



Designation: F375 – 89 (Reapproved 2005)

## Standard Specification for Integrated Circuit Lead Frame Material<sup>1</sup>

This standard is issued under the fixed designation F375; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers the special requirements for metal strip to be used to fabricate integrated-circuit lead frames by stamping or photochemical milling.

1.2 The metals that are applicable to these parts include copper and copper alloys, ferrous alloys usually containing nickel or cobalt or chromium, nickel and nickel alloys, and other metallic materials.

1.3 The general chemical, physical, and mechanical property requirements of these materials are covered by other ASTM specifications (specifically Specifications B103/B103M, B122/B122M, B152/B152M, B162, B465, F15, F30, F31, F49 and F68), and these should be consulted for properties and tempers that are different for the different metals. For metals for which no ASTM specification is available, other specifications should be adopted by agreement of the parties concerned.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

### 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

B103/B103M Specification for Phosphor Bronze Plate, Sheet, Strip, and Rolled Bar

B122/B122M Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar

B152/B152M Specification for Copper Sheet, Strip, Plate, and Rolled Bar

B162 Specification for Nickel Plate, Sheet, and Strip

B465 Specification for Copper-Iron Alloy Plate, Sheet, Strip, and Rolled Bar

E112 Test Methods for Determining Average Grain Size

F15 Specification for Iron-Nickel-Cobalt Sealing Alloy

F30 Specification for Iron-Nickel Sealing Alloys

F31 Specification for 42 % Nickel-6 % Chromium-Iron Sealing Alloy

F49 Specification for Molybdenum Strip for Electron Tubes

F68 Specification for Oxygen-Free Copper in Wrought Forms for Electron Devices

### 3. Ordering Information

3.1 Orders for material under this specification shall include the following information:

3.1.1 Quantity of each size,

3.1.2 Material and specification number appropriate to the material (see 2.1),

3.1.3 Temper or mechanical properties (see 4.1),

3.1.4 Dimensions: thickness, width, length if applicable (see 6.2-6.4),

3.1.5 How furnished: coils and coil size or lengths (see 10.1),

3.1.6 ASTM designation, referencing this specification number, and the fabricating process to be used,

3.1.7 Certification or test report requirements (see 11.1), and

3.1.8 Packing and marking requirements (see 12.1 and 12.2).

### 4. Materials and Manufacture

4.1 The materials covered by this specification shall conform to the chemical, physical, and mechanical property requirements prescribed in the material specification covering the metal or alloy and the temper (see 2.1).

4.2 The material shall conform to the requirements for lead frames as prescribed in this specification and shall be characteristically suitable for fabrication into lead frames by the fabricating process to be specified. Any special requirements relating to the material properties or the fabricating process, to be specified by the user, shall be agreed upon between the supplier and purchaser.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F01 on Electronics and is the direct responsibility of Subcommittee F01.03 on Metallic Materials.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.