Typical Performance Curves

1.0 TYPICAL PERFORMANCE CURVES

Note: The following performance graphs are for the devices that are documented in the MCP45HVX1 data sheet (DS20005304). This document allows the MCP45HVX1 data sheet's functional description to be in PDF format with a file size smaller than the 10 MB limit of many email file servers.
The graphs and tables provided following this note are a statistical summary based on a limited number of samples and are provided for informational purposes only. The performance characteristics listed herein are not tested or guaranteed. In some graphs or tables, the data presented may be outside the specified operating range (e.g., outside specified power supply range) and therefore, outside the warranted range.

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.5V, DGND = V-, V+ = 36V.

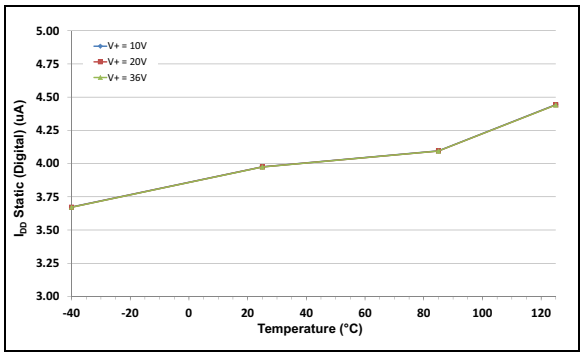


FIGURE 1-1: *Device Digital Supply Static Current (I_{DDD}) vs. Temperature and V+ Voltage (V_L = 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V, 20V and 36V).*

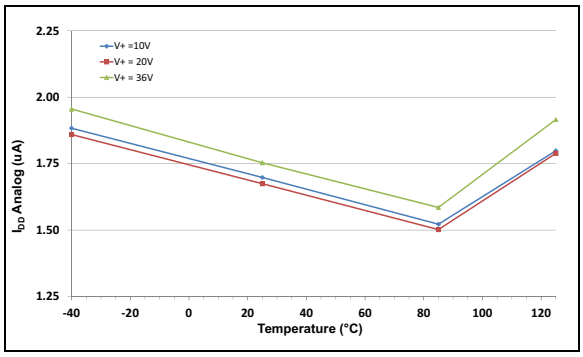


FIGURE 1-3: *Device Analog Supply Static Current (I_{DDA}) vs. Temperature and V+ Voltage (V_L = 5.5V, A = B =V-, DGND = V-, V+ = 10V, 20V and 36V).*

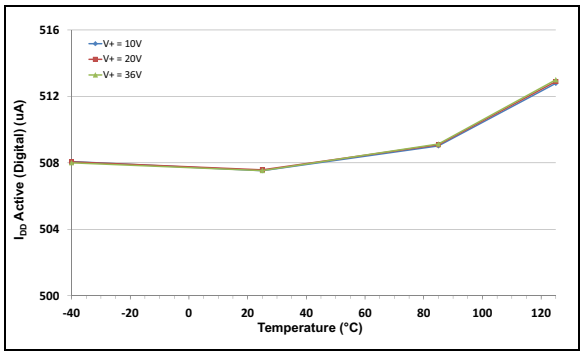


FIGURE 1-2: *Device Digital Supply Active Current (I_{DDD}) vs. Temperature and V+ Voltage (V_L = 5.5V, F_{SCL} = 3.4 MHz, A = V+, B = V-, DGND = V-, V+ = 10V, 20V and 36V).*

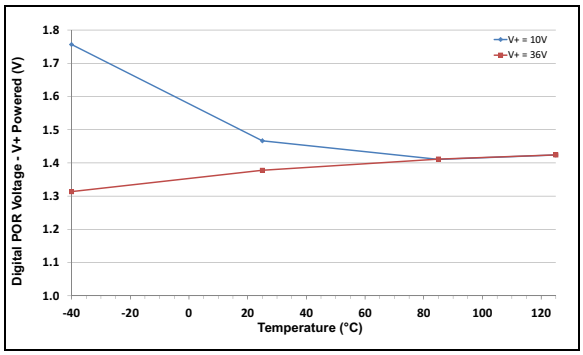


FIGURE 1-4: *Digital Supply POR Voltage (V_{DPOR}) vs. Temperature and V+ Voltage (V+ = 10V and 36V).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.5V, DGND = V-, V+ = 36V.

