# Sample

# Analysis

## AC Parametric Comparison

| Test | AMD Minimum | ST Minimum | AMD-ST Δ Minimum | AMD Maximum | ST Maximum | AMD-ST Δ Maximum |
|---|---|---|---|---|---|---|
| tAVQV TPHL | 20.78nS | 40.00nS | -19.22nS | 31.88nS | 60.63nS | -28.75nS |
| tAVQV TPLH | 12.03nS | 38.12nS | -26.09nS | 17.50nS | 56.09nS | -38.59nS |
| tELQV TPZH | 35.37nS | 38.34nS | -2.97nS | 48.34nS | 61.16nS | -12.82nS |
| tELQV TPZL | 35.37nS | 38.34nS | -2.97nS | 46.78nS | 57.56nS | -10.78nS |
| tGLQV TPZH | 11.00nS | 5.38nS | 5.62nS | 14.12nS | 12.72nS | 1.40nS |
| tEHQZ TPHZ | 8.13nS | 9.38nS | -1.25nS | 11.87nS | 16.25nS | -4.38nS |
| tEHQZ TPLZ | 8.13nS | 11.25nS | -3.12nS | 9.53nS | 16.87nS | -7.34nS |

Table 1. AC Parametric Comparison
AMD Min/Max vs. STM Min/Max
VCC=5.0V±10%, Temperature=-15°C to +85°C

| Test | AMD Mean | ST Mean | AMD-ST Δ Mean | AMD Cpk | ST Cpk | AMD-ST Δ Cpk |
|---|---|---|---|---|---|---|
| tAVQV TPHL | 26.40nS | 50.15nS | -23.75nS | 3.12 | 3.59 | -0.47 |
| tAVQV TPLH | 14.84nS | 46.31nS | -31.47nS | 3.69 | 3.52 | 0.17 |
| tELQV TPZH | 41.64nS | 48.39nS | -6.75nS | 3.93 | 2.81 | 1.12 |
| tELQV TPZL | 40.94nS | 47.12nS | -6.18nS | 4.14 | 3.35 | 0.79 |
| tGLQV TPZH | 12.37nS | 8.94nS | 3.43nS | 3.55 | 1.53 | 2.02 |
| tEHQZ TPHZ | 9.71nS | 13.45nS | -3.74nS | 4.12 | 3.18 | 0.94 |
| tEHQZ TPLZ | 8.84nS | 14.23nS | -5.39nS | 6.78 | 4.30 | 2.48 |

Table 2. AC Parametric Comparison
AMD Mean/Cpk vs. STM Mean/Cpk
VCC=5.0V±10%, Temperature=-15°C to +85°C

Green cells indicate deltas where the AMD device performed better (faster) than the ST device.
Yellow cells indicate deltas where the AMD process capability index is better than the ST device.

