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Title:Uni-travelling-carrier photodiode module generating 300 GHz power greater than 1 mW

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Abstract:In this letter, we demonstrate over 1 mW power generation at 300 GHz with a uni-travelling-carrier photodiode (UTC-PD) packaged in a WR-3 waveguide module. To increase the maximum power, two identical UTC-PDs were monolithically integrated along with a T-junction to combine the power from the two PDs. The UTC-PD module exhibited peak saturated output power of approximately 1.2 mW at 300 GHz with photocurrent of around 20 mA per PD and bias voltage of -3.9 V. In addition, 3 and 10 dB bandwidths were measured to be around 70 GHz or 23% and over 150 GHz or 50%, respectively. © 2012 IEEE.

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