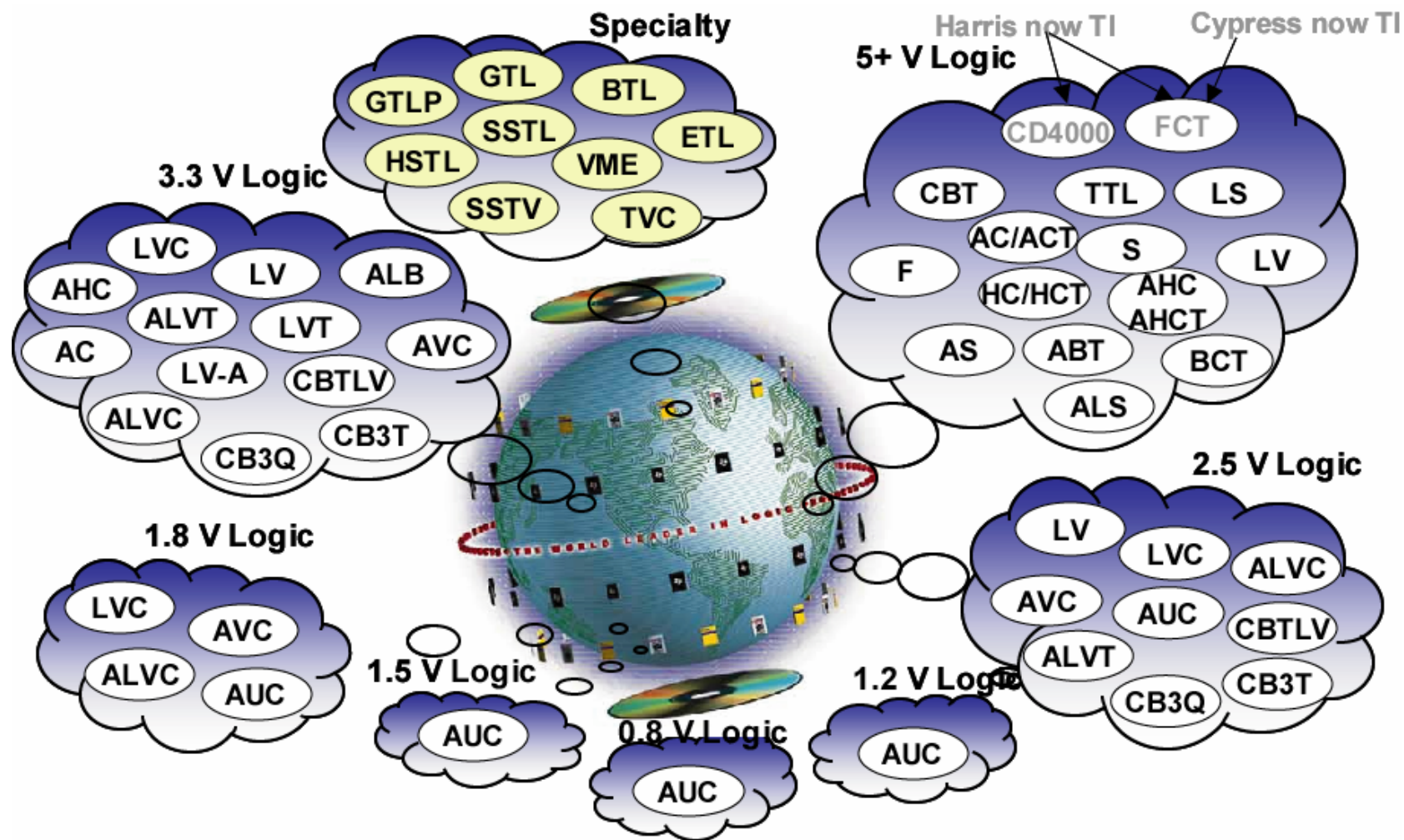
