

TABLE OF CONTENTS

1.0 PURPOSE OF ESD TR5.3.1-01-18	1
1.1 SCOPE AND PURPOSE OF TODAY'S FICDM TEST METHOD.....	1
1.1.1 <i>Scope from ANSI/ESDA/JEDEC JS-002 – Joint CDM Document.....</i>	<i>1</i>
1.1.2 <i>Purpose from ANSI/ESDA/JEDEC JS-002 – Joint CDM Document</i>	<i>1</i>
2.0 THE REAL WORLD CDM EVENT MODEL	1
3.0 FICDM EQUIVALENT CIRCUIT	2
3.1 FICDM TESTER NON-REPEATABILITY	4
3.1.1 <i>Air Discharge Effects on FICDM Testing.....</i>	<i>5</i>
3.1.2 <i>Humidity Effects on FICDM Testing</i>	<i>5</i>
4.0 CCDM EQUIVALENT CIRCUIT	6
5.0 CCDM and FICDM TESTER COMPARISON.....	8
5.1 WAVEFORM CAPTURE COMPARISON OF CCDM AND FICDM METHODS.....	8
5.2 CURRENT VERSUS VOLTAGE VARIABILITY BETWEEN CCDM AND FICDM METHODS.....	9
5.3 CURRENT VERSUS TARGET CAPACITANCE VARIABILITY BETWEEN CCDM AND FICDM METHODS	9
5.4 RISE TIME VERSUS TARGET CAPACITANCE COMPARISON OF CCDM AND FICDM METHODS	10
5.5 HUMIDITY COMPARISON OF CCDM AND FICDM METHODS	11
6.0 EXPECTED CORRELATION BETWEEN FICDM AND CCDM	12
7.0 CORRELATION MEASUREMENTS	13
7.1 CORRELATION RESULTS - VENDOR A	13
7.2 CORRELATION RESULTS - VENDOR B	14
7.3 CORRELATION RESULTS - SUMMARY	15
8.0 SUMMARY	15
9.0 FUTURE WORK ON A CCDM METHOD	16
9.1 CCDM TESTING USING AN IMPEDANCE TRANSFORMER.....	17
9.2 EXTERNAL TEST PULSE TESTING	17
10.0 REFERENCES	17
10.1 OTHER REFERENCES OF NOTE	18
 TABLES	
Table 1: JEDEC FICDM Versus CCDM I_{pk} and Q Correlation	15

FIGURES

Figure 1: Real World CDM Event Model	2
Figure 2: FICDM Tester Equivalent Circuit.....	3
Figure 3: Plot of Peak CDM Current with Package Area up to 2600 mm ² Showing a Saturating Trend	4
Figure 4: Plot of Peak CDM Current for Package Area up to 1000 mm ² Showing a Linear Trend.....	4
Figure 5: FICDM I _{pk} Consecutive Discharge Repeatability	5
Figure 6: FICDM I _{pk} Waveform Repeatability, 500 Volts, 10% RH, 100 Discharges	6
Figure 7: FICDM I _{pk} Waveform Repeatability, 500 Volts, 60% RH, 100 Discharges	6
Figure 8: CCDM Equivalent Circuit.....	7
Figure 9: CCDM Waveform Capture Analysis	8
Figure 10: CCDM and FICDM I _{pk} Versus Voltage, 100 Discharges	9
Figure 11: CCDM and FICDM I _{pk} Versus Capacitance, 100 Discharges	10
Figure 12: CCDM and FICDM Rise Time Versus Capacitance	10
Figure 13: CCDM and FICDM I _{pk} Versus Humidity at 500 Volts, 100 Discharges	11
Figure 14: CCDM and FICDM I _{pk} Versus Humidity at 500 Volts, 100 Discharges	11
Figure 15: CCDM and FICDM I _{pk} Versus Humidity at 100 Volts, 100 Discharges	12