



*The Institute for
Interconnecting
and Packaging
Electronic Circuits*

IPC-DR-570A

General Specification for 1/8 Inch Diameter Shank Carbide Drills for Printed Boards

IPC-DR-570A

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A standard developed by the Institute for Interconnecting
and Packaging Electronic Circuits

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- Show relationship to DFM & DFE
- Minimize time to market
- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feed back system on use and problems for future improvement

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- Increase time-to-market
- Keep people out
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The material in this standard was developed by the Drilling and Routing Subcommittee (4-12) of the Dry Fabrication Processes Committee (4-10) of the Institute for Interconnecting and Packaging Electronic Circuits.



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Users of this standard are encouraged to participate in the development of future revisions.

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Acknowledgment

Any Standard involving a complex technology draws material from a vast number of sources. While the principle members of the Drilling and

Routing Subcommittee of the Dry Fabrication Processes Committee are shown below, it is not possible to include all of those who assisted in

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General Specification for 1/8 Inch Diameter Shank Carbide Drills for Printed Boards

1.0 SCOPE

This document establishes definitions for terms and requirements for solid carbide twist drills with four-fluted drill points used in the fabrication of printed boards.

1.1 Classification For the purposes of this specification, drills will be classified as follows:

- Type 1** Step down—With drill body diameters up to 0.125 inch in diameter.
- Type 2** Step up—With drill body diameters 0.126 inch and above in diameter.
- Type 3** Small drills—Drill body diameters of 0.0135–0.020 inches.
- Type 4** Microdrills—Drill body diameters less than 0.0135 inches.

1.2 For metric conversion see attached table.

2.1 IPC

IPC-T-50 Terms and Definitions

3.0 REQUIREMENTS

3.1 Terms and Definitions The definition of terms used herein shall be in accordance with IPC-T-50 and the following.

Back Taper Back taper is the constant decrease of the drill diameter along with drill body length. (See feature E of Figure 1.)

Body Land Clearance Body land clearance is that portion of the land diameter which was decreased to provide clearance behind the margin. Size of the clearance depends on drill manufacturer. (See feature K of Figure 1 and 2.)

Carry-Out Carry-out is the back portion of the flute produced by the sweep of the grinding wheel. (See feature F of Figure 1 and 2.)

Chamfer Angle Chamfer angle is the angle at the end of 0.125 inch diameter shank that assists in loading and minimizing wear of drill holders and collets. (See feature L of Figure 1 and 2.)

Chipped Point Chipped point is a condition whereby the maximum chips on the point leading edge exceed a specified maximum allowable value (see paragraph 3.2.15.4).

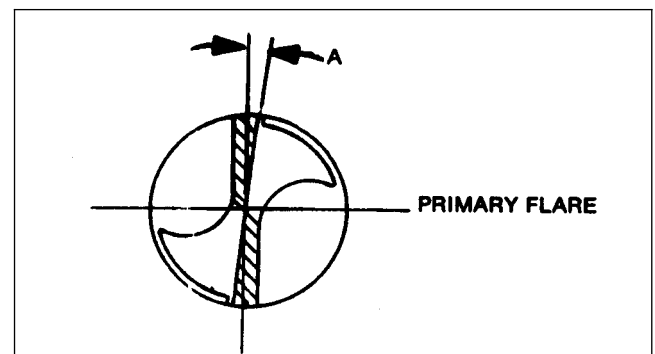
Chisel-Edge Angle The angle between the leading cutting edge and the intersection of the primary and secondary relief facets of the drill point, measured in a plane perpendicular to the drill axis. (See feature N of Figure 1 and 2.)

Drill Body Length Total length of actual drill diameter as measured from the drill point to intersection of the drill diameter and shoulder angle on Type 1. On Type 2, the drill body length is the entire drill diameter including the drill point (See feature B of Figure 1 and 2.)

Drill Diameter Drill diameter is the actual size of the drill body. (See feature A of Figure 1 and 2.)

Drill Point Concentricity Total indicated reading measured on the chisel point when rotating the drill shank in the V-block (see 3.2.25).

Flare Primary Primary flare is a condition whereby the primary relief is wider at the drill periphery than it is in the drill center.



Gap Gap is the condition of misalignment of the intersection lines between the primary relief facet and the secondary relief facet, when the primary relief facets do not meet.