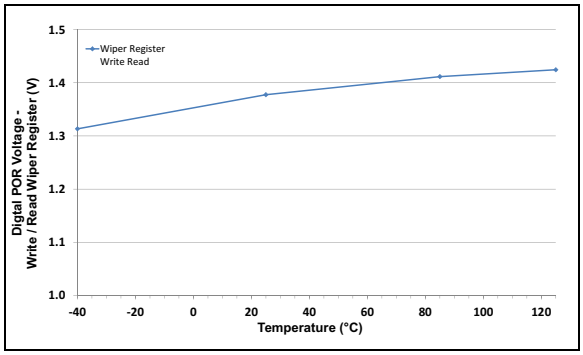


FIGURE 1-5: *Digital Supply POR Voltage (V_{DPOR}) vs. Temperature (Analog Supply (V+/V-) Not Powered).*

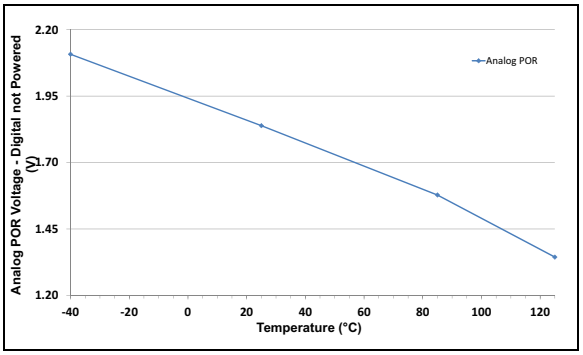


FIGURE 1-6: *Analog Supply POR Voltage (V_{APOR}) vs. Temperature (Digital Supply (V_L/DGND) Not Powered).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

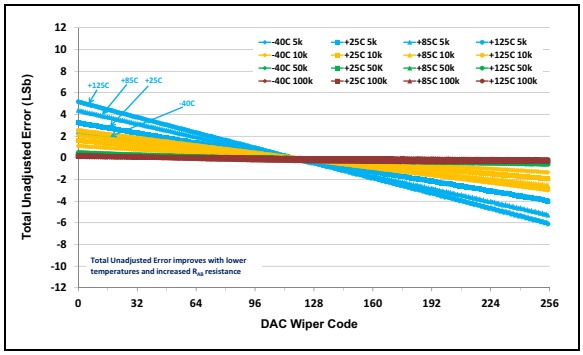


FIGURE 1-7: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting, R_{AB} Resistance and Temperature (**8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

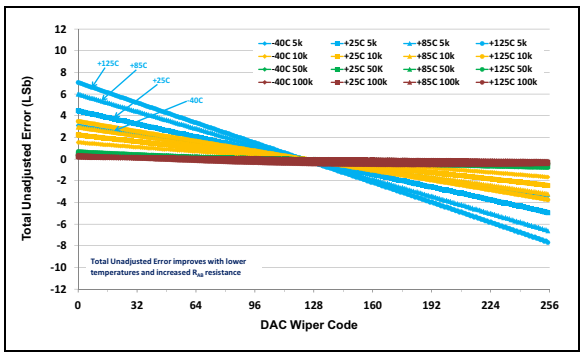


FIGURE 1-8: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting, R_{AB} Resistance and Temperature (**8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

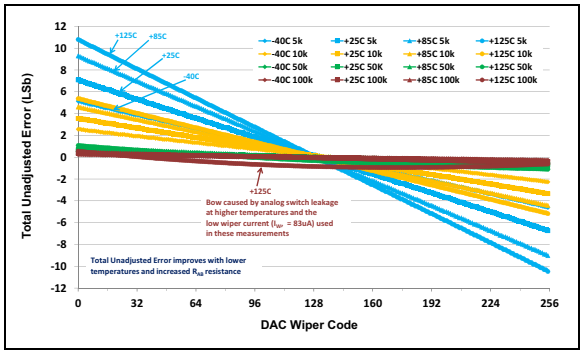


FIGURE 1-9: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting, R_{AB} Resistance and Temperature (**8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