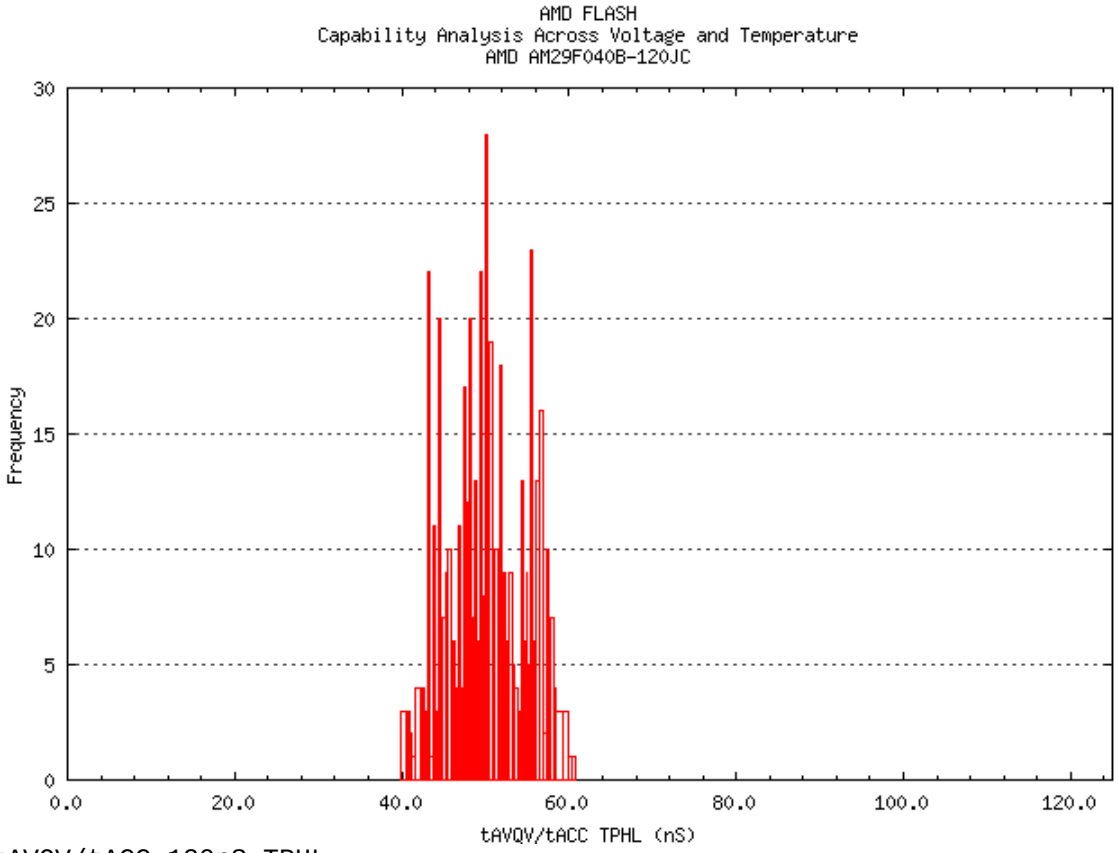
# Sample Timing Analysis

# Across Voltage and Temperature

# Temperature=-15°C to +85°C

# VCC=4.5V to 5.5V

## *tAVQV/tACC TPHL*




tAVQV/tACC 120nS TPHL

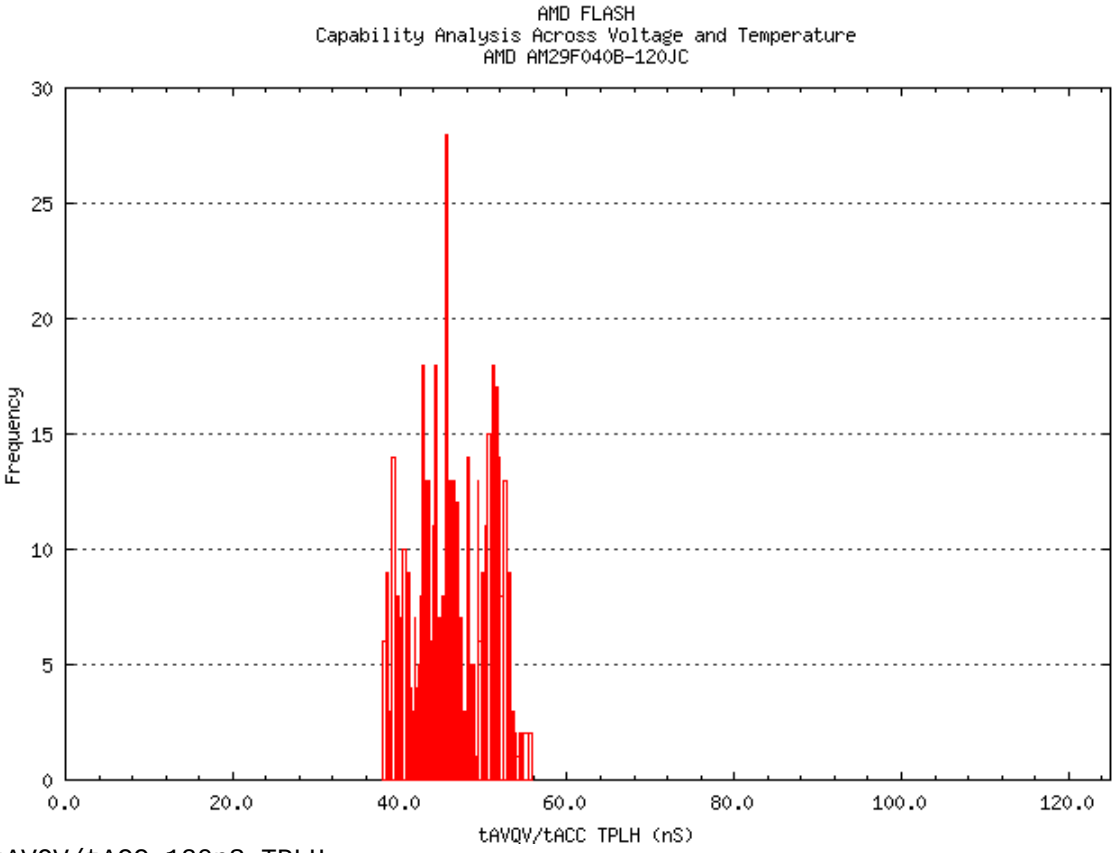
Process Statistics

| | |
|---|---|
| Minimum | 40.000000 |
| Mean | 50.150227 |
| Maximum | 60.630000 |
| Average Deviation | 3.857671 |
| Standard Deviation | 4.660526 |
| Variance | 21.720505 |
| Skewness | 0.024371 |
| Kurtosis | -0.851068 |

Process Capability

| | | |
|---|---|---|
| LSL | 0.00 | |
| USL | 120.00 | |
| Observations | 528 | |
| Observations < LSL | 0 | (0.00%) |
| Observations > USL | 0 | (0.00%) |
| Observations in Spec | 528 | (100.00%) |
| Cp | 4.29 | |
| Cpl | 3.59 | |
| Cpu | 5.00 | |
| CR | 0.23 | |
| Cpk | 3.59 | |

