Circuit 1 of 4 (one circuit for each side of the BEA)

90 W total / 4 sides of BEA = 22.5 W per side

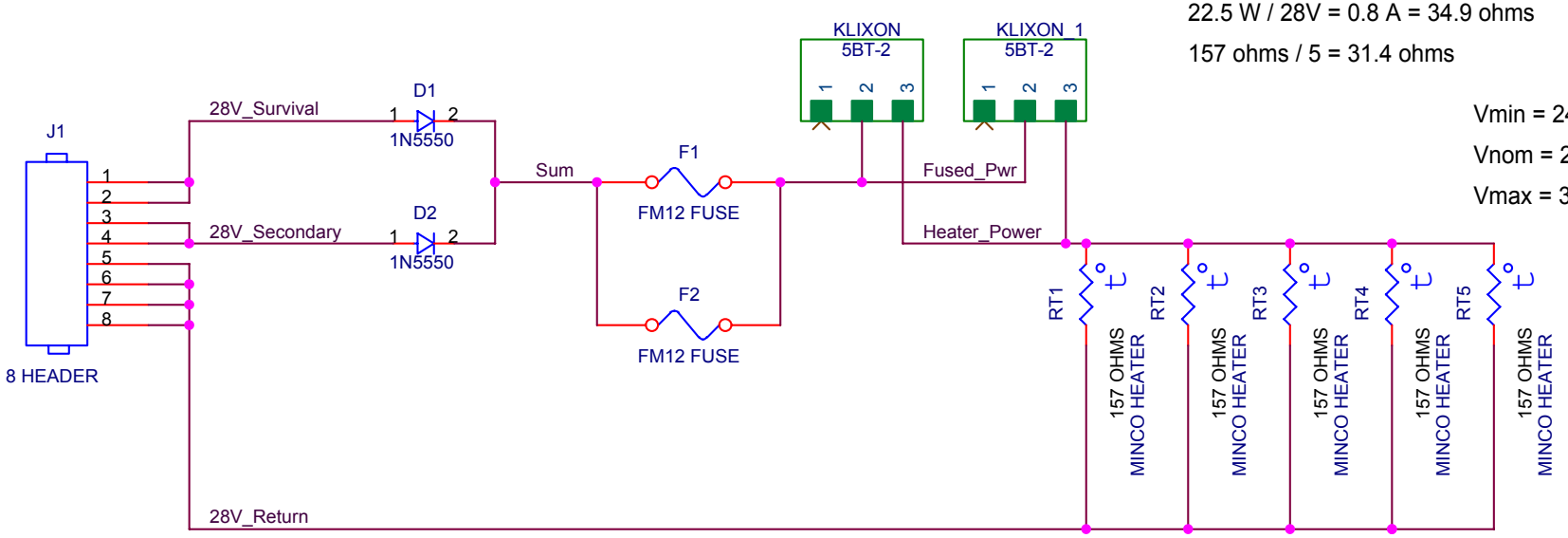
22.5 W / 28V = 0.8 A = 34.9 ohms

157 ohms / 5 = 31.4 ohms

Vmin = 24V = 18.34W x 4 = 73.4 W

Vnom = 28V = 24.97W x 4 = 100 W

Vmax = 32V = 32.6W x 4 = 130 W



Design is completely passive - no active control is required for survival heaters. Two sources of heater power are incorportated. Power fusing and bimetallic thermostats are redundant for reliability. Minco Kapton heaters are GSFC approved for flight. A custom design may be required. Note also that the EMI susceptibility of the FREE card must be addressed in any actual design.

(1) Diodes are NASA PPL JANTXV1N5550 (rated 9 A) This is used to diode-OR the two 28V supplies.

(2) Fuses are MIL-PRF-23419, FM12A72V5.0A, 0.023 ohm max; paralleled for redundancy.

(3) Thermostats are Klixon 5BT Type per MIL-PRF-24236, -6.7 deg C setpoint; paralleled for redundancy

(4) Heaters are Minco Kapton per GSFC S-311-P-079, PTFE insulated, stranded 26 AWG wire leads, 157 ohms (such as HK5187R157L12)

(5) Connector is place-holder only for now. Wire is 24 AWG.

Title: ACD PMT Heater Circuit Concept / D. Sheppard		
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