URN etd-0407109-183721-1709
Author Poo-Sui Luong
Author's Email Address No Public.
Statistics This thesis had been viewed 54 times. Download 0 times.
Department
Year 2007
Semester 1
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Steady State Heat Conduction Problem of Two Dimensional
Date of Defense 0000-00-00
Page Count 100

Keyword
Image method
steady state

Abstract
Layered media are widely used in many engineering applications such as the composite material and the coating layer of the IC chip. This paper investigates the steady state problem of infinite plane, semi-infinite plane, bimaterial, layer and composite layer media. The theoretical full-field solution can be obtained with aid of Fourier transform technique and image method.
In this study, a two-dimensional problem of steady state conduction for a composite finite wedge is solved. The Green's function of infinite composite wedge was obtained by using Mellin transform technique. Explicit closed-form solutions of finite wedge and composite wedge are derived in conjunct with the image method and conformal mapping. The composite wedges consist of two materials with equal apex angle and are perfect bonded at the interface. The applied loadings include either concentrated heat source in the material or distributed temperature along the boundary. The boundary conditions are considered to be isothermal or thermal isolation. Numerical results of full-field heat flux and temperature distribution are presented and discussed in detail.
Advisory Committee Ru-Li Lin - advisor

Files No Any Full Text File.
Date of Submission 2008-01-30