518.
标题: A 0.52THz third harmonic little-orbit gyrotron
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摘要: A third harmonic little-orbit gyrotron oscillator is investigated theoretically in order to develop high power and efficiency terahertz (THz) radiation sources. Mode competition with different electron-beam parameters have been investigated in a 0.52 THz third harmonic TE37 mode gyrotron oscillator, which can generate 3. 7kW of RE power at resonant magnetic field 6.98T. In addition, a high magnetic compression ratio magnetron injection gun (MIG) with 65 kV/2.5 A has been developed. PIC simulation results show that the velocity ratio of electron beam is 1.24, the average beam radius in the cavity is 0.35 mm. The spread of perpendicular and parallel velocities are 6. 1% and 6.6%, respectively.
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