## *tAVQV/tACC TPLH*

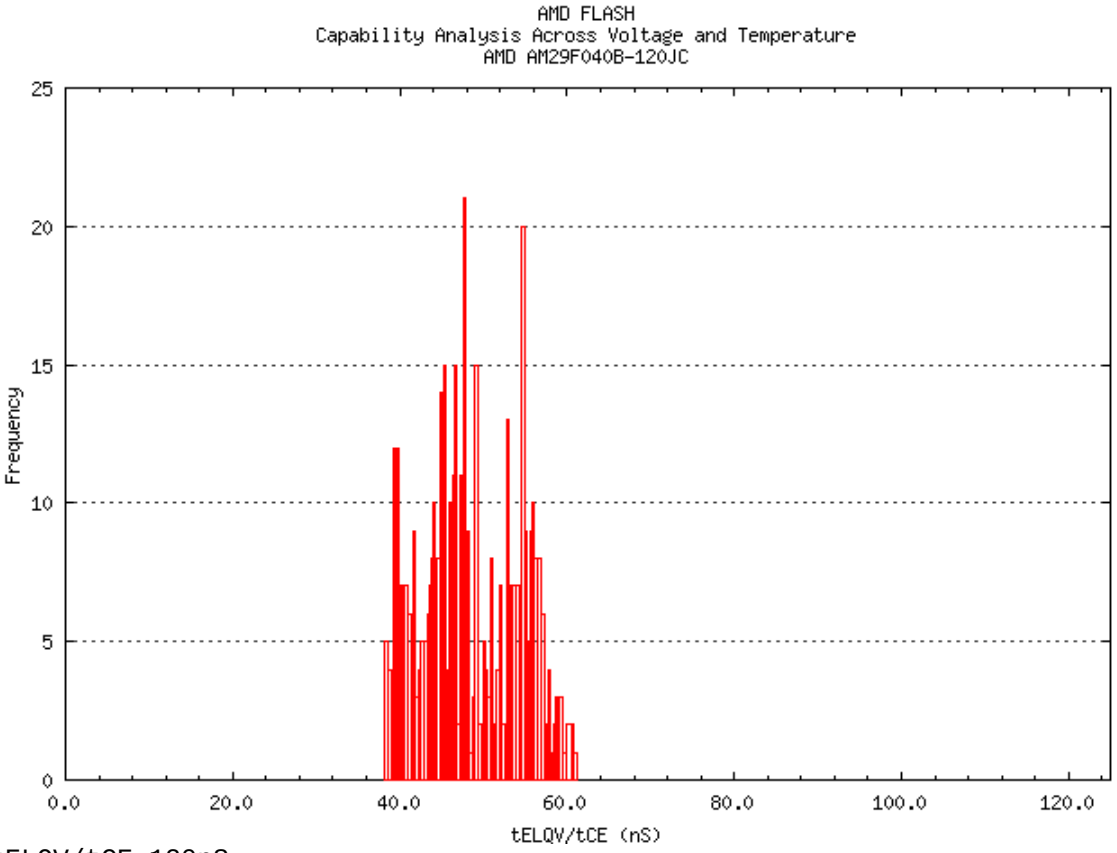



tAVQV/tACC 120nS TPLH

| Process Statistics | | |
|---|---|---|
| Minimum | 38.120000 | |
| Mean | 46.309148 | |
| Maximum | 56.090000 | |
| Average Deviation | 3.737161 | |
| Standard Deviation | 4.384738 | |
| Variance | 19.225929 | |
| Skewness | 0.033671 | |
| Kurtosis | -1.036198 | |

| Process Capability | | |
|---|---|---|
| LSL | 0.00 | |
| USL | 120.00 | |
| Observations | 528 | |
| Observations < LSL | 0 | (0.00%) |
| Observations > USL | 0 | (0.00%) |
| Observations in Spec | 528 | (100.00%) |
| | | |
| Cp | 4.56 | |
| Cpl | 3.52 | |
| Cpu | 5.60 | |
| CR | 0.22 | |
| Cpk | 3.52 | |