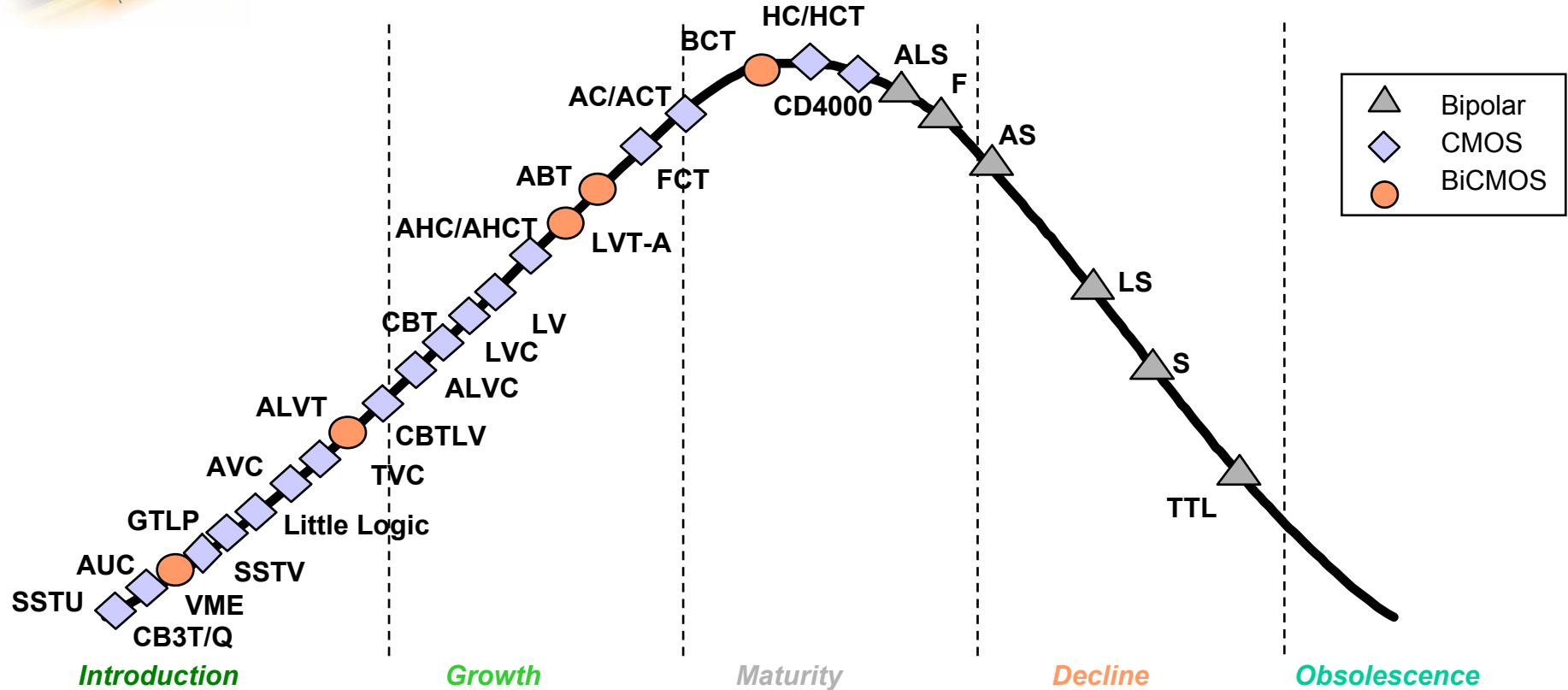


