,B & C RPC'S TO ACCELEROMETER ASSY'S NO. 3 & 4 SINGLE INPUT POWER SUPPLY.

**FAILURE MODES EFFECTS ANALYSIS FMEA – NON-CIL FAILURE MODE**

**NUMBER: 05-60-200501-01**

**REVISION#: 2      06/20/97**

**SUBSYSTEM NAME: EPD&C-GUIDANCE, NAVIGATION, & CONTROL (05-1)**

**LRU: FWD PCA 3**

**CRITICALITY OF THIS**

**ITEM NAME: DIODE**

**FAILURE MODE: 1R3**

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**FAILURE MODE:**

OPEN, FAILS TO CONDUCT.

**MISSION PHASE:**

- LO LIFT-OFF
- DO DE-ORBIT

**VEHICLE/PAYLOAD/KIT EFFECTIVITY:**

- 102 COLUMBIA
- 103 DISCOVERY
- 104 ATLANTIS
- 105 ENDEAVOUR

**CAUSE:**

THERMAL STRESS, VIBRATION, MECHANICAL STRESS, ELECTRICAL STRESS, PROCESSING ANOMALY.

**CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO**

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**REDUNDANCY SCREEN**

- A) PASS
- B) N/A
- C) PASS

**PASS/FAIL RATIONALE:**

A)

B)

B SCREEN NOT APPLICABLE BECAUSE POWER PATH TO AA'S IS REDUNDANT. LOSS OF ANY OF THE FOUR AA'S IS READILY APPARENT DURING FLIGHT USE.

C)

**CORRECTING ACTION: NONE**

**CORRECTING ACTION DESCRIPTION:**

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- FAILURE EFFECTS -

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(A) SUBSYSTEM:

LOSS OF REDUNDANT POWER TO ONE AA.

(B) INTERFACING SUBSYSTEM(S):

NO EFFECT. AA STILL HAS REDUNDANT POWER PATH.

(C) MISSION:

NO EFFECT.

(D) CREW, VEHICLE, AND ELEMENT(S):

NO EFFECT. FIRST FAILURE. FOR THE SECOND FAILURE (LOSS OF ASSOCIATED REDUNDANT POWER PATH CAUSING LOSS OF TWO OF FOUR AA'S), REDUNDANCY MANAGEMENT (RM) WILL IDENTIFY AND RECONFIGURE AS REQUIRED. THE THIRD FAILURE (LOSS OF A THIRD AA) RESULTS IN LOSS OF VEHICLE AS RM CAN NOT TOLERATE THIS CONDITION.

(E) FUNCTIONAL CRITICALITY EFFECTS:

CRITICALITY 1R BECAUSE OF POSSIBLE LOSS OF CREW/VEHICLE DUE TO LOSS OF VEHICLE CONTROL CAUSED BY LOSS OF ACCELERATION FEEDBACK INFORMATION

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- APPROVALS -

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EDITORIALLY APPROVED  
EDITORIALLY APPROVED  
TECHNICAL APPROVAL

: RI  
: JSC  
: APPROVAL FORM

: *Robert Bell* 6/23/97  
: *A. Searcy* 9-9-97  
: 96-CIL-022\_05-60