

# Application Report

**BRUSHWELLMAN**  
ENGINEERED MATERIALS

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**Industry: Electronics**  
**Product: Beryllium Copper Strip**

Several properties of beryllium copper alloys are utilized for heat sinks attached to metal-cased semiconductors used in electronic systems. When the application involves high vibration, Brush Wellman Alloy 3 beryllium copper provides the best spring characteristics of all snap-on heat sinks. The tight grip provides the retention necessary for military and high reliability applications.

### Design Criteria

- **Excellent Thermal Conductivity**
- **High Spring Force**
- **Excellent Formability in the Mill-Hardened Condition**
- **Good Fatigue Strength**

The thermal conductivity of Alloy 3 (144 Btu/ft hr. °F) is superior to other copper alloys of similar strength.

The heat sinks shown are made of Brush Wellman Beryllium Copper Alloy 3 hard temper strip, heat treated to HT temper after forming. In these designs, the bend radii approach 180°, requiring a high degree of formability in the material. Two of the fins shown have a heat absorbing black ebonol conversion coating finish.

For additional information, contact:

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