Welcome to the World of TI Logic



Product Life Cycle

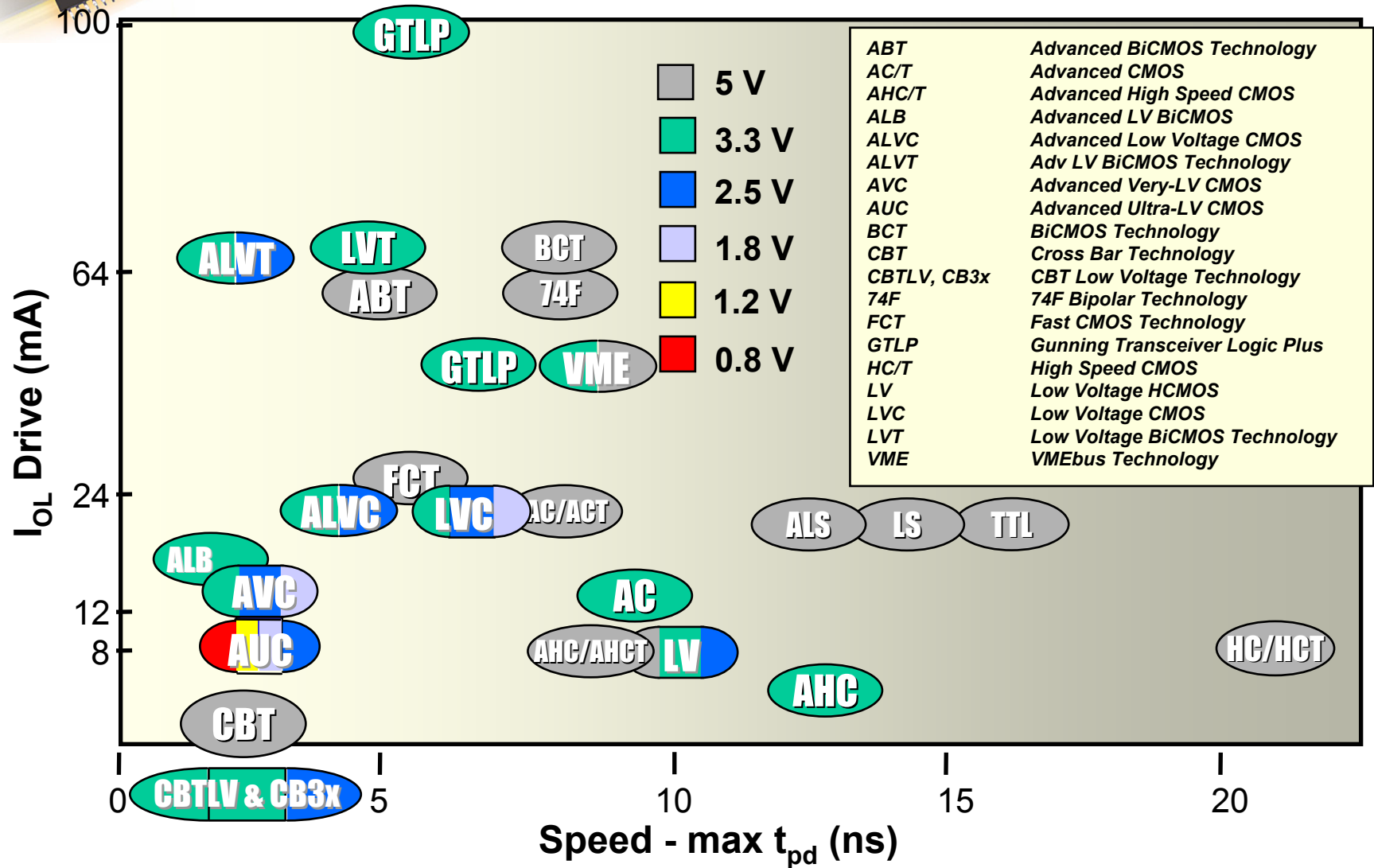


TI remains committed to be the last supplier in the older families.

Investment levels for new products are at an all-time high.



Family Performance Positioning





Low-Voltage Market

Coverage and Standardization

5 V	HCT, LS	AHC/T, LV	AC/T, ACH/T ALS, 74F	ABT			
3.3 V		AHC, LV	LVC	LVT	ALVC	ALVT	
2.5 V		LV	LVC		ALVC	ALVT	AUC
1.8 V			LVC		ALVC		AUC
1.2 V							AUC
0.8 V							AUC

Speed Performance

AHC/T

- ✓ 8.5-ns t_{pd} (5 V)
- ✓ 13.5-ns t_{pd} (3.3 V)
- ✓ -8/8 mA (5 V)
- ✓ -4/4 mA (3.3 V)
- ✓ 5-V or 3.3-V V_{CC}
- ✓ 5-V input tolerant
- ✓ 2 WW sources

LV

- ✓ 6.5-ns t_{pd} (5 V)
- ✓ 10-ns t_{pd} (3.3 V)
- ✓ -16/16 mA (5 V)
- ✓ -8/8 mA (3.3 V)
- ✓ 5-V input tolerant
- ✓ 3 WW sources
- ✓ Partial Power Down †

LVC

- ✓ 6.5-ns t_{pd}
- ✓ -24/24 mA
- ✓ Ultra-low (20 μ A) standby power
- ✓ 4 WW sources
- ✓ Bus hold option
- ✓ 5-V tolerant
- ✓ Gate functions
- ✓ Partial Power Down †

LVT

- ✓ 4-ns t_{pd}
- ✓ -32/64 mA
- ✓ Low (90 μ A) standby power
- ✓ 4 WW sources
- ✓ Bus hold option
- ✓ 5-V tolerant
- ✓ Hot insertion ‡

ALVC

- ✓ 3-ns t_{pd}
- ✓ -24/24 mA
- ✓ Very-low (40 μ A) standby power
- ✓ 5 WW sources
- ✓ Bus hold

