

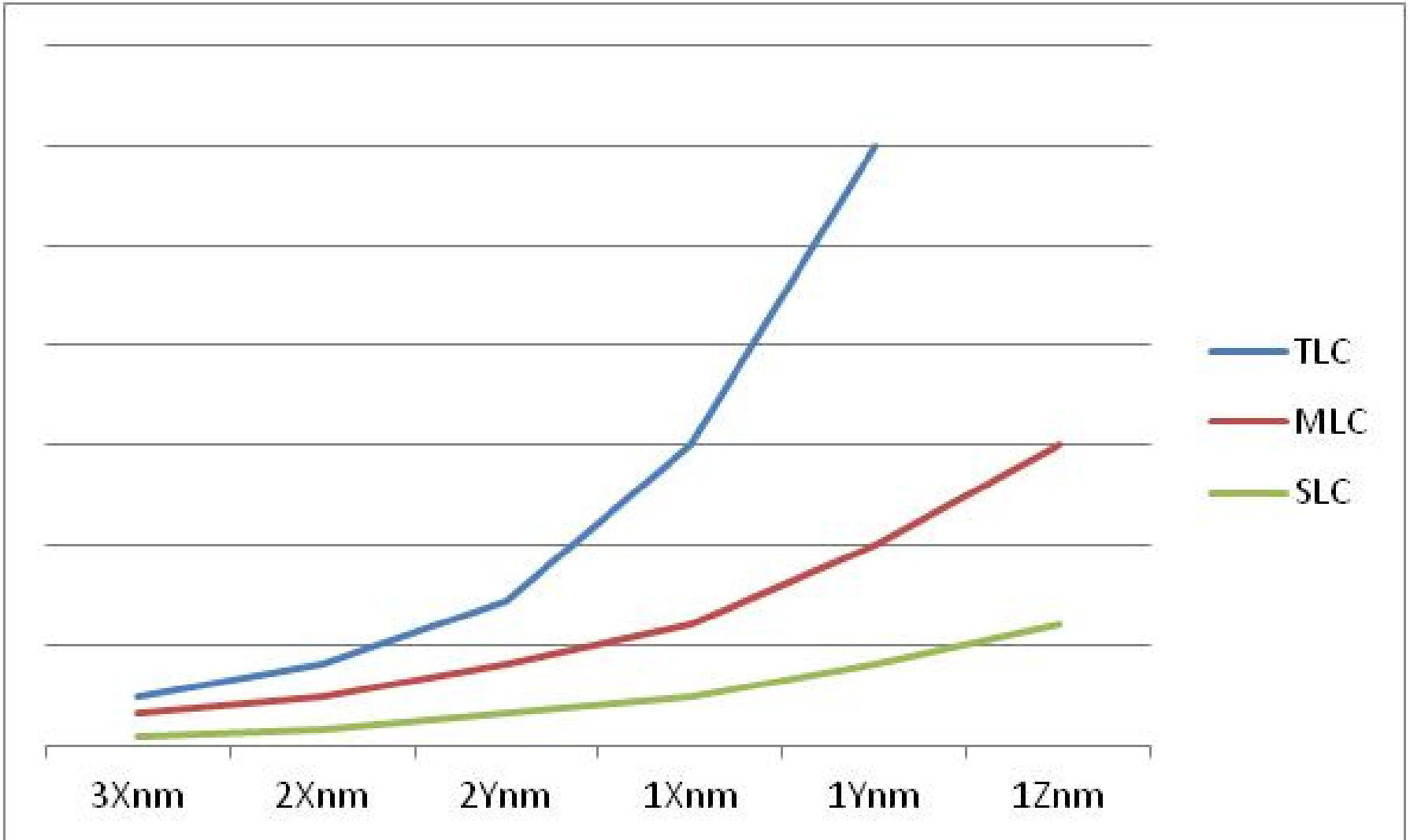


How Hot is Your Cloud Data?

