

1. Type of Change (Major or Minor)

Major

2. Change Description

Change A) the AP54RHC705 parameter name was updated from "Clock Frequency (50% Duty Cycle)" to "Maximum Clock Frequency (50% Duty Cycle)" to better reflect device behavior. The limits were also adjusted as shown below.

From :

Symbol	Parameter	Conditions	V _{CC}	MIN	TYP	MAX	Units
f _{max}	Clock Frequency (50% Duty Cycle)	C _L = 50 pF	4.5 to 5.5 V	-	-	100	MHz
			3.0 to 3.6 V	-	-	100	MHz
			2.3 to 2.7 V	-	-	10	MHz
			1.65 to 1.95 V	-	-	10	MHz

Changed to:

Symbol	Parameter	Conditions	V _{CC}	MIN	TYP	MAX	Units
f _{max}	Maximum Clock Frequency (50% Duty Cycle)	C _L = 50 pF	4.5 to 5.5 V	100	242	-	MHz
			3.0 to 3.6 V	90	220	-	MHz
			2.3 to 2.7 V	50	171	-	MHz
			1.65 to 1.95 V	10	70	-	MHz

Change B) The AP54RHC705 propagation delay for V_{CC} between 1.65V and 1.95V was adjusted from 24 ns to 30 ns as shown below.

From:

Symbol	Parameter	Conditions	V _{CC}	MIN	TYP	MAX	Units
t _{pdclk}	Propagation Delay (Clock to Data Q, Q-bar)	C _L = 50 pF	4.5 to 5.5 V	-	4.9	12	ns
			3.0 to 3.6 V	-	5.8	16	ns
			2.3 to 2.7 V	-	7.3	20	ns
			1.65 to 1.95 V	-	10.3	24	ns

Changed to:

Symbol	Parameter	Conditions	V _{CC}	MIN	TYP	MAX	Units
t _{pdclk}	Propagation Delay (Clock to Data Q, Q-bar)	C _L = 50 pF	4.5 to 5.5 V	-	4.9	12	ns
			3.0 to 3.6 V	-	5.8	16	ns
			2.3 to 2.7 V	-	7.3	20	ns
			1.65 to 1.95 V	-	10.3	30	ns

3. Impact on Product and/or Process

Change A/B) No impact on product or process. Marginal test yield improvements.

4. Justification for Change

Change A) Renamed to more accurately reflect device behavior and correctly specify min/max ratings for the "Maximum Clock Frequency (50% Duty Cycle)" test. Limits adjusted to prevent marginal production yield loss.

Change B) Limits adjusted to prevent marginal production yield loss.

5. Change Risk Assessment

Change A/B) Minimal to no risk.

6. Qualification Plan

Change A/B) Not applicable.

7. Qualification Report

Change A/B) Not applicable

8. Summary

See Change Description

9. Impacted Device - Document - Process List

Change A/B) AP54RHC705ELT, AP54RHC705ALT, AP54RHC705BLT, AP54RHC705CLT

10. Sample Availability Date and Projected Production Shipment

Change A/B) Sample availability date: N/A. Please contact Apogee for samples if needed.

Change A/B) Projected production shipment date: March 16, 2025 or upon PCN approval.

11. File Attachment