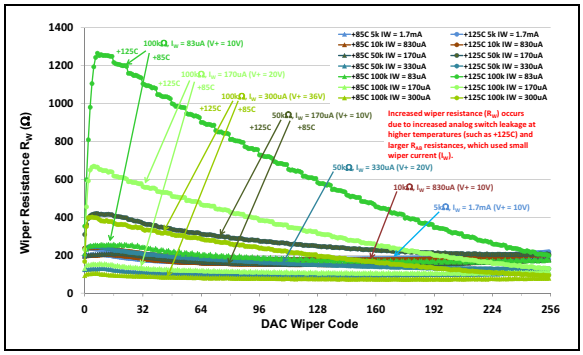


FIGURE 1-10: *Wiper Resistance (R_W) vs. Wiper Setting, R_{AB} Resistance, I_W Current and Temperature (**8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V

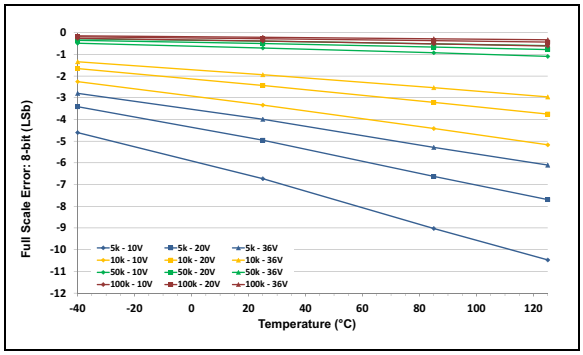


FIGURE 1-11: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature, R_{AB} Resistance and V+ Voltage (**8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

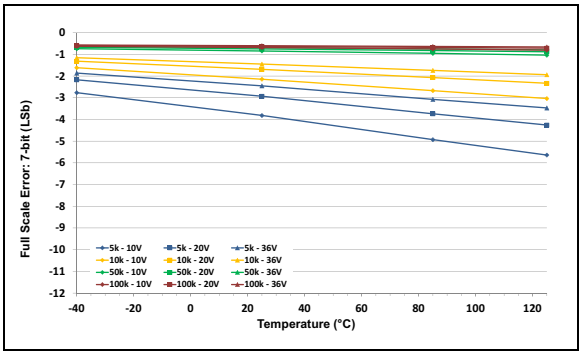


FIGURE 1-14: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature, R_{AB} Resistance and V+ Voltage (**7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

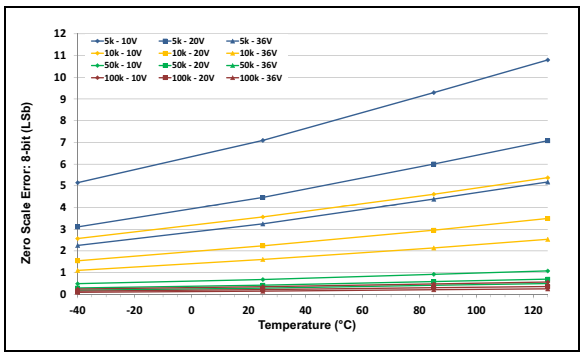


FIGURE 1-12: *Zero Scale Error (Pot. Mode) (FSE) vs. Temperature, R_{AB} Resistance and V+ Voltage (**8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

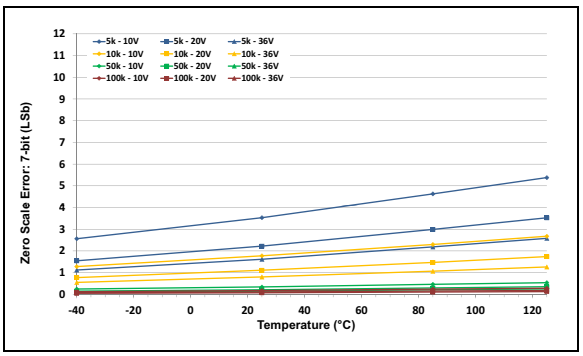


FIGURE 1-15: *Zero Scale Error (Pot. Mode) (FSE) vs. Temperature, R_{AB} Resistance and V+ Voltage (**7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

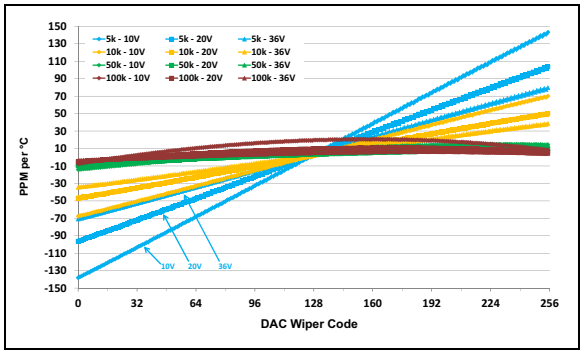


FIGURE 1-13: *V_W PPM / °C (Pot. Mode) vs. Temperature, R_{AB} Resistance and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 255, +25°C)}$) * 1,000,000/+165°C) (**8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

