

Performance of ULF coated drill



ULFコートドリル加工事例

ϕ 0.09 Ultra micro-hole drilling performance

Work material: **DS-7409HG B(LEM)** (Halogen-free material , **Low-CTE**)
t0.1 (Double sided 6/6 μ mCu) **5 panels / stack**

Entry sheet: LE900

N:350,000 min⁻¹ F:3.5 m/min f:10 μ m/rev

Set life:6,000 hits

Work material : DOOSAN CORPORATION ELECTRO-MATERIALS BG
Entry sheet : MITSUBISHI GAS CHEMICAL COMPANY, INC.



ULF $\phi 0.09$

application: FBGA / BGA / device substrate etc...

ULFコートドリル $\phi 0.09\text{mm}$ 加工事例

用途: 半導体パッケージ、各種デバイス用基板 等



Drilling condition [加工条件]

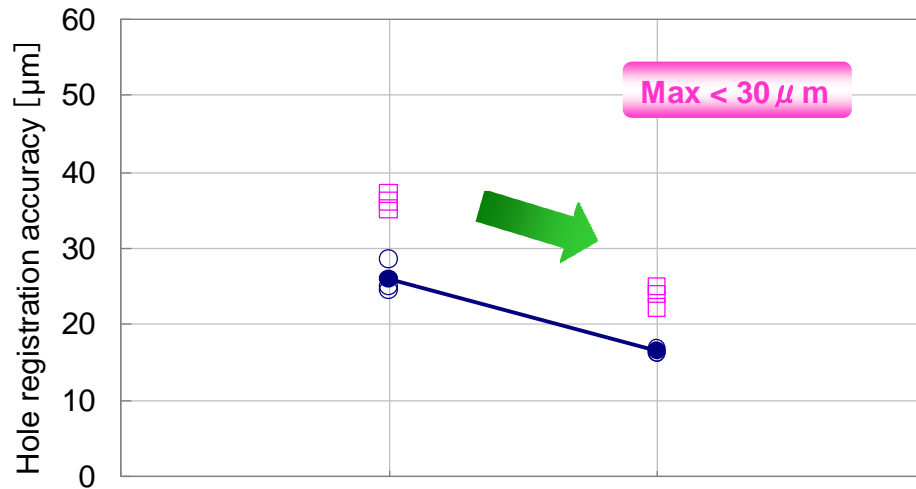
Work material : **DS7409HG B(LEM)** t0.1 (Double sided 6/6 μm Copper) **5 panels / stack**

Entry sheet : LE900 Back-up board : PS-1185

N : 350,000 min^{-1} F : 3.5 m/min f : 10 $\mu\text{m/rev}$ Set life : 6,000 hits

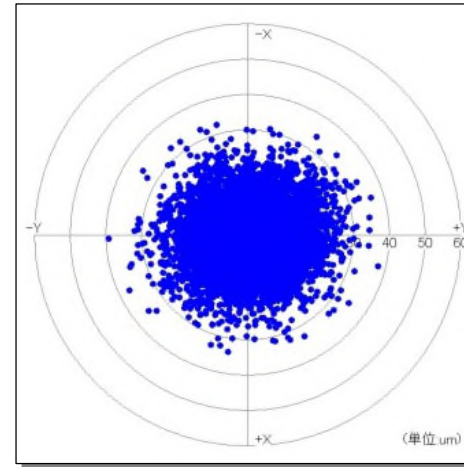
Performance of ULF coated drill [ULFコートドリルの性能]

■ Hole registration accuracy [穴位置精度]

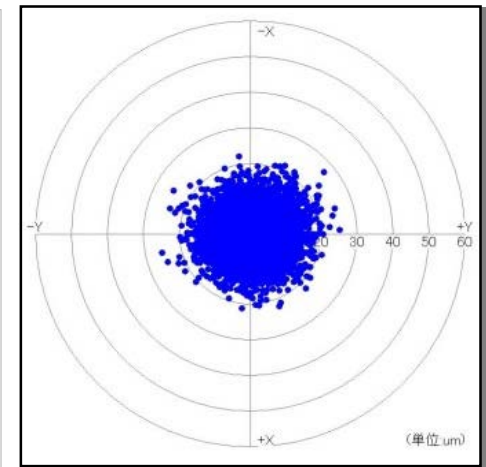


Conventional non-coat

ULF model



Conventional non-coat



ULF model



ULF ϕ 0.09

application: FBGA / BGA / device substrate etc...

ULFコートドリル ϕ 0.09mm 加工事例

用途: 半導体パッケージ、各種デバイス用基板 等



Drilling condition [加工条件]

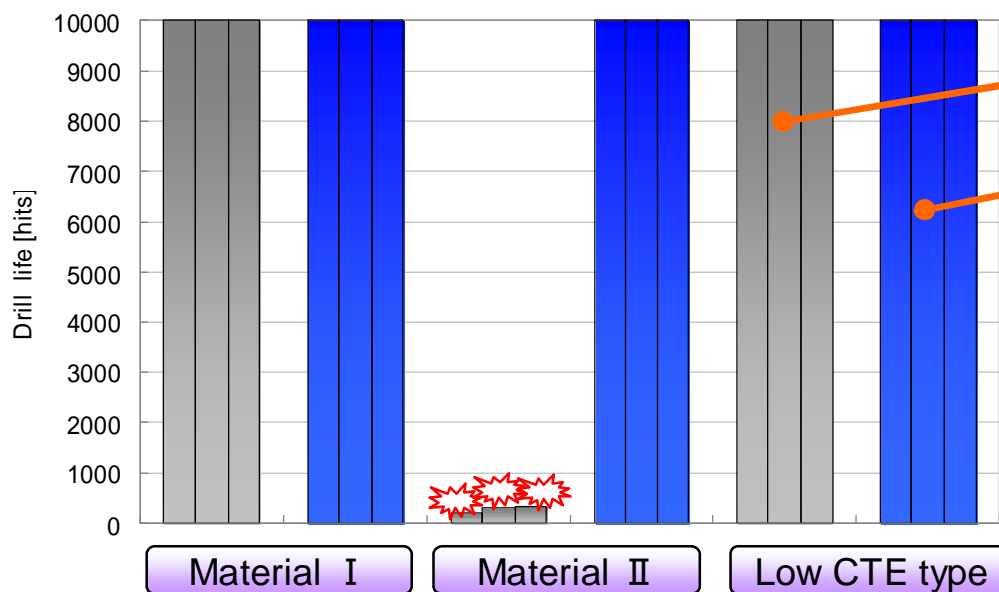
Work material : **DS7409HG B(LEM)** t0.1 (Double sided 6/6 μ m Copper) **5 panels / stack**

Entry sheet : LE900 Back-up board : PS-1185

N : 350,000 min⁻¹ F : 3.5 m/min f : 10 μ m/rev Set life : 6,000 hits

Performance of ULF coated drill [ULFコートドリルの性能]

■ Drill breakage resistance [折損寿命]



Conventional non-coat

ULF model

Improved breakage problem with various materials
 基材違いでの折損問題を改善

Low-CTE material
 Promising hole quality!
 低熱膨張基板 (Low-CTE type) における
 安定した品質の確保を実現