SHUTTLE CRITICAL ITEMS LIST - ORBITER

SUBSYSTEM :EPD&C - INSTRUMENTATION FMEA NO 05-6R -323000-1 REV:8/16/88

ASSEMBLY :FWD PCA-1,2 CRIT. FUNC: 1R
P/N RI :JANTX1N1204RA CRIT. HDW: 3
P/N VENDOR: VEHICLE 102 103 104
QUANTITY :4 EFFECTIVITY: X X X
:(FOUR) PHASE(S): PL X LO X OO X DO X LS X
:

REDUNDANCY SCREEN: A-PASS B-FAIL C-PASS

PREPARED BY: APPROVED BY: APPROVED BY (NASA):
DES L MUCHOW DES SSN
REL R GREGORIAN REL REL
QE E GUTIERREZ QE QE

ITEM:
DIODE, 12A

FUNCTION:
PROVIDES BUS ISOLATION BETWEEN MAIN BUSES A & B FOR PCMMU-1 AND PCMMU-
POWER AND A LOGIC SIGNAL TO ENABLE NSP-1 OR NSP-2. DIODES ARE AT RF
OUTPUTS.
REFERENCE DESIGNATORS: 82V76A23CR9,CR10; 81V76A22CR36,CR39.

FAILURE MODE:
OPEN, FAILS TO CONDUCT

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

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

(A) LOSS OF REDUNDANT POWER TO THE OPERATING PCMMU AND REDUNDANT POWER FOR THE LOGIC SIGNAL FOR NSP IN USE.

(B,C) FIRST FAILURE : NO EFFECT

(D) FIRST FAILURE : NO EFFECT
SECOND FAILURE: LOSS OF POWERED PCMMU AND LOGIC SIGNAL TO BOTH NSP'S BY LOSS OF THE ASSOCIATED DIODE.
THIRD FAILURE : LOSS OF REDUNDANT PCMMU AND LOGIC SIGNAL TO THE NSP.
FOURTH FAILURE: LOSS OF PCMMU MEASUREMENT PROCESSING MAY CONCEAL CRITICAL SUBSYSTEM FAILURE WHICH MAY RESULT IN LOS OF CREW/VEHICLE.

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FAILS SCREEN "B" - FAILURE IS MASKED BY REDUNDANT PATHS.

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 TURNAROUND TEST
PCMMU POWER REDUNDANCY TESTS AND MSP LOGIC SIGNAL TESTS ARE CHECKED PRIC
TO EVERY FLIGHT.

(E) OPERATIONAL USE
NONE