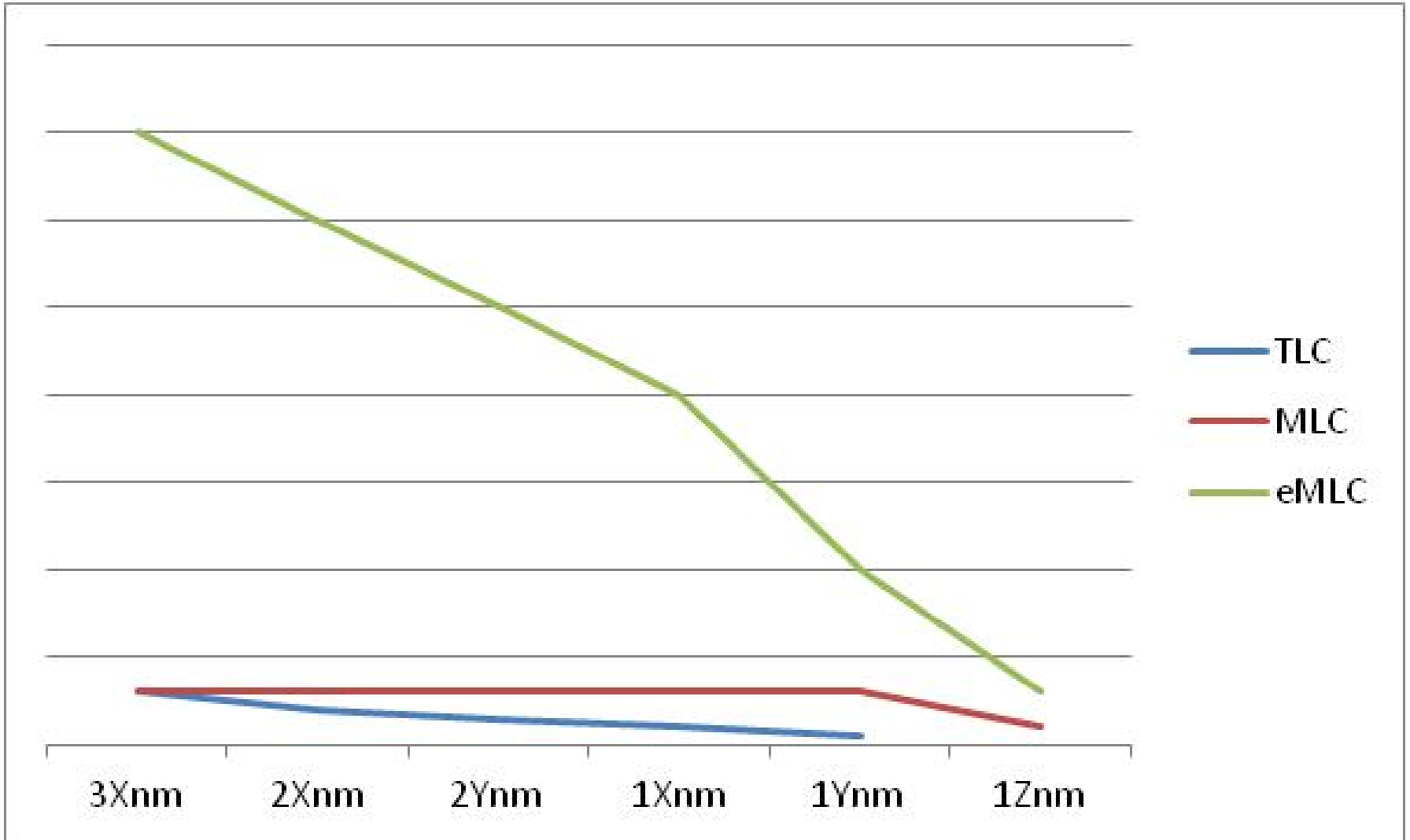
Kevin Kilbuck

Micron Semiconductor Products

NAND Flash ECC Requirements



NAND Endurance



NAND Flash for Cold Storage?

- There are different degrees of coldness
- Need to consider performance, power, TCO
- Hard drives need to spin
- Tape has lowest cost/bit, but drive systems are expensive
- 3D NAND is right around the corner

Application Suitability

Data Type	R/W Ratio	Fills/Day	NAND Tech
Scalding	>50% writes	>10	SLC
Hot	50/50	5-10	MLC
Warm	80/20	1-3	
Lukewarm	90/10	<1	
Cold	>90% reads	<0.1	TLC ???