

List of Contents

	Page
Abstract (Chinese).....	i
Abstract.....	ii
List of Contents.....	iii
Chapter 1. Introduction.....	1
1.1 Motivation	
1.2 Literature Review	
1.3 Research Objectives	
1.4 Organization	
Chapter 2. Quality-Yield Measure for Very Low Fraction Defective.....	7
2.1 Comparisons of Yield and Quality Yield	
2.2 Estimation of Quality Yield	
2.3 Lower Confidence Bounds on Quality Yield	
2.4 Application to Amplified Pressure Sensor (APS)	
2.5 Q-Yield Calculation for Pressure Sensor Product	
Chapter 3. Bootstrap Approach for Estimating Quality Yield.....	19
3.1 Estimation of Quality Yield for Arbitrary Underlying Distributions	
3.2 The Bootstrap Methodology	
3.3 Distribution Plot of the Q-yield Estimator	
3.4 An Application on LED	
Chapter 4. Quality Yield Measure with Asymmetric Tolerances.....	31
4.1 Quality Yield with Asymmetric Tolerances	
4.2 Comparison of Yield, Q-Yield, and PCIs with Asymmetric Tolerances	
4.3 Distributional Properties of the Estimated Y_q	
4.4 An Application Example	
Chapter 5. Distributional and Inferential Properties of Loss Indices.....	52
5.1 Estimating Process Relative Inconsistency Loss	
5.2 Estimating Process Relative Off-Target Loss	
5.3 Estimating Process Expected Relative Loss	
5.4 Testing Process Capability Based on Process Loss	
Chapter 6. Measuring Process Loss for Asymmetric Tolerances.....	71
6.1 A New Generalization L_e''	
6.2 Comparisons of L_e'' and L_e	
6.3 Estimation of the Process Loss Indices for Asymmetric Tolerances	
6.4 An Application Example	
Chapter 7. Conclusions.....	83
Appendix A.....	85
Appendix B.....	87
References.....	88