

FAILURE MODES EFFECTS ANALYSIS (FMEA) - NON-CIL HARDWARE
 NUMBER:05-60-200701 -X

SUBSYSTEM NAME: EPD&C - GN&C

REVISION: 2 06/20/97

PART DATA

	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
LRU	:AFT PCA 3	V070-765240
LRU	:AFT PCA 4, 5, 6	V070-765280
LRU	:AFT PCA 3	V070-765330
SRU	:DIODE	JANTX1N1188R
SRU	:DIODE	JANTX1N1204RA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
 DIODE 12 AMP AND 35 AMP

REFERENCE DESIGNATORS: 56V76A133A2CR3
 56V76A133A2CR11
 56V76A136A4CR3
 56V76A138A4CR4
 56V76A136A4CR7
 56V76A136A4CR8
 54V76A134A4CR3
 54V76A134A4CR4
 54V76A134A4CR7
 54V76A134A4CR8
 55V76135A4CR3
 55V76135A4CR4
 55V76135A4CR7
 55V76135A4CR8

QUANTITY OF LIKE ITEMS: 14
 EIGHT EA. 12A
 SIX EA. 35A

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FUNCTION:

PERMITS CONDUCTION OF ELECTRICAL CURRENT AND PROVIDES MAIN BUS ISOLATION FROM MN DC BUSES A,B, & C THROUGH RPC'S TO ASA'S NO. 1,2,3 & 4 POWER SUPPLIES. DUAL INPUTS PROVIDED TO ASA POWER SUPPLIES.

FAILURE MODES EFFECTS ANALYSIS FMEA - NON-CIL FAILURE MODE

NUMBER: 05-60-200701-02

REVISION#: 2 06/20/97

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

LRU: AFT PCA 3, 4, 5, 6

CRITICALITY OF THIS

ITEM NAME: DIODE

FAILURE MODE: 1R3

FAILURE MODE:

SHORT (END TO END).

MISSION PHASE:

LO LIFT-OFF
DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:	102	COLUMBIA
	103	DISCOVERY
	104	ATLANTIS
	105	ENDEAVOUR

CAUSE:

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

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN

A) PASS
B) N/A
C) PASS

PASS/FAIL RATIONALE:

A)

B)

B SCREEN NOT APPLICABLE DUE TO ASA FUNCTIONAL REDUNDANCY. LOSS OF ANY OF THE FOUR ASA'S IS READILY APPARENT DURING FLIGHT USE.

C)

CORRECTING ACTION: NONE

CORRECTING ACTION DESCRIPTION:

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- FAILURE EFFECTS -

(A) SUBSYSTEM:

LOSS OF MAIN BUS ISOLATION.

(B) INTERFACING SUBSYSTEM(S):

NO EFFECT. ASA AND ASSOCIATED ISOLATION VALVE DRIVER STILL HAVE POWER.

(C) MISSION:

NO EFFECT

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

NO EFFECT, FIRST FAILURE. SECOND FAILURE (LOSS OF MAIN BUS, CAUSES RPC OF REDUNDANT PATH TO TRIP OFF) RESULTS IN THE LOSS OF ONE OF FOUR ASA'S OR ISOLATION VALVE DRIVER. THIRD FAILURE (LOSS OF ADDITIONAL ASA AND ASSOCIATED ISOLATION VALVE DRIVE DUE TO LOSS OF A SWITCH) COULD RESULT IN A POSSIBLE LOSS OF CREW/VEHICLE DUE TO MARGINAL CONTROL (TWO AGAINST ONE FORCE FIGHT ON THE REMAINING ACTUATOR CHANNELS).

(E) FUNCTIONAL CRITICALITY EFFECTS:

CRITICALITY 1R BECAUSE LOSS OF AEROSURFACE CONTROL DURING ATMOSPHERIC FLIGHT MAY CAUSE LOSS OF CREW/VEHICLE.

- APPROVALS -

EDITORIALLY APPROVED

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EDITORIALLY APPROVED

: JSC

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TECHNICAL APPROVAL

: APPROVAL FORM

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