

Silicon carbide technology patent activity remained strong in Q1, says KnowMade

New patent publications in Q1/2026 exceed 460 for SiC power devices & modules and 320 for substrates & epiwafers.

In first-quarter 2026, patent activity in silicon carbide (SiC) technology remained particularly dynamic, both upstream in substrates and epitaxial wafers and downstream in power devices and modules, according to technology intelligence and IP strategy

consulting company KnowMade in two new patent monitoring services dedicated to SiC technology: the SiC Substrates & Epitaxial Wafers Patent Monitor and the SiC Power Devices & Modules Patent Monitor. More than 460 new patent publications were pub-

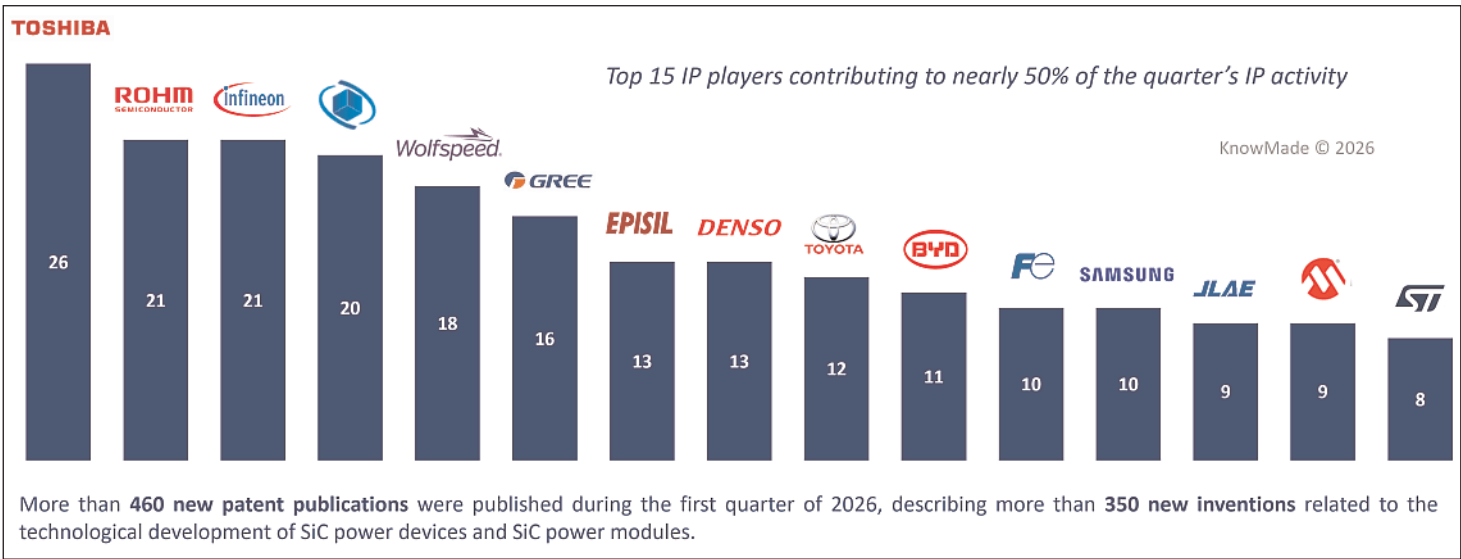


Figure 1: Leading patent applicants in SiC Power Devices & Modules during Q1/2026. More than 460 patent publications and over 350 new inventions were identified, with the top 15 IP players contributing nearly 50% of quarterly IP activity.



Figure 2: Countries of patent filings for SiC Power Devices & Modules in Q1/2026. The analysis shows strong patenting activity in China, followed by the USA and Japan, reflecting the high number of companies and research organizations active in SiC power electronics.

lished during Q1/2026, describing more than 350 new inventions related to the technological development of SiC power devices and SiC power modules. The top 15 IP players contributed nearly 50% of Q1's IP activity, confirming the strategic concentration of patenting efforts among leading companies active in SiC power electronics.

The geographic distribution of patent filings also highlights the central role of China in the current SiC technology patent landscape. During Q1/2026, patenting activity for SiC power devices and modules was strongly oriented toward China, with 290 new patent applications shown in the country-level filing analysis, followed by the USA, Japan, Europe, South Korea and Taiwan. Among the top 15 patent applicants, filing efforts were concentrated in China, the USA and Japan.

Foreign players such as Toshiba and Infineon are actively protecting their inventions in China, while leading Chinese patent applicants, including Global Power Technology, BYD and Jilian Automotive Electronics, remain focused on the domestic territory. This confirms that China is not only a major market for SiC technology but also an increasingly dense innovation and IP protection environment.

