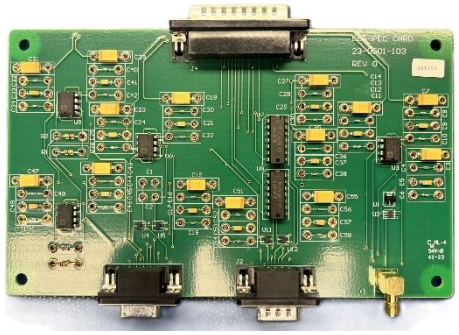
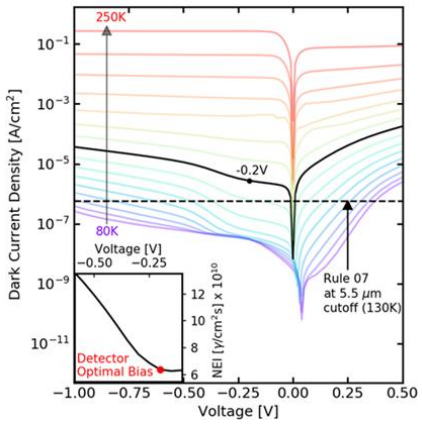
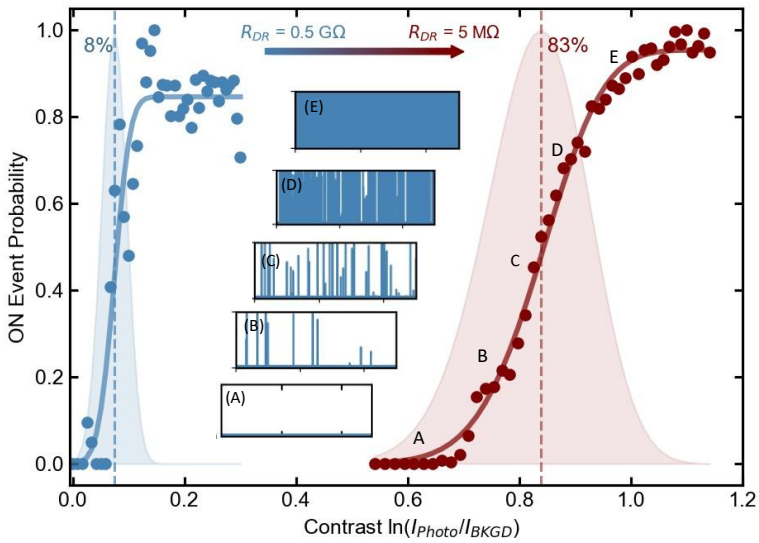
Supplemental page for abstract evaluation



EBSPEC Card - Printed circuit board of the EBS pixel unit cell, the input of input photocurrent from an external photodetector is supplied through an SMA connector that propagates through stages responsible for converting the signal to events, supplied with external voltage and current sources to optimize bias conditions, data is recorded through output probes to monitor each step of the signal train.



An evaluated structure - The dark current density at temperatures between 80 and 250 K of a 5.5 µm cutoff MWIR nBn photodetector. The black dot represents the ideal bias for minimal NEI at the detector's specified operating temperature of 130 K (black curve). The Rule 07 dark current density expectation for a detector at this temperature and cutoff wavelength is shown by the horizontal black dashed line. In the low-irradiance limit, the inset displays the NEI at 130 K as a function of voltage. The red circle at -0.2 V represents the ideal detector bias that produces the lowest NEI.



Nominal Contrast Threshold Sensitivity measurement - Event probability as a function of the log contrast shown for a 200 µm device (blue curve) in a process evaluation chip of a 5.5 µm cutoff MWIR nBn photodetector, with measured Nominal Contrast Threshold (NCT) (blue-dashed vertical line) at 8%, and a 500 µm device (red curve) with measured NCT (red-dashed vertical line) at 83%. Insets A through E shows the raw event data count extracted at various laser drive voltages corresponding to different points of the 500 µm device S-curve (red curve).