

ICS 31.080.01
CCS L40



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 48164.1-2026

**Semiconductor devices - Reliability test method for silicon
carbide metal-oxide semiconductor field effect transistors (SiC
MOSFET) - Part 1: Test method for bias temperature instability**

半导体器件 碳化硅金属氧化物半导体场效应晶体管 (SiC MOSFET) 可靠性试验
方法 第1部分: 偏置温度不稳定性试验方法

(English Translation)

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Foreword

GB/T 48164.1-2026 is a recommended national standard (GB/T) of the People's Republic of China, issued on 28 August 2026 by the State Administration for Market Regulation and the Standardization Administration of China, with effect from 1 March 2027.

The document adopts an international standard (ISO or IEC).

It is under the responsibility of the Ministry of Industry and Information Technology (Electronics).

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1 Scope

Part 1 of this series describes a reliability test method for bias temperature instability in silicon carbide metal-oxide semiconductor field effect transistors, known as SiC MOSFETs. These power devices are used in electric vehicle drives, chargers, solar inverters and industrial power conversion, and threshold stability under bias is a concern for long-term reliability. The document is relevant to semiconductor manufacturers, reliability and qualification engineers, test laboratories and customers who review device data.

It adopts an international standard and takes effect on 1 March 2027. As a GB/T document it is recommended and voluntary. Power electronics suppliers and buyers can use a common method to compare results from different devices. Qualification plans for power modules, onboard chargers and inverter stages can reference it when describing how gate threshold drift is evaluated.