ALVT

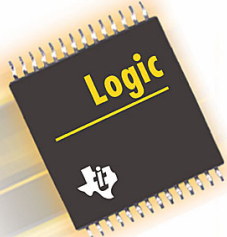
- ✓ 2.4-ns t_{pd}
- ✓ -32/64 mA
- ✓ Low (90 μ A) standby power
- ✓ 3 WW sources
- ✓ Bus hold
- ✓ 5-V tolerant
- ✓ Hot insertion ‡

AUC

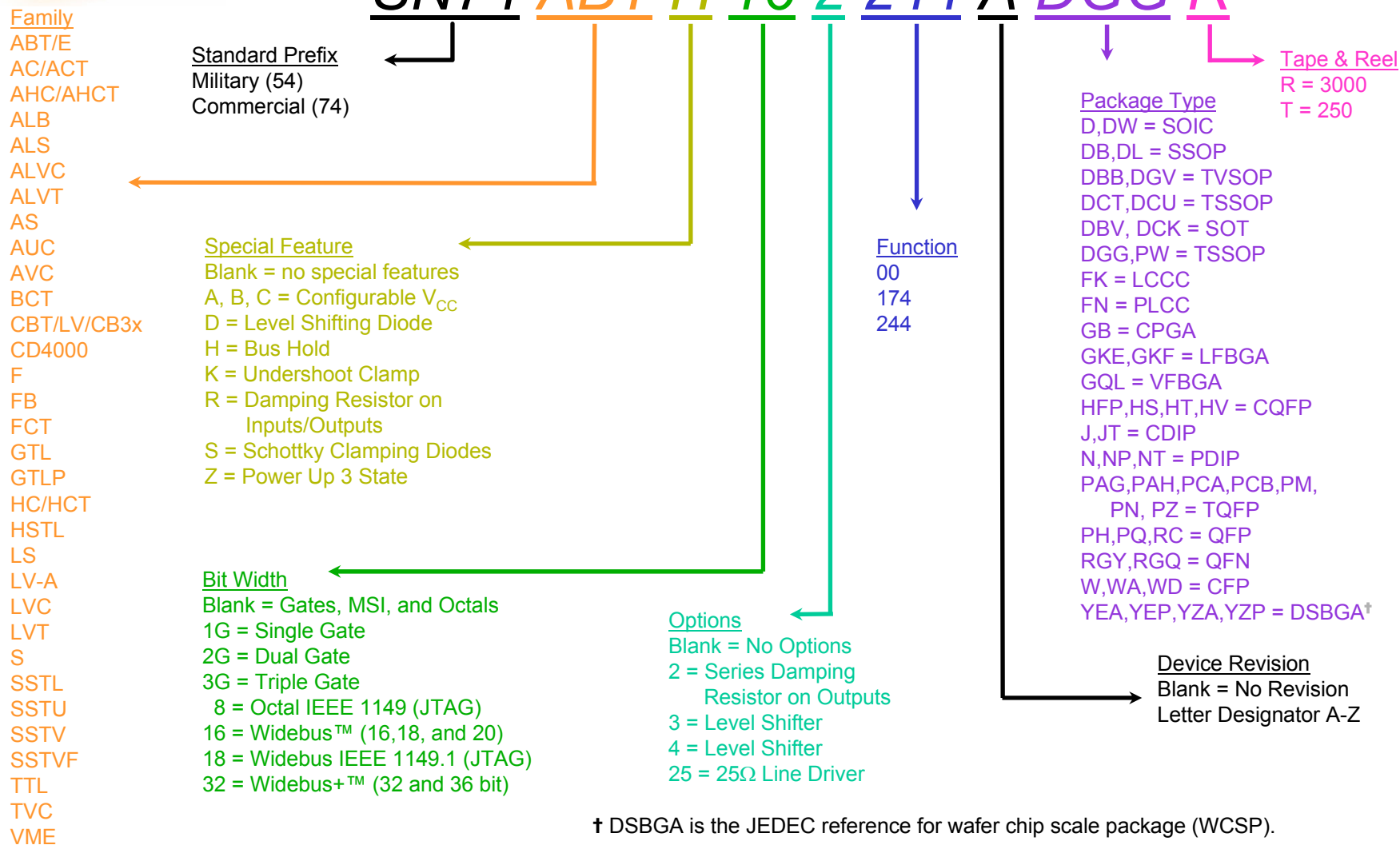
- ✓ 2-ns speed
- ✓ -8/8-mA drive
- ✓ Ultra-low (10 μ A) standby power
- ✓ 3 WW sources
- ✓ Bus hold option
- ✓ 3.6-V tolerant

