Supplementary Information for

Multiple-level Flash Memory Based on Stacked Anisotropic ReS_2-Boron Nitride-Graphene Heterostructures

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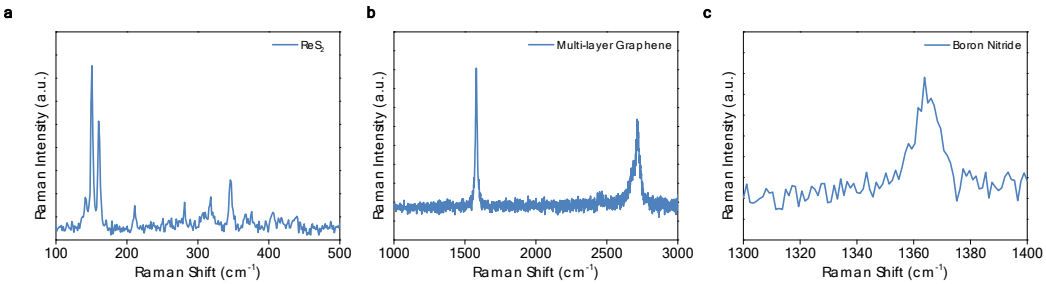

Figure S1. Raman spectra of the ReS_2 flake (a), graphene flake (b) and h-BN flake (c). The Raman spectrum in Figure S1 confirms the lattice structures of all three layers. The three peaks at 140.7, 154.7, 163.5, 215.0 and 237.5 cm^{-1} are characteristic peaks of ReS_2. The two peaks at 1581 and 2723 cm^{-1} characterize multi-layer graphene, and the peak at 1363 cm^{-1} originates from longitudinal mode phonons in h-BN.

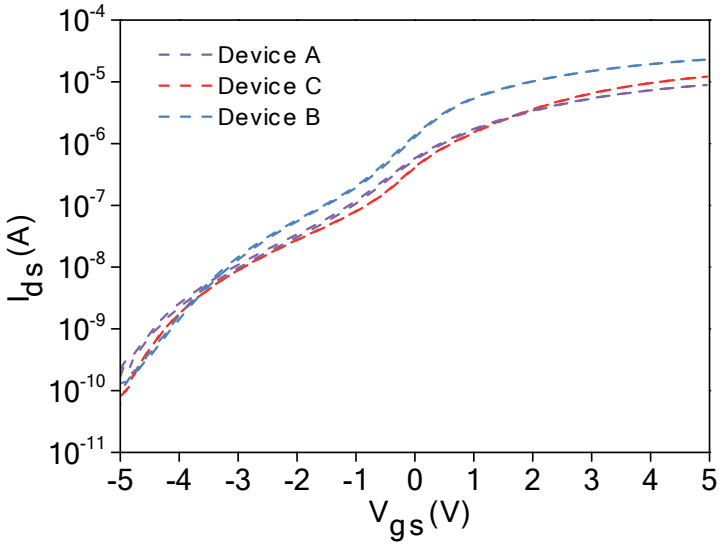

Figure S2. Transfer characteristics of Device A, B and C in semi-log scale with the local graphene gate sweeping back and forth between -5 V and +5 V, showing no hysteresis.

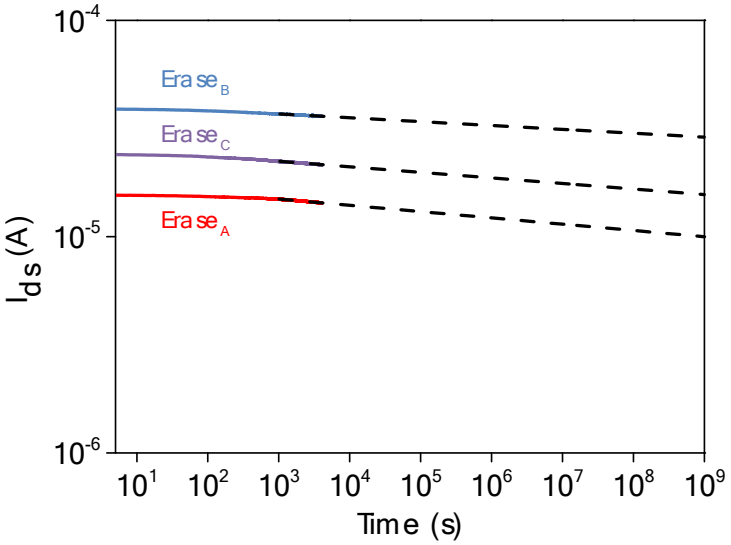

Figure S3. Projected retention characteristics of three on-state current of the ReS_2 memory device.

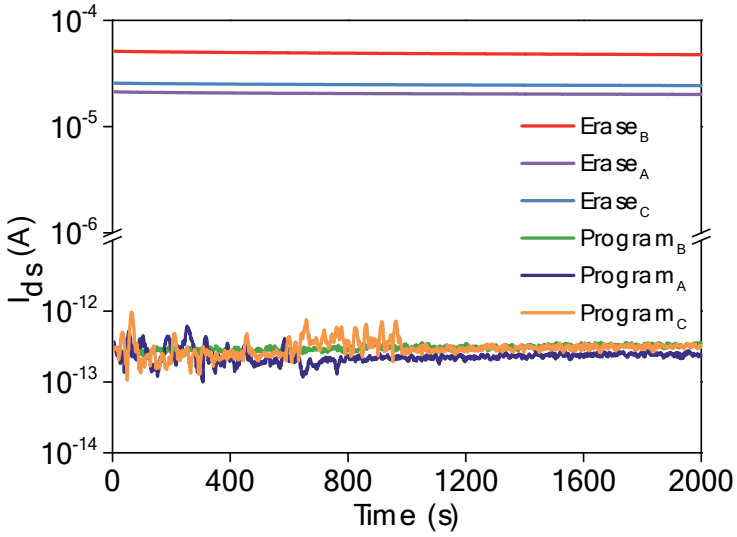

Figure S4. Retention characteristics of a ReS_2 memory device for retention characteristic test.

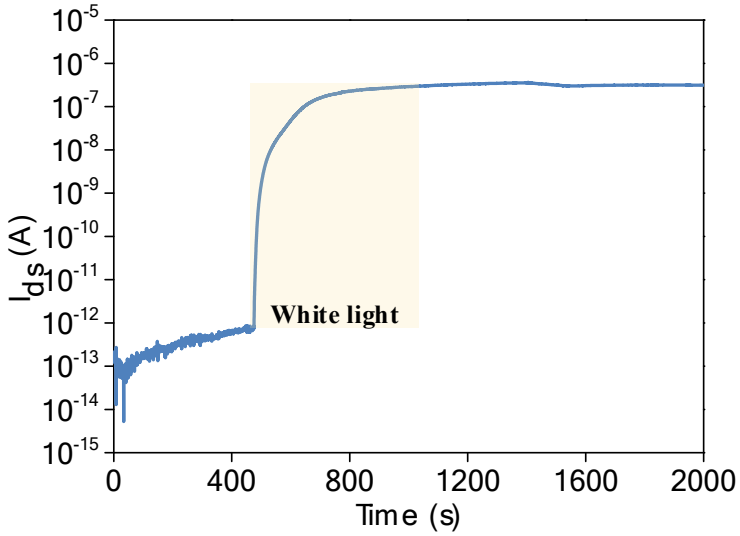

Figure S5. The effect of white light on the off-state current of the memory.