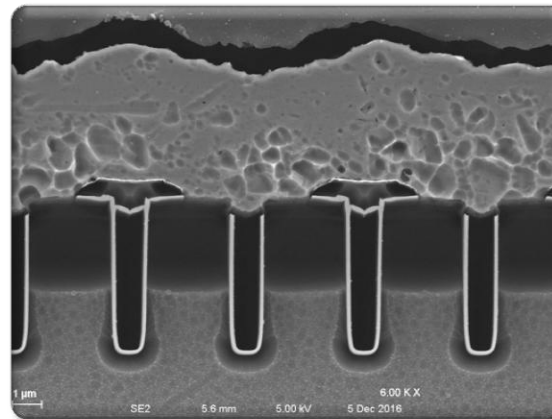


# TCS IGBT Die

## Temperature Sensor and Current Sensor IGBT Die



# Product Analysis Report

This report is protected by copyright and may not be by way of trade or otherwise, be copied, reproduced, re-sold, lent, hired out in any form without express written permission from Shanghai Industrial  $\mu$ Technology Research Institute (Hereinafter referred to as SITRI). SITRI always endeavors to provide accurate and reliable information to its customers. However, it is not possible to guarantee absolute accuracy of all information contained herein and SITRI can assume no liability for inadvertent errors in this report.

This report was prepared for our Clients' private study, analysis or research and for no other purpose. The information contained in this report may describe technical innovations, which are the subject of patents held by third parties. The disclosure by SITRI of any such information is in no form whatsoever an inducement to infringe any patent. SITRI assumes no liability for patent infringement arising from the use of the information contained in this report.

To Know



- Device Summary.....3**
  - Device Summary
- Die Information.....4**
  - Die Photo with Dimensions
  - Die Corner OM Image
- Cell Area Analysis.....6**
  - Die Cell Area SEM Cross Section with Detail Layer Dimensions
  - Die Cell Area SEM Cross Section after Stained with Body Dimensions
- Cross Section EDS Analysis.....17**
  - EDS Analysis of Passivation/Metal/ILD/Oxide/Substrate/Trench Poly
  - EDS Analysis of Backside Metal
- Guard Ring Area Analysis.....25**
  - Die Guard Ring Area SEM Image after Stained with Dimensions
- Temperature Sensor Analysis.....41**
  - Temperature Sensor OM Plan View Image with Dimensions

- Temperature Sensor SEM Plan View Image after De-Layer to Metal
- Temperature Sensor SEM Plan View Image after De-Layer to Oxide
- Temperature Sensor Cross Section 1 SEM Image with Dimensions
- Temperature Sensor Cross Section 2 SEM Image with Dimensions
- Temperature Sensor Diode Cross Section Stained Analysis
- Current Sensor Analysis.....88**
  - Current Sensor OM Plan View Image with Dimensions
  - Current Sensor SEM Plan View Image after De-Layer to Metal
  - Current Sensor SEM Plan View Image after De-Layer to Oxide
  - Current Sensor Cross Section 1 SEM Image with Dimensions
  - Current Sensor Cross Section 2 SEM Image with Dimensions
- Die Cell Area Edge Analysis.....114**
  - Die Cell Edge Area OM Plan View Image
  - Die Cell Edge Area Cross Section SEM Image with Dimensions
- Major Findings .....119**
  - Points