



## AMPTEK, INC.

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### SCREENING OPTIONS FOR HYBRIDS

#### **STANDARD: "AMPTEK HIGH RELIABILITY SCREENING"**

- Nondestructive Bond Pull (100%), MIL-STD-883, Method 2023
- Precap Visual: MIL-STD-883, Method 2017, Condition H, low magnification, high magnification
- Sealing: Welded, Hermetic Seal
- Marking: Date Code and Serial Number
- Stabilization Bake: MIL-STD-883, Method 1008, Condition C. +150 °C, 24 hours minimum
- Temperature Cycle: MIL-STD-883, Method 1010, Condition C. Min. T = -65 °C to +150 °C, 10 minutes each extreme, 5 minutes maximum transfer time, 10 cycles
- Centrifuge: MIL-STD-883, Method 2001, Condition B. YI axis; 5,000 to 10,000 G's depending on package size
- Electrical Test: As per Specifications
- Burn-In Test: MIL-STD-883, Method 1015, 160 hours at +125 °C
- Fine Leak Test: MIL-STD-883, Method 1014, Condition A. Rejection if leak rate in excess of  $5 \times 10^{-7}$  cc/sec.
- Gross Leak Test: MIL-STD-883, Method 1014, Condition C. Perfluorocarbon
- Electrical Test: As per Specification
- External Visual: MIL-STD-883, Method 2009

#### **OPTION 1: Includes STANDARD Screening plus the following:**

- Particle Impact Noise Detection (PIND), MIL-STD-883, Method 2020
- Radiographic, MIL-STD-883, Method 2012
- Final Electrical Tests at +70 °C and -25 °C

#### **OPTION 1+ Screening: Includes STANDARD Screening, plus Option 1 plus the following:**

- SEM on all active components, MIL-STD-883, Method 2018
- Package evaluation, MIL-STD-883, Sub-Groups 1-4 and 5
- Substrate Evaluation, MIL-PRF-38534 (Appendix C)
- Customer Pre-cap Visual Inspection (Optional)
- Extended Burn-In: MIL-STD-883, Method 1015, Total of 240 hours at +125 °C
- Lot Qualification: RGA, MIL-STD-883, Method 1018 on 1 to 3 pieces
- Lot Qualification: 1,000 hours Steady State Life Test at 125 °C on 4 to 10 pieces

#### **OPTION 2: NASA Goddard Space Flight Center Preferred Parts List (PPL-20), GSFC S-311-P698**

includes **STANDARD** Screening, plus **OPTION 1** plus the following:

- Pre-assembly Parts Qualification (Element Evaluation)
- Package Evaluation
- Customer Precap Visual Inspection
- Destructive Bond Pull Test on sample devices
- Die Shear Test on sample devices
- Moisture Test
- Optional extended Burn-In
- Pre and Post Burn-In Deltas
- Additional Quality Control Inspections (QCI)
- Lot Qualification (1,000 hours Steady State Life Test at 125 °C on sample devices)

#### **OPTION 3: Customer supplied Source Control Document**

#### **NOTES:**

- 1) Option 1: 50 piece minimum order for each hybrid type.
- 2) Option 1+ Screening, Option 2 or Option 3: not always available, please contact Sales Office.
- 3) Price and delivery upon request.