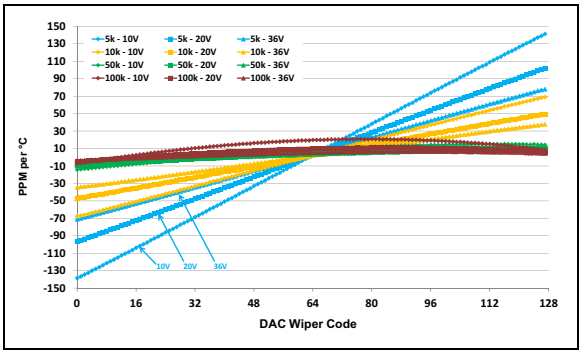


FIGURE 1-16: *V_W PPM / °C (Pot. Mode) vs. Temperature, R_{AB} Resistance and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 127, +25°C)}$) * 1,000,000/+165°C) (**7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

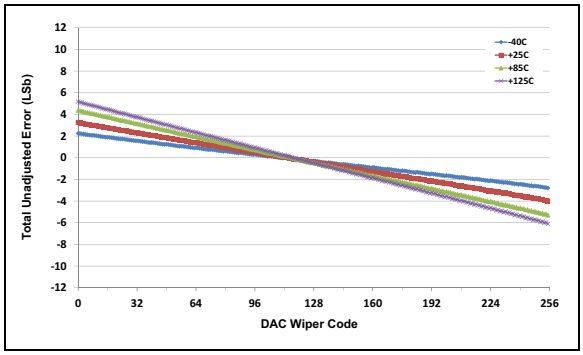


FIGURE 1-17: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

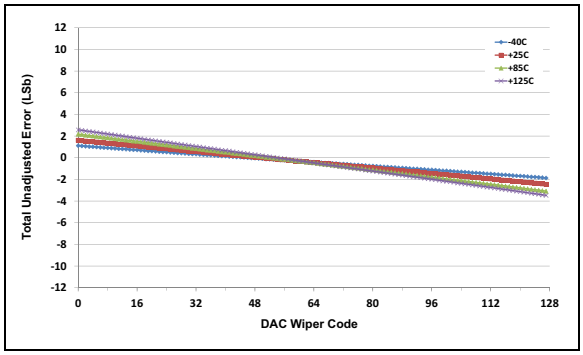


FIGURE 1-20: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

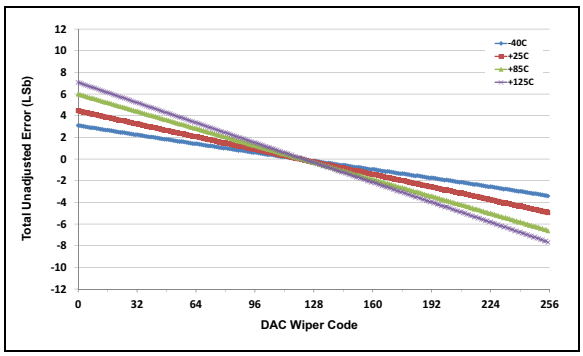


FIGURE 1-18: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

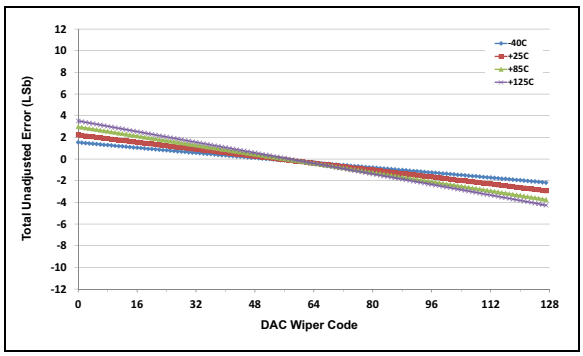