## *tELQV/tCE TPZH*

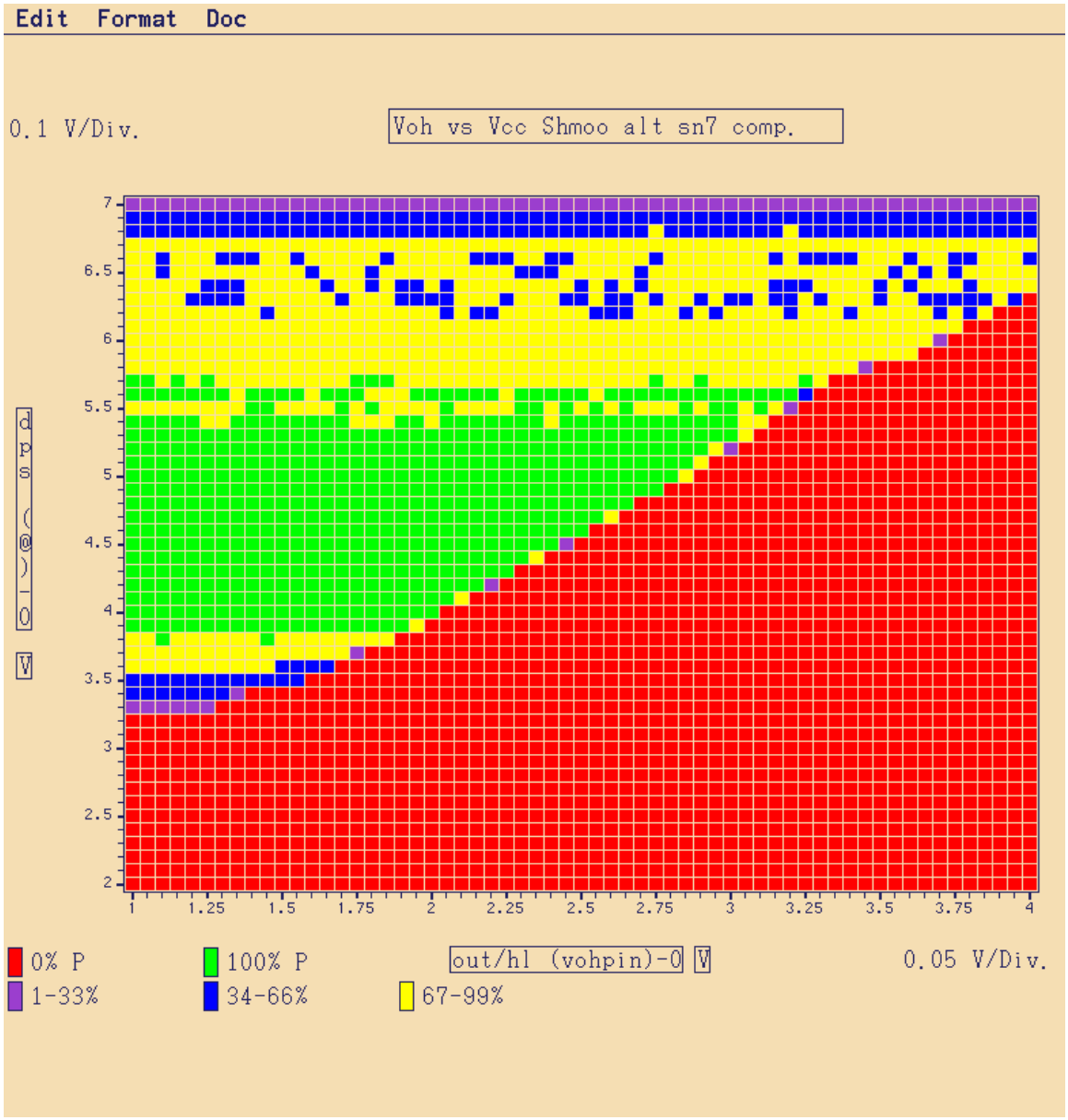



tELQV/tCE 120nS

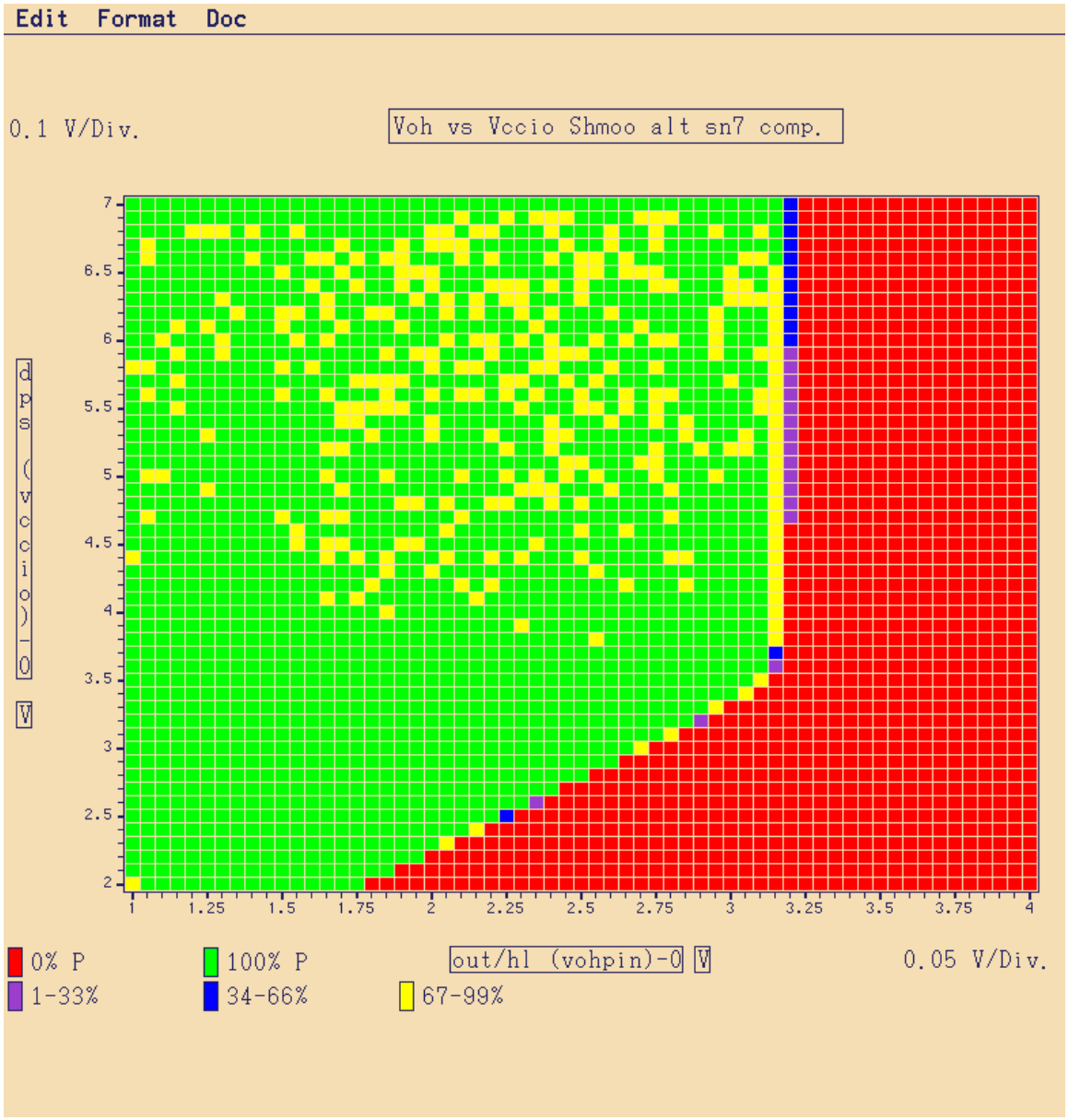
| Process Statistics | | |
|---|---|---|
| Minimum | 38.340000 | |
| Mean | 48.390411 | |
| Maximum | 61.160000 | |
| Average Deviation | 4.910768 | |
| Standard Deviation | 5.737516 | |
| Variance | 32.919091 | |
| Skewness | 0.164091 | |
| Kurtosis | -1.049545 | |

| Process Capability | | |
|---|---|---|
| LSL | 0.00 | |
| USL | 120.00 | |
| Observations | 462 | |
| Observations < LSL | 0 | (0.00%) |
| Observations > USL | 0 | (0.00%) |
| Observations in Spec | 462 | (100.00%) |
| | | |
| Cp | 3.49 | |
| Cpl | 2.81 | |
| Cpu | 4.16 | |
| CR | 0.29 | |
| Cpk | 2.81 | |