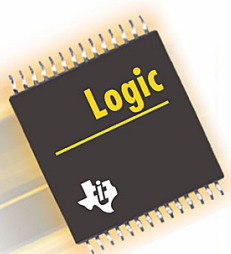
† Partial Power Down supported by I_{off} feature

‡ Hot Insertion supported by I_{off} and Power Up 3-State features



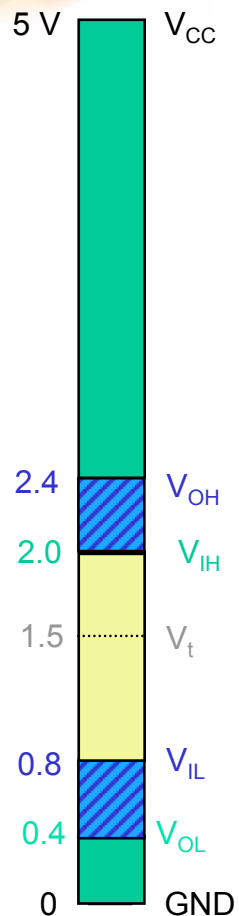
Device Names and Package Designators





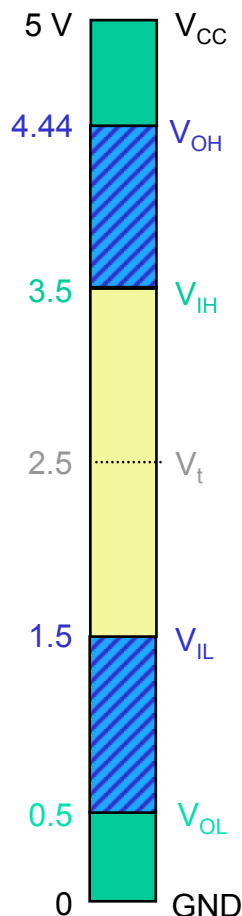
IC Basics

Comparison of Switching Standards



5-V TTL

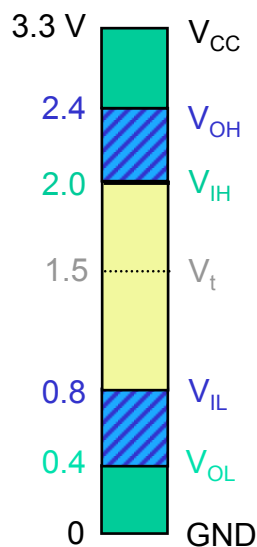
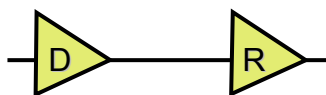
Standard TTL: ABT, AHCT, HCT, ACT, Bipolar



5-V CMOS

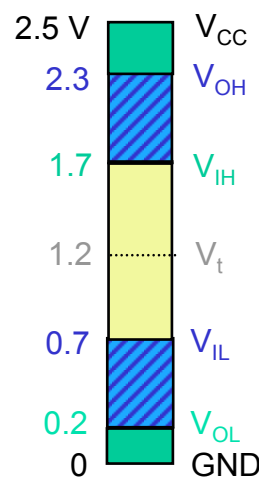
Rail-to-Rail 5 V HC, AHC, AC, LV-A

Is V_{OH} higher than V_{IH} ?
Is V_{OL} less than V_{IL} ?



3.3-V LVTTTL

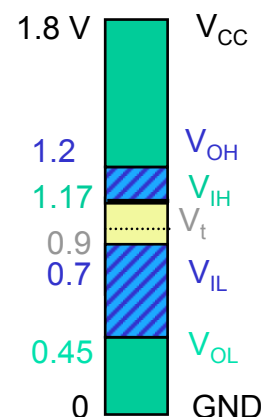
LVT, LVC, ALVC, LV-A, ALVT



2.5-V CMOS

AUC, AVC, ALVC, LVC, ALVT

* Requires V_{IH} Tolerance



1.8-V CMOS

AUC, AVC, ALVC, LVC

D \ R	5TTL	5CMOS	3LVTTTL	2.5CMOS	1.8CMOS
5TTL	Yes	No	Yes *	Yes*	Yes*
5 CMOS	Yes	Yes	Yes*	Yes*	Yes*
3 LVTTTL	Yes	No	Yes	Yes*	Yes*
2.5 CMOS	Yes	No	Yes	Yes	Yes*
1.8 CMOS	No	No	No	No	Yes