

Temperature Specifications

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Temperature Specifications

- Operating Temperature Range

- Temperatures are the **ambient** temperature the device is operated in
- Parts are designed to operate over one or more of these ranges
- Parts are guaranteed to operate to spec within these ranges

• Commercial:	0°C to 70°C	32°F to 158°C
• Industrial:	-40°C to 85°C	-40°F to 185°C
• Automotive:	-40°C to 125°C	-40°F to 257°C
• Military:	-55°C to 125°C	-67°F to 257°C

Temperature Specifications

- Storage Temperature
 - Typically, equal to or broader than the maximum operating temperature
 - Parts can be damaged if stored outside these temperatures
 - There is a time factor involved also, though this is rarely included in the specs

6.1 Absolute Maximum DC Ratings

[Table 4] Absolute Maximum DC Ratings

Symbol	Parameter	Rating	Units	NOTE
V_{DD}	Voltage on V_{DD} pin relative to V_{SS}	-0.4 V ~ 1.80 V	V	1,3
V_{DDQ}	Voltage on V_{DDQ} pin relative to V_{SS}	-0.4 V ~ 1.80 V	V	1,3
V_{IN}, V_{OUT}	Voltage on any pin relative to V_{SS}	-0.4 V ~ 1.80 V	V	1
T_{STG}	Storage Temperature	-55 to +100	°C	1, 2

NOTE :

1. Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.
2. Storage Temperature is the case surface temperature on the center/top side of the DRAM. For the measurement conditions, please refer to JESD51-2 standard.
3. V_{DD} and V_{DDQ} must be within 300mV of each other at all times; and V_{REF} must be not greater than $0.6 \times V_{DDQ}$. When V_{DD} and V_{DDQ} are less than 500mV; V_{REF} may be equal to or less than 300mV.