

Termination Cracking in MIL PRF 55342 Chip Resistors

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A standard feature of incoming inspection for Space flight Programs is to perform a destructive physical analysis (DPA) for electronic components. The industry standard for DPA has long been MIL-STD-1580. As part of the long awaited revision of this Standard, a requirement has been added to cross-section a lot sample for examination of the chip resistor's layered structure. This addition was motivated by multiple instances of industry alerts due to lifting or missing areas of the resistor terminations. Raytheon's early deployment of this additional process has revealed a new anomaly, an apparent cracking or separation within the resistor termination's nickel barrier. This paper will describe this anomaly and the results of an analysis/evaluation of the impact of this feature.