FIGURE 1-21: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

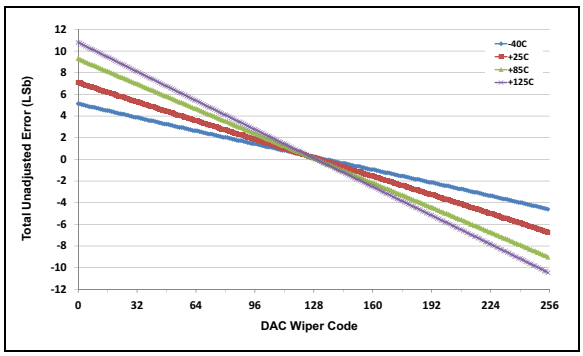


FIGURE 1-19: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

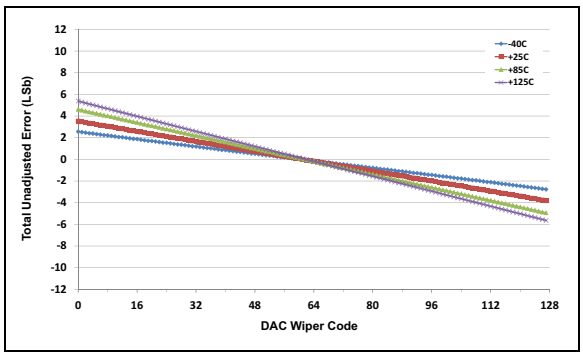


FIGURE 1-22: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

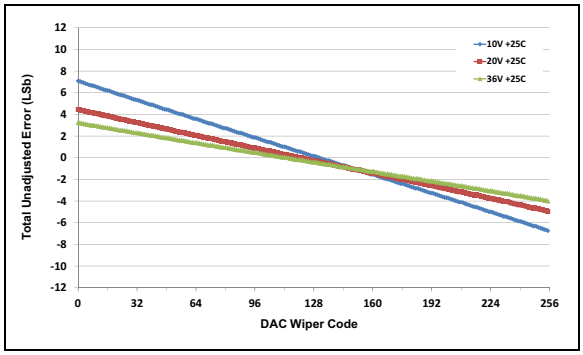


FIGURE 1-23: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

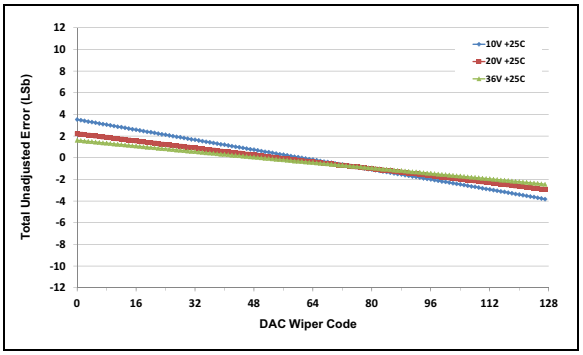


FIGURE 1-26: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

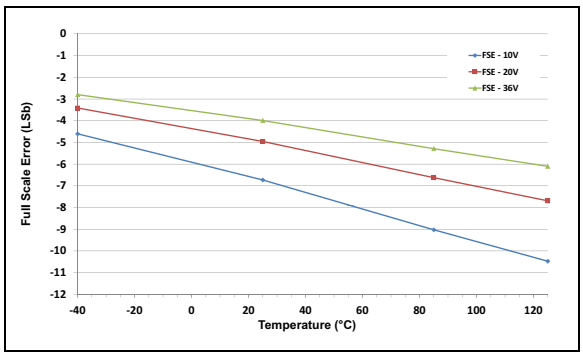


FIGURE 1-24: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

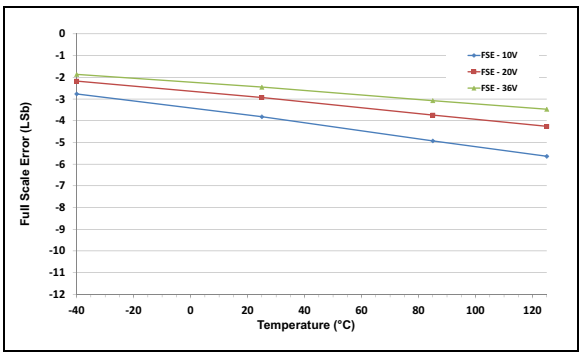


FIGURE 1-27: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

