

FAILURE MODES EFFECTS ANALYSIS (FMEA) - NON-CIL HARDWARE
NUMBER:05-60-GN0804 -X

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

PART DATA

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

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
DIODE 12 AMPS

REFERENCE DESIGNATORS: 54V76A134A3CR6
54V76A134A3CR7
56V76A133A3CR9
56V76A133A3CR10

QUANTITY OF LIKE ITEMS: 4
FOUR-TWO PER MAIN BUS

FUNCTION:
PERMITS ONE WAY CONDUCTION AND PROVIDES MAIN BUS ISOLATION OF ELECTRICAL CURRENT FROM ORBITER MAIN BUS A AND C THROUGH RPC'S TO SRB RGA 3 AND 4.

FAILURE MODES EFFECTS ANALYSIS FMEA - NON-CIL FAILURE MODE

NUMBER: 05-60-GN0804-01

REVISION#: 1 01/22/98

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

LRU: AFT PCA 3, 4

CRITICALITY OF THIS

ITEM NAME: DIODE

FAILURE MODE: 1R3

FAILURE MODE:

OPEN, FAILS TO CONDUCT.

MISSION PHASE: LO LIFT-OFF

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

REDUNDANCY SCREEN	A) PASS
	B) N/A
	C) PASS

PASS/FAIL RATIONALE:

A)

B)

B SCREEN NOT APPLICABLE DUE TO REDUNDANT POWER PATHS TO RGA'S. LOSS OF
ANY OF THE FOUR RGA'S IS READILY APPARENT DURING FLIGHT USE.

C)

CORRECTING ACTION: NONE

CORRECTING ACTION DESCRIPTION:

- FAILURE EFFECTS -

(A) SUBSYSTEM:

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LOSS OF REDUNDANT POWER TO ONE RGA.

(B) INTERFACING SUBSYSTEM(S):

NO EFFECT. RGA STILL HAS REDUNDANT POWER PATH.

(C) MISSION:

NO EFFECT.

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

NO EFFECT FIRST FAILURE. SECOND FAILURE (LOSS OF ASSOCIATED REDUNDANT POWER PATH) RESULTS IN LOSS OF TWO OF FOUR RGA'S. REDUNDANCY MANAGEMENT TOLERATES THIS CONDITION. THIRD FAILURE (LOSS OF A THIRD RGA) RESULTS IN LOSS OF VEHICLE AS REDUNDANCY MANAGEMENT CAN NOT TOLERATE THIS CONDITION.

(E) FUNCTIONAL CRITICALITY EFFECTS:

CRITICALITY 1R BECAUSE LOSS OF RATE FEEDBACK INFORMATION MAY CAUSE LOSS OF VEHICLE.

- APPROVALS -

EDITORIALLY APPROVED
EDITORIALLY APPROVED
TECHNICAL APPROVAL

: RI
: JSC
: APPROVAL FORM

: *[Signature]*
: *[Signature]* 2-12-96
: 95-CIL-004-RI