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Title:Development of a compact sub-THz gyrotron FU CW CI for application to high power THz technologies
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Abstract:For application of high frequency gyrotron to high power THz technology, Gyrotron FU CW series is being developed in FIR FU. Gyrotron FU CW CI is developed as one of sub-THz gyrotrons included in the series. The advantage of the gyrotron is compactness using a compact superconducting magnet and compact power supply system, which makes the accesses of the gyrotron to applied large-scale devices easier and extends the applications of gyrotron to wider fields. The designed frequency and cavity mode are 394.5 GHz and TE26 mode for application to the 600 MHz DNP-NMR spectroscopy. As the operation results, the frequency and the output power were 394.03 GHz and around 30 W, respectively, which are available for the application to the 600 MHz DNP-NMR measurement. In addition, this gyrotron can operate at many other frequencies and cavity modes for application to high power THz technologies in wide fields. In this paper, the design and the operation results including long pulse or CW mode are presented. © Springer Science+Business Media, LLC 2012.
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