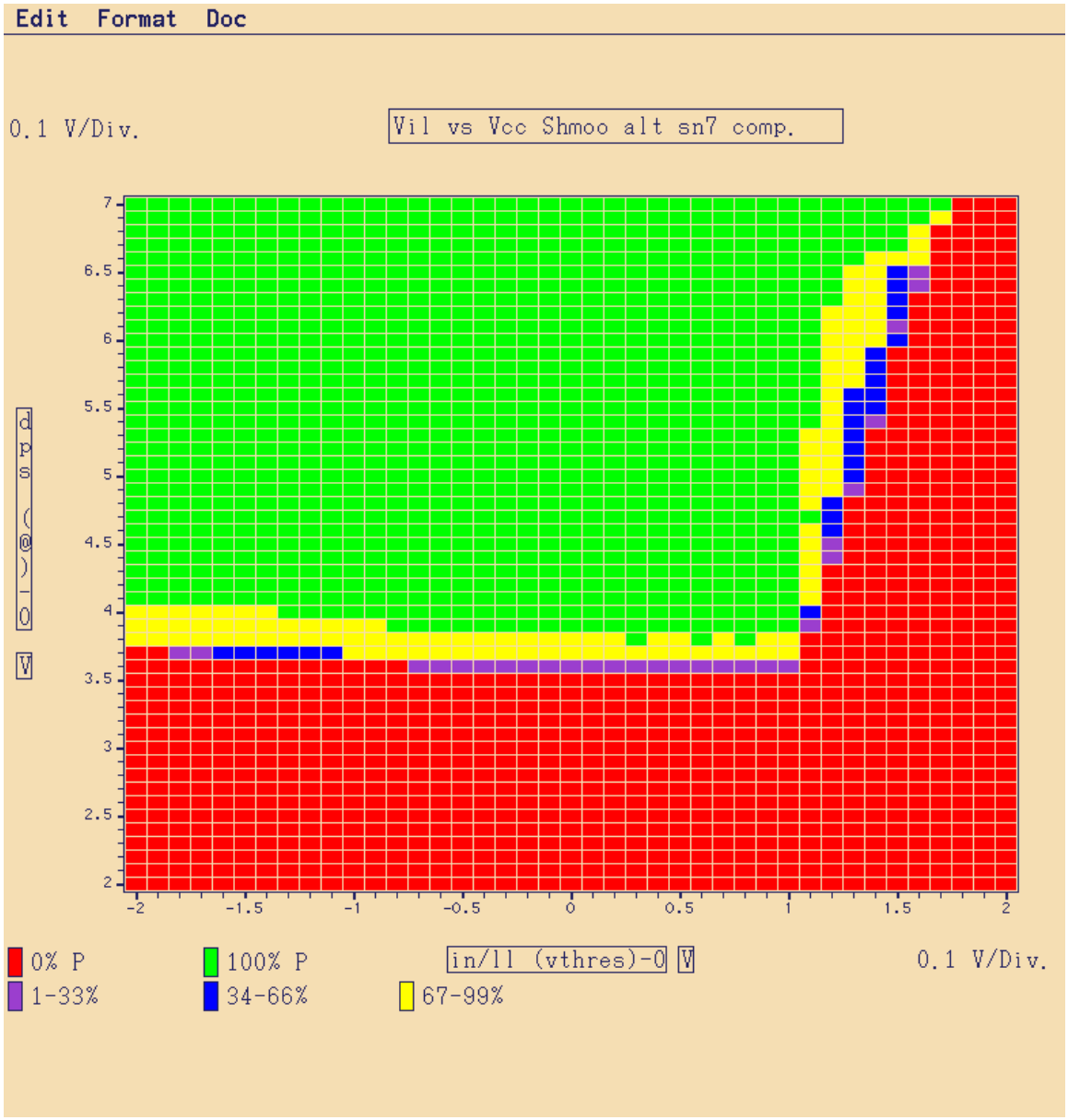
### *VOH versus VCC—Composite Shmoo Plot*



## *VOH versus VCCIO—Composite Shmoo Plot*



### *VIL versus VCC—Composite Shmoo Plot*



## *VIL versus VCCIO—Composite Shmoo Plot*