

High Power High Efficiency 270-320 GHz Source Based on Discrete Schottky Diodes

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Abstract

A 300 GHz source based on discrete Schottky diodes technology is reported in this work. The high frequency part developed by ACST consists of two high power and high efficiency doublers, one at 135-160 GHz and a second one at 270-320 GHz. Both doublers feature a single chip per module and do not use any power combining techniques. The 150 GHz and 300 GHz doublers are able to handle more than 400 mW and 100 mW input power and provide more than 140 mW and 30 mW output power, respectively. This is the most powerful 300 GHz source reported based on discrete Schottky diodes at this frequency range without using power combining.