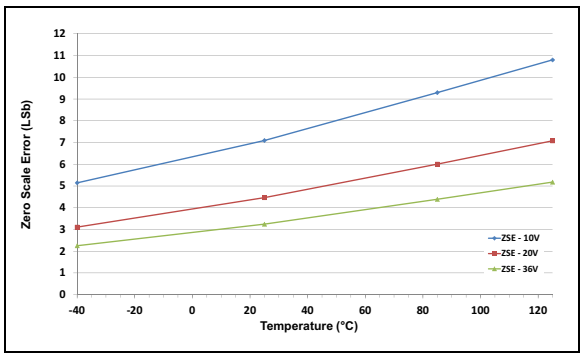


FIGURE 1-25: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

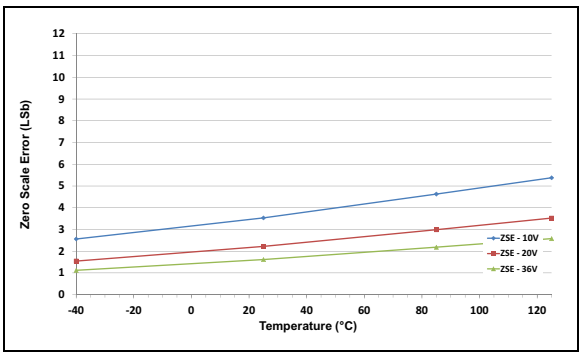


FIGURE 1-28: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

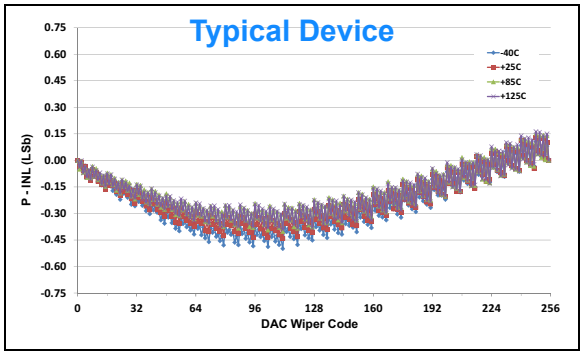


FIGURE 1-29: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

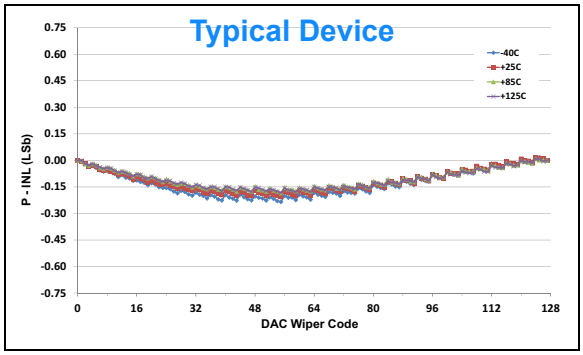


FIGURE 1-32: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

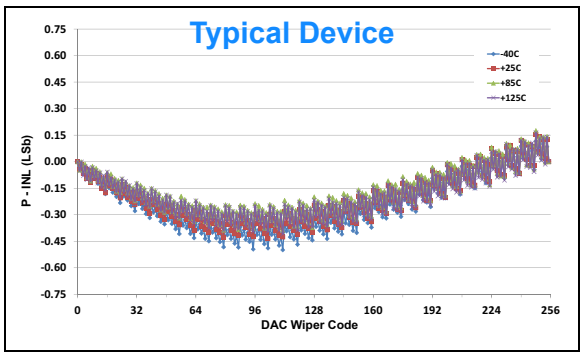


FIGURE 1-30: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

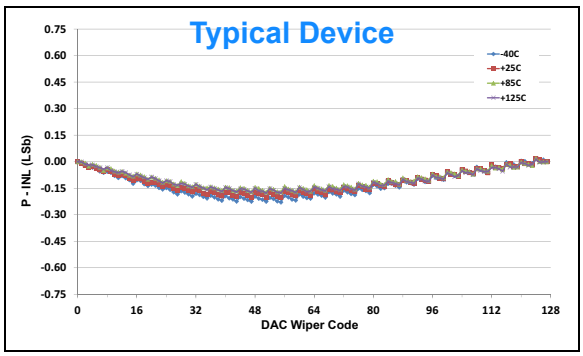


FIGURE 1-33: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