Strong innovation dynamics in SiC substrates and epitaxial wafers

The upstream part of the SiC technology value chain also showed significant patent activity in Q1/2026. In SiC substrates & epitaxial wafers, more than 320 new patent publications were published during the quarter, describing nearly 250 new inventions related to the technological development of SiC substrates and epiwafers. ➤

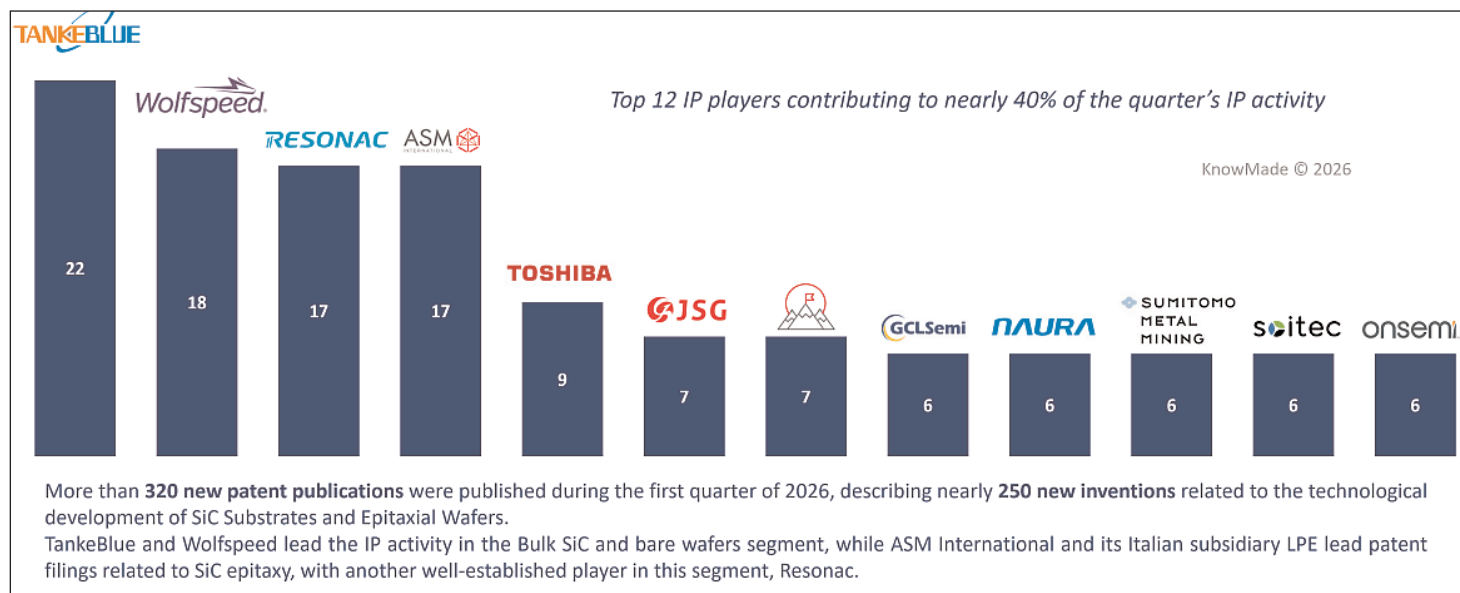


Figure 3: Leading patent applicants in SiC substrates & epitaxial wafers during Q1/2026. More than 320 patent publications and nearly 250 new inventions were identified, with TankeBlue, Wolfspeed, ASM International, LPE and Resonac among the notable players.



Figure 4: Countries of patent filings for SiC substrates & epitaxial wafers in Q1/2026. China remains the leading filing destination, confirming the country's central role in the development and protection of upstream SiC technology.

The top 12 IP players contributed to nearly 40% of the Q1's IP activity, indicating a competitive but still diversified patent landscape. TankeBlue and Wolfspeed led IP activity in the bulk SiC and bare wafers segment, while ASM International and its Italian subsidiary LPE led patent filings related to SiC epitaxy, alongside Resonac, another well-established player in this segment.

The geographic patenting activity for SiC substrates and epitaxial wafers also confirms China's strong position in the current SiC technology patent landscape. In Q1/2026, the country-level filing analysis identified 202 new patent applications in China, followed by the USA, Japan, Europe, Taiwan and South Korea. Among the top 12 patent applicants, filings were particularly focused on China, the USA and Japan.

Foreign players such as Resonac, ASM and Toshiba are actively protecting their inventions in China, while leading Chinese patent applicants continue to focus strongly on their domestic market. This patenting behavior illustrates the strategic importance of China in the upstream SiC supply chain, from bulk crystal growth to epitaxy and wafer preparation. ■

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