

0.30mm Series 460 Drill Design Revision

Kyocera Tycom Corporation 04/10/07

Abstract

Kyocera Tycom Corporation (KTC) continues to improve its high performance drill product line in order to meet the continued challenge of increased panel thickness and copper content. KTC introduces the latest design revision of the 0.30mm undercut product family (Series 460). This redesign provides improved hole location, hole clearing, and strength while maintaining hole quality. This document offers the results of the work the Kyocera Tycom Development Lab performed in order to provide the PCB market with a higher performing 0.30mm Undercut Drill. It is the intention of KTC to use this improved design as the short flute 0.30mm offering to replace **0.200"** and 0.220" flute lengths.

Product is currently available; KTC will work with customers to transition to the new product in a timely manner.

KTC offers the improved undercut drill design in a 0.217" flute length the part numbers are:

ringed
ringless
460.0118.217
460-0118.217

KTC Qualification (Series 460 Comparison)

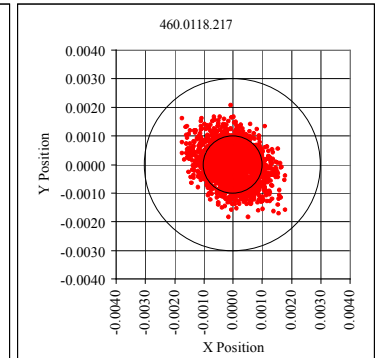
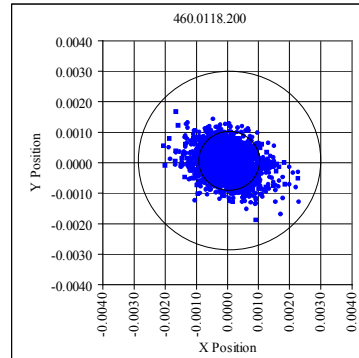
Lab and beta site tests were conducted to ensure the product performed at an improved level that is both reliable and repeatable.

Parameters / Comparative Results

Hole Location

Material: High Tg
 Thickness: 0.126" Hit Count: 1,500
 Copper Content: 20 Layers

		True Position Deviation		
	Part Number	Mean	StdDev	Median
	current 460.0118.200	0.00072	0.00038	0.00070
	proposed 460.0118.217	0.00071	0.00038	0.00070
	p-value: 0.001			



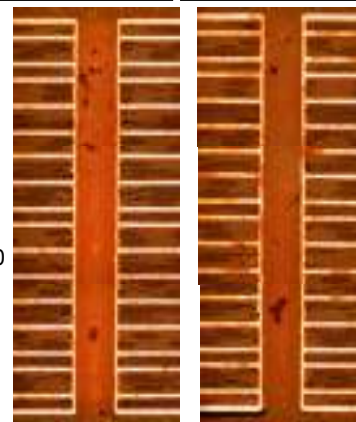
Hole Wall Quality – Comparison vs. 460.0118.220

Material: High Tg
 Thickness: 0.155" Hit Count: 2,000
 Copper Content: 28 Layers

	Ave Max Gouging (in)	Ave Max Nail Heading	Plugged Holes
460.0118.220	0.00042	152%	11.00%
460.0118.217	0.00045	155%	0.05%
p-value	0.019	0.003	0.000

460.0118.220

460.0118.217



Tool Life / Robustness – Comparison vs. 460.0118.220

Material: High Tg
 Thickness: 0.155"
 Copper Content: 28 Layers

		Infeed at Breakage	
	Mean	StdDev	
460.0118.220	222	33.0	
460.0118.217	328	24.6	
p-value	0.000		

