IEC QUALITY ASSESSMENT SYSTEM (IECQ)

For rules and details of the IECQ visit www.iecq.org

Schedule of Scope to Certificate of Approval

Independent Testing Laboratory

IECQ Certificate No.: IECQ-L CEP 25.0001

CB Certificate No.: IECQ-L 2025.007

№	Products，Materials	Items,Parameter		Title， Code of specification, standard or method used
		NO.	Name	
1	IC（MOS random access memories）	1	ALL “0 ”and“1 ”function test	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		2	Function test of calibration board	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		3	Output high level voltage V_{OH}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		4	Output low level Voltage V_{OL}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		5	Input load current I_{LI}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		6	Operative state power current I_{cc}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		7	Maintain state power current I_{ccs}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
2	IC（voltage regulators）	1	Output voltage V_o	Semiconductor integrated circuits.Measuring method of voltage regulators GB/T 4377-2018
		2	Voltage regulation rate S_V	Semiconductor integrated circuits.Measuring method of voltage regulators GB/T 4377-2018

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		3	Current regulation Rate S_T	Semiconductor integrated circuits.Measuring method of voltage regulators GB/T 4377-2018
3	IC（analogue switch）	1	Analog switch operating range V_A	Semiconductor integrated circuits.Measuring method of analogue switch GB/T 14028-2018
4	IC（DC-DC Convertor）	1	Output voltage V_o	The measuring methods of DC/DC converters for hybrid integrated circuits SJ 20646-1997
		2	Output current I_o	The measuring methods of DC/DC converters for hybrid integrated circuits SJ 20646-1997
		3	Voltage regulation rate S_V	The measuring methods of DC/DC converters for hybrid integrated circuits SJ 20646-1997
		4	Current regulation rate S_I	The measuring methods of DC/DC converters for hybrid integrated circuits SJ 20646-1997
5	IC（microprocessors）	1	Input high level current I_{IH}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		2	Input low level current I_{IL}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		3	Static working current I_{SB}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		4	Dynamic working current I_A	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		5	Function test	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998

		6	Output high level voltage V_{OH}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		7	Output low level voltage V_{OL}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		8	Iutput high level voltage V_{IH}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
		9	Iutput low level voltage V_{IL}	Semiconductor devices Integrated circuits Part 2:Digital integrated circuits GB/T 17574-1998
6	Resistance（Fixed resistor、Metalster、Film resistor、Wire-wound resistor、Potentiometer）	1	Resistance value	Finxed resistors for use in electronic equipment Part 1: Generic specification GB/T 5729-2003
		2	Terminal resistance	Potentiometers for electronic equipment Part 1: General specification GB/T 15298-1994
7	Diode（Zener diode、Switch-diode、Rectifier diode、Schottky Diode、TVS 、LED、Silicon power switching diode）	1	Forward voltage	Semiconductor devices discrete devices and integrated circuits Part 2:Rectifier diodes GB/T 4023-2015
		2	Reverse current	Semiconductor devices discrete devices and integrated circuits Part 2:Rectifier diodes GB/T 4023-2015
		3	Breakdown voltage	Semiconductor devices discrete devices and integrated circuits Part 2:Rectifier diodes GB/T 4023-2015
		4	Working voltage	Semiconductor devices-Discrete devices. part3:singal (including switching) and regulator diodes GB/T 6571-1995

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		5	Differential resistance	Semiconductor devices-Discrete devices. part3:singal (including switching) and regulator diodes GB/T 6571-1995
8	Triode（Switching triode、Power Transisitor）	1	Collector- Base electrode breakdown voltage	Semiconductor discrete devices and dntegrated circuits. Part 7: Bipolar transistors GB/T 4587-2023
		2	Emitter -Base electrode breakdown voltage	Semiconductor discrete devices and dntegrated circuits. Part 7: Bipolar transistors GB/T 4587-2023
		3	Collector-Base electrode cutoff current	Semiconductor discrete devices and dntegrated circuits. Part 7: Bipolar transistors GB/T 4587-2023
		4	Collector-Emitter Saturation voltage	Semiconductor discrete devices and dntegrated circuits. Part 7: Bipolar transistors GB/T 4587-2023
		5	Emitter-Base electrode cutoff current	Semiconductor discrete devices and dntegrated circuits. Part 7: Bipolar transistors GB/T 4587-2023
		6	Collector-Emitter Cutoff current	Semiconductor discrete devices and dntegrated circuits. Part 7: Bipolar transistors GB/T 4587-2023
		7	Forward current transfer ratio of common-emitter	Semiconductor discrete devices and dntegrated circuits. Part 7: Bipolar transistors GB/T 4587-2023

9	Field effect transistor （JFET、JGFET）	1	Drain-source breakdown voltage	Transistor Electrical Test Methods For Semiconductor Devices Part 3: Test Methods 3000 Through 3999 MIL-STD-750-3-2019 Method 3407.1
		2	Threshold voltage	Semiconductor devices.Discrete devices. Part 8:Field-effect transistors GB/T 4586-1994 Chapter IV Article 6
		3	Gate cutoff current	Semiconductor devices.Discrete devices. Part 8:Field-effect transistors GB/T 4586-1994 Chapter IV Article 2
		4	Drain current	Semiconductor devices.Discrete devices. Part 8:Field-effect transistors GB/T 4586-1994 Chapter IV Article 3
		5	On-state-drain source resistance	Semiconductor devices.Discrete devices. Part 8:Field-effect transistors GB/T 4586-1994 Chapter IV Article 16
10	AEC-Q100 Integrated circuits Test	1	Biased steady-state damp heat	Steady-state temperature-humidity bias life test JEDEC JESD22-A101D.01-2021
		2	Biased-HAST	Highly Accelerated Temperature and Humidity Stress Test(HAST) JEDEC JESD22-A110E.01-2021
		3	Autoclave	Acccelerated Moisture Resistance-Unbiased Autoclave JEDEC JESD22-A102E-2015
		4	Unbiased-HAST	Acccelerated Moisture Resistance-Unbiased HAST JEDEC JESD22-A118B.01-2021

