

DS1993L-F5+ | [Data Sheet](#)
Qualification Summary:

STRESS TEST	TEST CONDITIONS ^{*1}	REFERENCE TEST METHOD	NUMBER OF LOTS	SAMPLE SIZE PER LOT	RESULTS
High-Temperature Operating Life (HTOL)	$T_J \geq 125^\circ\text{C}$, 1000 hrs	JESD22-A108	3	77	Pass
High-Temperature Storage Life (HTSL)	$T_A \geq 150^\circ\text{C}$, 1000 hrs	JESD22-A103	3	25	Pass
MSL Preconditioning	Per MSL	J-STD-020 JESD22-A113	—	—	Classification
Temperature Cycling (TC)	-65°C to $+150^\circ\text{C}$, 500 cycles	JESD22-A104	3	25	Pass
Temperature Humidity Bias (THB) or Biased HAST (HAST)	$85^\circ\text{C}/85\%\text{RH}$, 1000 hrs or $130^\circ\text{C}/85\%\text{RH}$, 96 hrs, respectively	JESD22-A101 or JESD22-A110, respectively	3	25	Pass
Autoclave (AC) or Unbiased HAST (UHAST)	$121^\circ\text{C}/100\%\text{RH}$, 96 hrs or $130^\circ\text{C}/85\%\text{RH}$, 96 hrs, respectively	JESD22-A102, JESD22-A118, respectively	3	25	Pass
ESD Human Body Model (HBM)	$T_A = 25^\circ\text{C}$	JS-001	1	3	See Data Sheet/ Contact Us
ESD Charge Device Model (CDM)	$T_A = 25^\circ\text{C}$	JS-002	1	3	See Data Sheet/ Contact Us
Latch-Up	Per JESD78	JESD78	1	3	Pass

1. Or equivalent JEDEC conditions

For FIT/MTTF estimates, visit [FIT/MTTF](#)

Important Notice and Disclaimer

The Information provided in this report is generic data which reflects the overall reliability of the technology grouping for the selected product. Where a device of interest is not sampled, it is valid to use the reliability data (“Information”) of the technologies to which the part belongs, since all parts within the same family are designed to the same rules and manufacturing as controlled by SPC.

Analog Devices products must never be operated outside the specified datasheet limits and conditions, and this Information must never be used as an indication of the reliability of a product outside of those specified data sheet limits and conditions. THE INFORMATION PROVIDED IN THIS DOCUMENT IS PROVIDED FOR REFERENCE ONLY AND “AS IS” AND ANALOG DEVICES DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NONINFRINGEMENT. Analog Devices grants you permission to use this Information only for the development of an application that uses the Analog Devices products described in the Information. No license is granted to any other intellectual property right owned by Analog Devices or any third party. Analog Devices does not guarantee compliance of the safety and security applications on the integrating system. You are solely responsible for: (1) ensuring the appropriate Analog Devices products are selected for the integrating application; (2) designing, validating and testing the integrating application; and (3) ensuring the integrating application meets applicable standards and any other safety, security, regulatory or other requirements. You implement safety critical applications at your own risk, including such applications for life support, implantable medical devices, space, transportation, nuclear, and other safety applications. Where malfunction of the product results in personal injury, death, property damage or environmental harm, you agree to defend, indemnify, and hold Analog Devices harmless from all damages, claims, suits or expenses. Analog Devices assumes no liability for direct, indirect, special, incidental, consequential or punitive damages or for infringements of patents or other rights of third parties.

ADI's [Terms and Conditions of Sale](#) govern the sale of Analog Devices products.