

FAILURE MODES EFFECTS ANALYSIS (FMEA) - CIL HARDWARE
NUMBER: 05-6BA-2578 -X

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

REVISION: 0 02/13/89

PART DATA

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
LRU	: FWD PCA 1	V070-783320
SRU	: DIODE	JANTX1N1204RA

EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
DIODE, BLOCKING (12 AMP)

REFERENCE DESIGNATORS: 81V76A22CR12

QUANTITY OF LIKE ITEMS: 1
ONE, FPCA 1

FUNCTION:
ISOLATES ORBITER MAIN DC BUS FROM GROUND DC BUS DURING GROUND
EXTENSION OF THE LANDING GEARS.

FAILURE MODES EFFECTS ANALYSIS FMEA - CIL FAILURE MODE

NUMBER: 05-6BA-2578- 01

REVISION#: 1 06/28/99

SUBSYSTEM NAME: EPD&C - LANDING GEAR CONTROL

LRU: FWD PCA 1

CRITICALITY OF THIS

ITEM NAME: DIODE

FAILURE MODE: 1R2

FAILURE MODE:

OPEN, FAILS TO CONDUCT, SHORT TO STRUCTURE (GROUND)

MISSION PHASE: DO DE-ORBIT

VEHICLE/PAYLOAD/KIT EFFECTIVITY:

102	COLUMBIA
103	DISCOVERY
104	ATLANTIS
105	ENDEAVOUR

CAUSE:

STRUCTURAL FAILURE (MECHANICAL STRESS, VIBRATION), ELECTRICAL STRESS, THERMAL STRESS, PROCESSING ANOMALY; CONTAMINATION (APPLIES ONLY TO SHORT TO STRUCTURE (GROUND)).

CRITICALITY 1/1 DURING INTACT ABORT ONLY? NO

REDUNDANCY SCREEN

A) PASS
B) FAIL
C) PASS

PASS/FAIL RATIONALE:

A)

B)

FAILS "B" SCREEN BECAUSE DIODE FAILURE IS NOT FLIGHT DETECTABLE.

C)

- FAILURE EFFECTS -

(A) SUBSYSTEM:

FIRST FAILURE - LOSS OF CAPABILITY TO DEPLOY LANDING GEAR HYDRAULICALLY. BACKUP PYRO IS AVAILABLE TO EXTEND LANDING GEARS.

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(B) INTERFACING SUBSYSTEM(S):

FIRST FAILURE - LOSS OF CAPABILITY TO DEPLOY LANDING GEAR HYDRAULICALLY.
BACKUP PYRO IS AVAILABLE TO EXTEND LANDING GEARS.

(C) MISSION:

FIRST FAILURE - NO EFFECT. SECOND FAILURE (BACKUP PYRO FAILURE) - POSSIBLE
LOSS OF CREW/VEHICLE DUE TO LOSS OF CAPABILITY TO EXTEND LANDING GEARS.

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

FIRST FAILURE - NO EFFECT. SECOND FAILURE (BACKUP PYRO FAILURE) - POSSIBLE
LOSS OF CREW/VEHICLE DUE TO LOSS OF CAPABILITY TO EXTEND LANDING GEARS.

(E) FUNCTIONAL CRITICALITY EFFECTS:

-DISPOSITION RATIONALE-

(A) DESIGN:

REFER TO APPENDIX F, ITEM NO. 2 - DIODE

(B) TEST:

REFER TO APPENDIX F, ITEM NO. 2 - DIODE

GROUND TURNAROUND TEST

ANY TURNAROUND CHECKOUT TESTING IS ACCOMPLISHED IN ACCORDANCE WITH
OMRSD.

(C) INSPECTION:

REFER TO APPENDIX F, ITEM NO. 2 - DIODE

(D) FAILURE HISTORY:

CURRENT DATA ON TEST FAILURES, FLIGHT FAILURES, UNEXPLAINED ANOMALIES, AND
OTHER FAILURES EXPERIENCED DURING GROUND PROCESSING ACTIVITY CAN BE
FOUND IN THE PRACA DATA BASE.

(E) OPERATIONAL USE:

NONE

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- APPROVALS -

EDITORIALLY APPROVED	: BNA	: <u>J. Komura 7/6/99</u>
TECHNICAL APPROVAL	: VIA APPROVAL FORM	: 96-CIL-011_05-6BA(2)