

SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM : EPD&C - INSTRUMENTATION FMEA NO 05-6R -325000-1 REV: 8/16/88

ASSEMBLY : FWD-PCA 1	CRIT. FUNC: 2R
P/N RI : JANTXIN1204RA	CRIT. HDW: 3
P/N VENDOR:	VEHICLE 102 103 104
QUANTITY : 2	EFFECTIVITY: X X X
: (TWO)	PHASE(S): PL X LO X OO X DC X LS X

PREPARED BY:	DES W S MCKEE	APPROVED BY:	DES <u>Lee C. [Signature]</u>	REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS	APPROVED BY (NASA):
REL R GREGORIAN	REL <u>[Signature]</u>	REL <u>[Signature]</u>	REL <u>[Signature]</u>	SSM <u>[Signature]</u>	REL <u>[Signature]</u>
QE E GUTIERREZ	QE EMG <u>[Signature]</u>	QE EMG <u>[Signature]</u>	QE <u>[Signature]</u>	SSM <u>[Signature]</u>	QE <u>[Signature]</u>

EPD&C REL [Signature]
 EPD&C SSM [Signature]

ITEM: DIODE, 12A RPC/MAIN BUS ISOLATION.

FUNCTION:
 PROVIDES ISOLATION BETWEEN MAIN BUSES A AND B. THESE DIODES ARE LOCATED AT BOTH RPC OUTPUTS, AND ARE WIRE "OR'D" TOGETHER TO PROVIDE REDUNDANT POWER FOR THE PAYLOAD DATA INTERLEAVER (PDI).
 REFERENCE DESIGNATOR: 81V76A22CR40, CR41.

FAILURE MODE:
 FAILS OPEN, FAILS TO CONDUCT

CAUSE(S):
 STRUCTURAL FAILURE (VIBRATION, MECHANICAL STRESS), PROCESSING ANOMALY
 THERMAL STRESS, ELECTRICAL STRESS.

EFFECT(S) ON:
 (A) SUBSYSTEM (B) INTERFACES (C) MISSION (D) CREW/VEHICLE

(A) LOSS OF ONE OF TWO REDUNDANT POWER PATHS TO PDI.
 (B,C,) FIRST FAILURE : NO EFFECT.
 SECOND FAILURE: POSSIBLE LOSS OF MISSION DUE TO LOSS OF PAYLOAD DATA.
 (D) NO EFFECT

FAILS SCREEN "B" BECAUSE FAILURE IS MASKED BY REDUNDANT POWER PATH.

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DISPOSITION & RATIONALE:

(A) DESIGN (B) TEST (C) INSPECTION (D) FAILURE HISTORY (E) OPERATIONAL USE

(A-D) DISPOSITION AND RATIONALE

REFER TO APPENDIX F, ITEM NO. 2 - DIODE.

(B) GROUND TORMAROUND TEST

VERIFIED DURING PDI POWER REDUNDANCY TEST.

(E) OPERATIONAL USE

NONE