

0.35mm Series 460 / 480 Drill Design Revision

Kyocera Tycom Corporation 7/06/07

Abstract

As the PCB Industry continues to demand more from and challenge the existing drill bits, Kyocera Tycom Corporation (KTC) continues to improve the designs to meet those demands. Stronger, more accurate tools providing better hole quality is the constant demand on tools. KTC introduces the latest design revision, the 0.35mm diameter. This document offers the results of the work the Kyocera Tycom Development Lab and Applications Engineering Team performed in order to provide the PCB market with a higher performing 0.35mm Undercut Drill.

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 designs in two flute lengths, 0.217" and 0.277"; their respective part numbers are:

	<i>ringed</i>	<i>ringless</i>
	460.0138.217	460-0138.217
	480.0138.277	480-0138.277

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

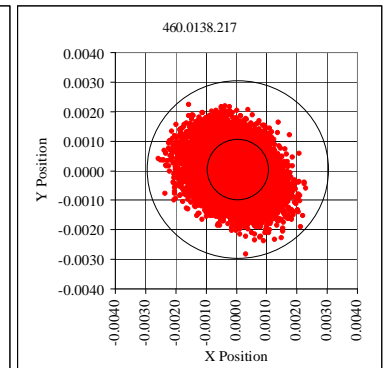
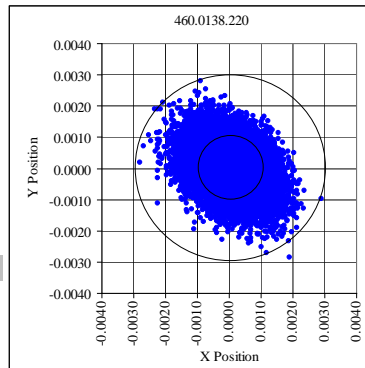
Hole Location

Material: High Tg
 Thickness: 0.124"
 Copper Content: 20 Layers

Hit Count: 1,500

True Position Deviation

	Part Number	Mean	StdDev	Median
	current 460.0138.220	0.00088	0.00047	0.00082
	proposed 460.0138.217	0.00086	0.00045	0.00081
	p-value: 0.000			

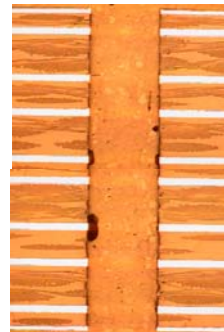


Hole Wall Quality

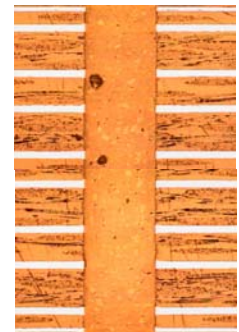
Material: High Tg
 Thickness: 0.124"
 Copper Content: 20 Layers

Hit Count: 1,500

	Ave Max Gouging (in)	Ave Max Nail Heading	Plugged Holes per Million
460.0138.220	0.00028	194%	0
460.0138.217	0.00027	187%	0
p-value	0.027	0.000	n/a



460.0138.220



460.0138.217

Tool Life / Robustness

Material: High Tg
 Thickness: 0.124"
 Copper Content: 20 Layers

	Infeed at Breakage	
	Mean	StdDev
460.0138.220	362	46.6
460.0138.217	400	0.0
p-value	0.003	