		5	Temperature-Humidity （without Bias）	Steady-State Temperature-Humidity Bias Life Test JEDEC JESD22-A101D.01-2021
		6	High Temperature Storage Life	High Temperature Storage Life JEDEC JESD22-A103E.01-2021
		7	High Temperature operating Life	Temperatue,Bias,and Operating Life JEDEC JESD22- A108G-2022
		8	Early Life Failure Rate	Early Life Failure Rate AEC-Q100-008A-2023
		9	NVM Endurance,Data Retention,and Operational Life	Non-Volatile Memory Program/Erase Endurance, Data Retention,and Operational life test AEC-Q100-005D1-2012
		10	Solderability	Solderability Tests for Component Leads,Terminations，Lugs,Terminals and Wires J-STD-002E-2017
		11	Physical Dimensions	Physical Dimensions JEDEC JESD22-B100B-2003
		12	Power and Temperature Cycling	Power and Temperature Cycling JESD22-A105D-2020
11	AEC-Q101 Discrete devices Test	1	Visual	External Visual JEDEC JESD22- B101D-2022
		2	High Temperature Revere Bias test	Test Methods for Semiconductor Discrete Devices Part 2 MIL-STD-750-1A-2016 Method 1038.5, 1039.4
		3	High Temperature Gate Bias test	Temperatue,Bias,and Operating Life JEDEC JESD22 A108G-2022
		4	Unbiased Highly Accelerated Stress Test	Acccelerated Moisture Resistance-Unbiased HAST JEDEC JESD22-A118B.01-2021

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		5	Highly Accelerated Stress Test	Highly Accelerated Temperature and Humidity Stress Test(HAST) JEDEC JESD22-A110E.01-2021
		6	High Humidity High Tem. Reverse Bias	Steady-State Temperature-Humidity Bias Life Test JEDEC JESD22-A101D.01-2021
		7	Intermittent Operational Life	Test Method Standard Environmental Test Methods For Semiconductor Devices. Part 1:Test Methods 1000 Through 1999 MIL-STD-750-1A-2016 Method 1037.3
		8	Physical Dimension	Physical Dimensions JEDEC JESD22-B100B-2003
		9	Resistance to Solder Heat	Evaluation Procedure for Determing Capability Bottom Side Board Attach by Full Body Solder Immersion of Small Surface Mount SOLID state Devices JEDEC JESD22-A111B-2018
				Resistance to Solder Shock for Through-Hole Mounted Devices JEDEC JESD22-B106E-2016
		10	Power and Temperature Cycling	Power and Temperature Cycling JESD22-A105D-2020
12	AEC-Q104 Multichip Modules	1	Biased steady-state damp heat	Steady-state temperature-humidity bias life test JEDEC JESD22-A101D.01-2021
		2	Biased-HAST	Highly Accelerated Temperature and Humidity Stress Test(HAST) JEDEC JESD22-A110E.01-2021
		3	Autoclave	Acccelerated Moisture Resistance-Unbiased Autoclave JEDEC JESD22-A102E-2015

		4	Unbiased-HAST	Acccelerated Moisture Resistance-Unbiased HAST JEDEC JESD22-A118B.01-2021
		5	Temperature-Humidity （without Bias）	Steady-State Temperature-Humidity Bias Life Test JEDEC JESD22-A101D.01-2021
		6	High Temperature Storage Life	High Temperature Storage Life JEDEC JESD22-A103E.01-2021
		7	High Temperature operating Life	Temperatue,Bias,and Operating Life JEDEC JESD22- A108G-2022
		8	Early Life Failure Rate	Early Life Failure Rate AEC-Q100-008A-2023
		9	NVM Endurance,Data Retention,and Operational Life	Non-Volatile Memory Program/Erase Endurance, Data Retention,and Operational life test AEC-Q100-005D1-2012
		10	Solderability	Solderability Tests for Component Leads,Terminations，Lugs,Terminals and Wires J-STD-002E-2017
		11	Physical Dimensions	Physical Dimensions JEDEC JESD22-B100B-2003
		12	Low Temperature Storage Life	Low Temperature Storage Life JEDEC JESD22-A119-2015
		13	Board Level Reliability	Thermal Cycling Test Method for Fatigue Life Characterization of Surface Mount Attachments IPC 9701B-2022
13	IC reliability test	1	External dimensions	Test Methods and Procedures for Microelectronic Devices GJB 548C-2021 Method 2016

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		2	External visual	Test Methods and Procedures for Microelectronic Devices GJB 548C-2021 Method 2009.2
		3	Low temperature storage	Environmental testing for electric and electronic products. Part 2:Test methods. Tests A:Cold GB/T 2423.1-2008
		4	Highy Accelerated Temperature and Humidity Stree Test（HAST）	Semiconductor devices. Mechanical and climatic test methods. Part 4:Damp heat,steady state,highly accelerated stress test(HAST) GB/T 4937.4-2012