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IC Knowledge – Automotive Cost Modeling

Automotive is a growing application for semiconductors. At IC Knowledge we have a growing number of customers modeling automotive parts with our cost models. There are specific automotive requirements that need to be accounted for during modeling. There are also different models that may be required depending on what is being modeled.

Models for Automotive Applications

IC Knowledge produces three cost models that may be useful for automotive applications:

1. The IC Cost and Price Model is used to model low power silicon integrated circuits (IC). The IC Model is the choice for microcontrollers, memory, and general logic ICs in automotive applications.
2. The Discrete and Power Products Cost and Price Model is used to model high power silicon integrated circuits and discrete devices. For automotive applications this includes power MOSFETs and IGBTs used in power switching applications and various power integrated circuits.
3. The MEMS Cost and Price Model is used to model MEMS products. For automotive applications the MEMS model is used to model accelerometers, gyros, pressure sensors, tire pressure monitor systems and other MEMS based sensors.

Accounting for Automotive Requirements

The main difference between automotive parts and commercial parts is the additional testing required for automotive. Whereas commercial parts are typically just tested at room temperature, automotive parts are typically tested at room temperature, and hot and cold temperatures. Both the IC and Power Model have “Product Level” selections on the ‘Defaults’ sheet. The default product level is commercial but for automotive the selection should be switched to automotive. Selecting automotive will add additional temperature testing to the test flow. In the MEMS model on the ‘Main Selection’ sheet the user has the ability to select automotive testing as well.

Conclusion

The IC Knowledge cost modeling product line offers a complete suite of models for automotive semiconductor and MEMS products. Making the right selections in the model for product class (IC and Power model) or automotive test (MEMS model) enables the user to model a variety of automotive grade parts.