

FAILURE MODES EFFECTS ANALYSIS (FMEA) - NON-CIL HARDWARE

NUMBER:05-60-200601 -X

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

REVISION: 1 01/22/98

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	V070-765930
SRU	:DIODE	JANTX1N1204RA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
DIODE 12 AMPS

REFERENCE DESIGNATORS: 54V76A134A2CR9
54V76A134A2CR10
55V76A135A2CR9
55V76A135A2CR10
56V76A136A2CR9
56V76A136A2CR10
56V76A133A2CR10
56V76A133A2CR30

QUANTITY OF LIKE ITEMS: 8
EIGHT, 2 PER AFT PCA

FUNCTION:

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

FAILURE MODES EFFECTS ANALYSIS FMEA - NON-CIL FAILURE MODE

NUMBER: 05-60-200601-01

REVISION#: 1 01/22/96

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:

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/I 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 REDUNDANCY OF ATVC'S. LOSS OF ANY OF THE FOUR ATVC'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 ATVC

(B) INTERFACING SUBSYSTEM(S):

NO EFFECT. ATVC 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 CAUSING LOSS OF ONE OF FOUR ATVC'S), RESULTS IN LOSS OF ONE OF FOUR HYDRAULIC CHANNELS (FAILED CHANNEL IS ISOLATED). THIRD FAILURE (ALL THREE POLES OF SWITCH OPEN CAUSING LOSS OF AN ADDITIONAL ATVC AND ASSOCIATED MPS ISOLATION VALVE DRIVER) COULD RESULT IN LOSS OF CREW/VEHICLE.

(E) FUNCTIONAL CRITICALITY EFFECTS:

CRITICALITY 1R BECAUSE LOSS OF MPS AND SRB THRUST VECTOR CONTROL MAY CAUSE LOSS OF CREW/VEHICLE.

- APPROVALS -

EDITORIALLY APPROVED	: RI	: <i>Amde 1/31/96</i>
EDITORIALLY APPROVED	: JSC	: <i>Sam Dazey 2-12-96</i>
TECHNICAL APPROVAL	: APPROVAL FORM	: 95-CIL-004-R1