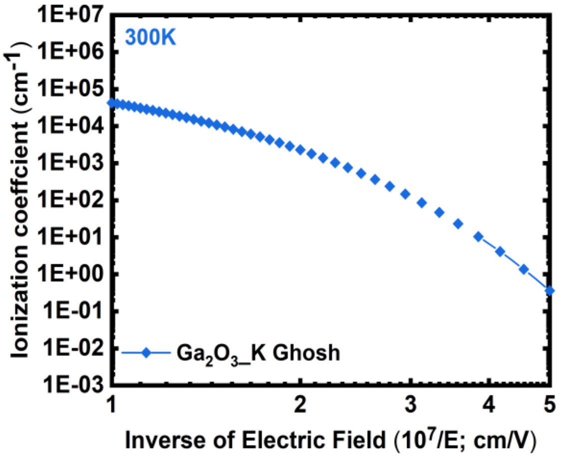

Figure 1: Ionization rate coefficient of electrons in β-Ga_2O_3 at room temperature [1]

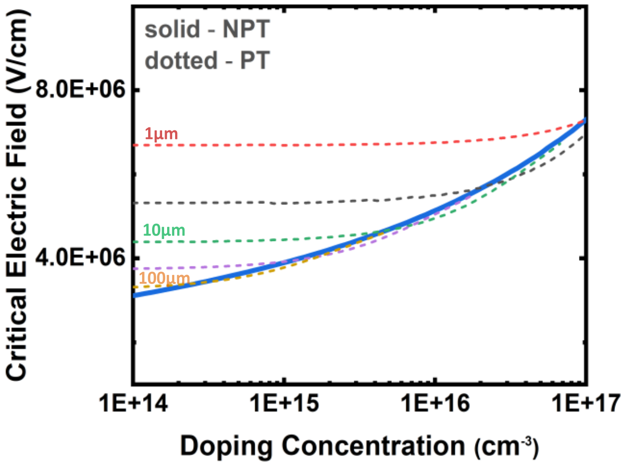

Figure 2: Critical electric field for avalanche breakdown in β-Ga_2O_3 for both NPT(solid) and PT(dotted with varied widths) structures

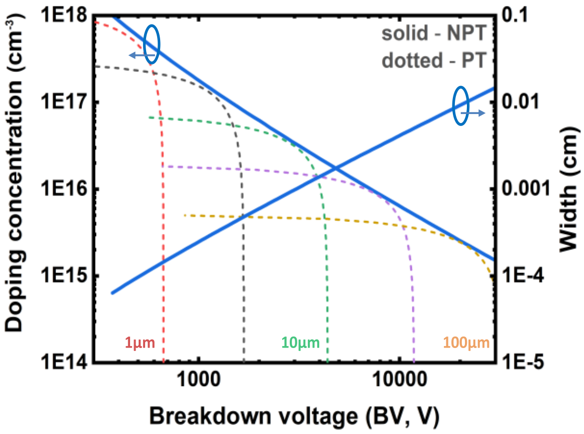

Figure 3: Doping concentration and width of the drift layer dependence on the breakdown voltage in β-Ga_2O_3 for NPT (solid) and PT (dotted with varied widths) structures

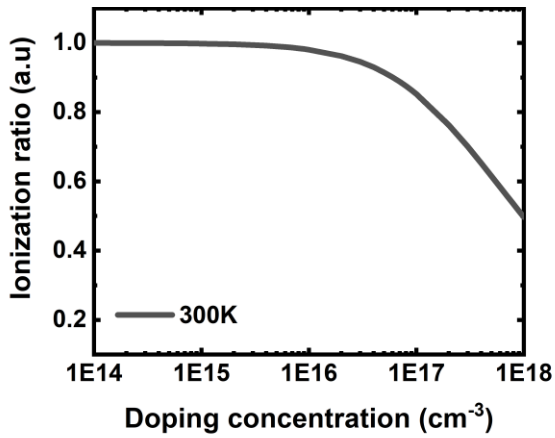

Figure 4: Ionization ratio of dopant extracted at room temperature in β-Ga_2O_3 with ionization energies reported in [2]

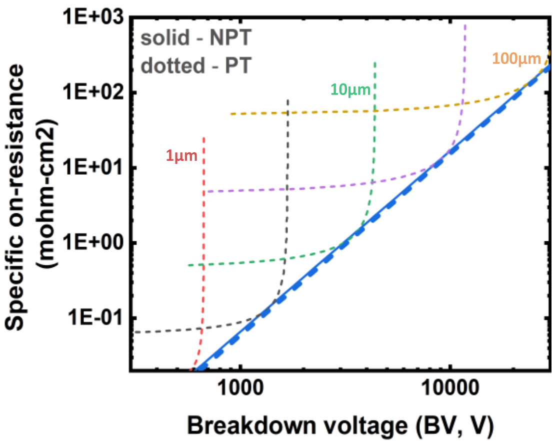

Figure 5: Trade-off relationship between the specific on-resistance of the drift layer and breakdown voltage in β-Ga_2O_3 unipolar devices for the NPT (solid) and PT (dotted with varied widths) structures

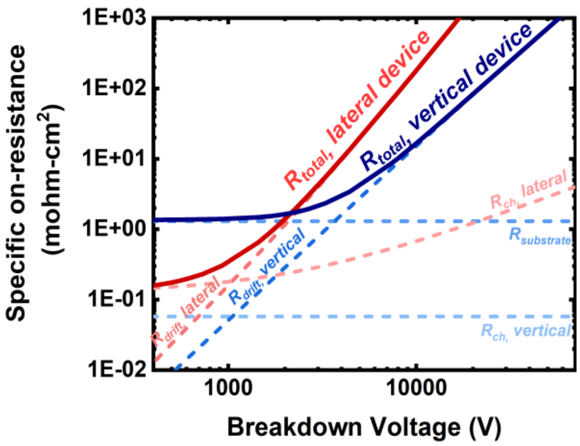

Figure 6: Trade-off relationship between the specific on-resistance and breakdown voltage in β-Ga_2O_3 for a lateral and vertical MOSFET. The resistance components (channel and drift) associated with the lateral device are represented in color red while the vertical device resistance components (channel, drift, and substrate) are represented in color blue

[1] K. Ghosh and U. Singisetti, "Impact ionization in β-Ga2O3," Journal of Applied Physics, vol. 124, no. 8, p. 085707, 2018, doi:10.1063/1.5034120.

[2] R. Sharma, M. E. Law, F. Ren, A. Y. Polyakov, and S. J. Pearton, "Diffusion of dopants and impurities in β-Ga2O3," Journal of Vacuum Science & Technology A, vol. 39, no. 6, p. 060801, Dec. 2021, doi: 10.1116/6.0001307.