MICROSTRUCTURE INSPECTING DEVICE, AND MICROSTRUCTURE INSPECTING METHOD

ABSTRACT

A microstructure inspecting device 10 which measures a damping characteristic value of a moving portion of a microstructure includes a pressure wave generating device 1 and a pulse generating device 2 which apply an impact to the moving portion without directly contacting the microstructure, and a vibrometer 4 which measures a displacement of the moving portion for a predetermined period of time after the start of free vibration of the moving portion without contacting the moving portion. The pressure wave generating device 1 is a sound wave generating element of thermal excitation type, a piezoelectric sound wave generating element, or an electromagnetic vibration element, and is driven by a pulse signal of the pulse generating device 2. The pressure wave generating device 1 using the sound wave generating element of thermal excitation type may include a thermally conductive substrate, a heat-insulating layer formed of nano-crystal silicon in one principal surface of the substrate, an insulating layer formed on the heat-insulating layer, and a conductive layer formed on the insulating layer and emitting heat when being supplied with current containing alternating current components.

Fig. 1