

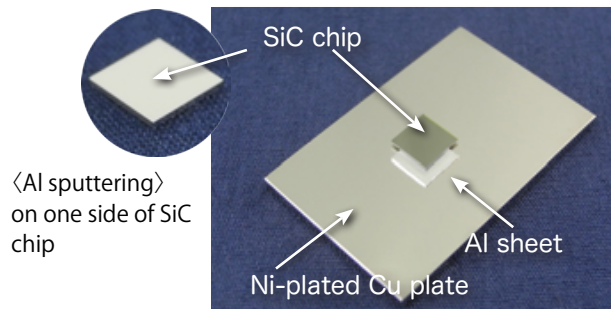
# technical information



〈Bonding of SiC by sandwiching Al sheet at 4 points by one shot at room temperature in atmosphere (III)〉

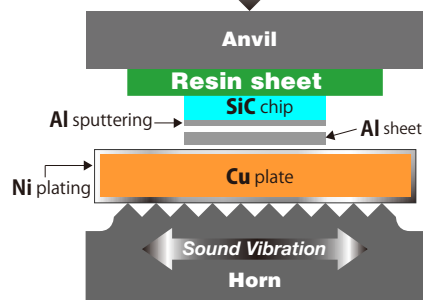
## <Sound Excitation Bonding>

An [Al sheet] is sandwiched between a SiC chip and a Ni-plated Cu plate by SEB. Atoms are excited by SoundPower energy. <SiC>, <Al>, <Ni>, <Cu> are diffused and bonded **without metal nano paste**. SEB passed heat shock test, and bending test to see whether parts are bonded on whole surface. <Patents pending>



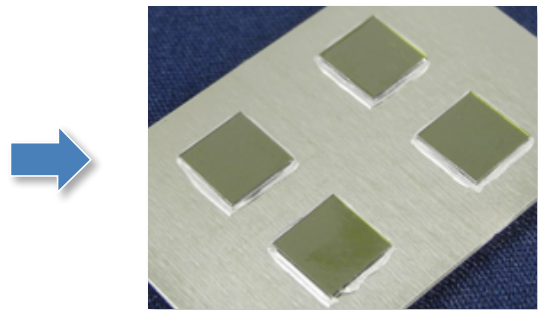
[Before bonding]

Down and Press

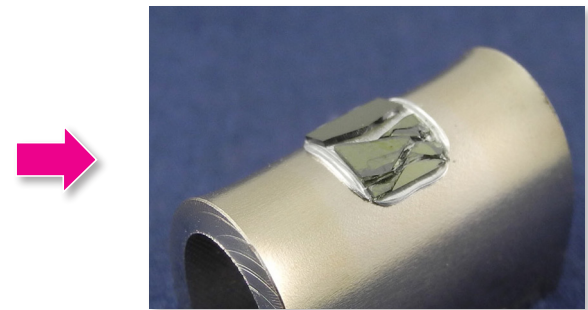


[Materials]

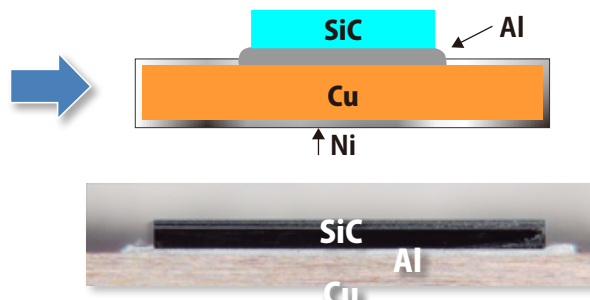
- ★ SiC chip (□5.0 /t=0.37mm)
- ★ Al sheet (t=100 μm)
- ★ Ni-plated Cu plate (20 x 30 /t=2mm)  
Ni plating (t=3.0 μm)



[After bonding at 4 points by one shot]

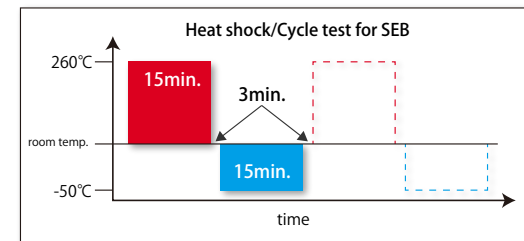


[Bending test to check chip is bonded]



[Observing cross section]

After bonding with sound energy produced by SoundPower, [rapid heating/cooling] as heat shock [+260 ~ -50 °C] was repeated for <1000 cycles>. But still now there is no change.



[Heat shock/Cycle test]

**ULTEX**  
SoundPower Laboratory