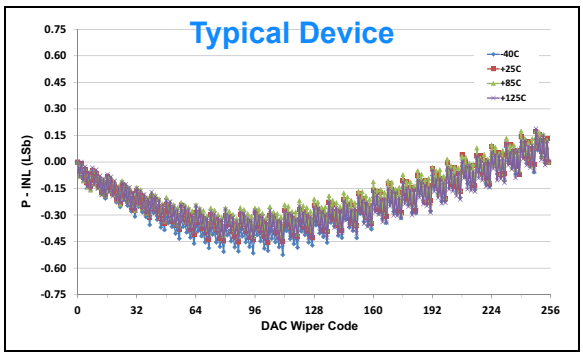


FIGURE 1-31: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

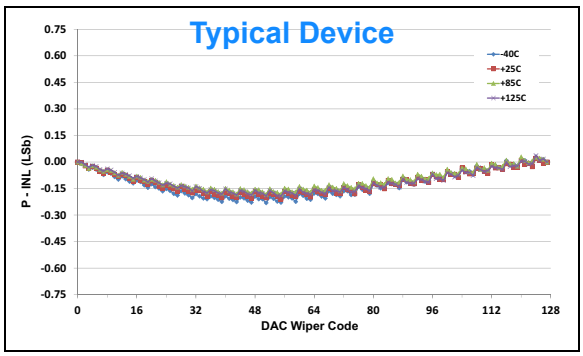


FIGURE 1-34: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

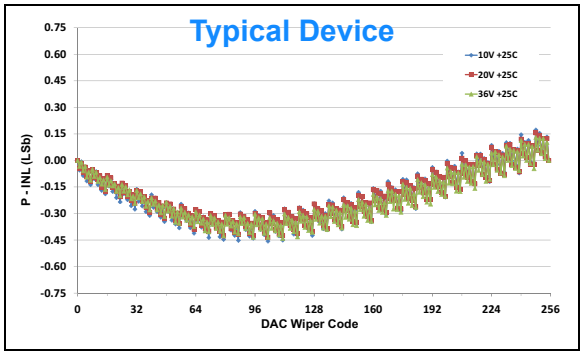


FIGURE 1-35: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

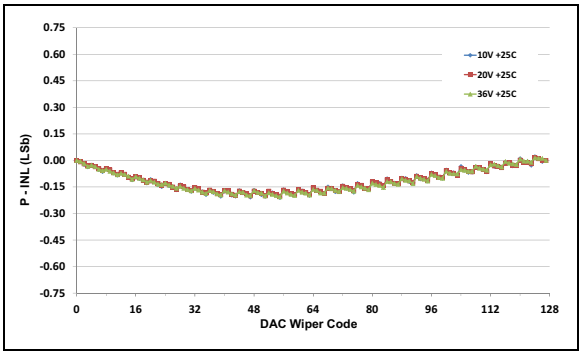


FIGURE 1-36: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

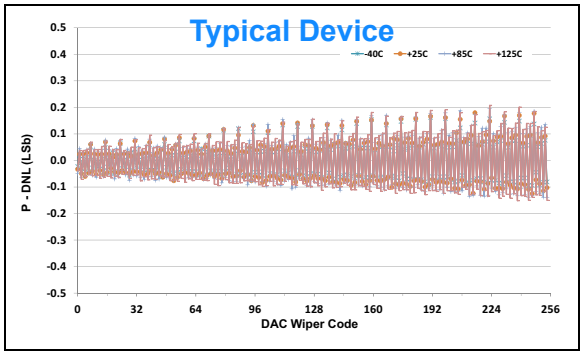


FIGURE 1-37: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

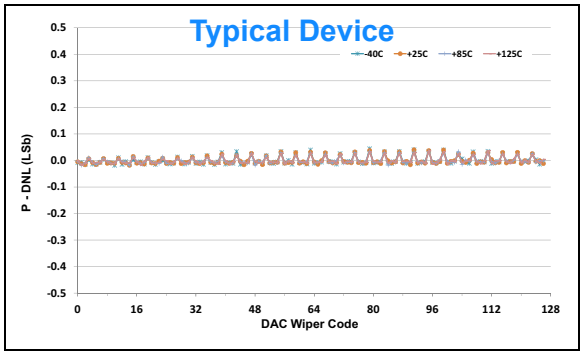


FIGURE 1-40: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

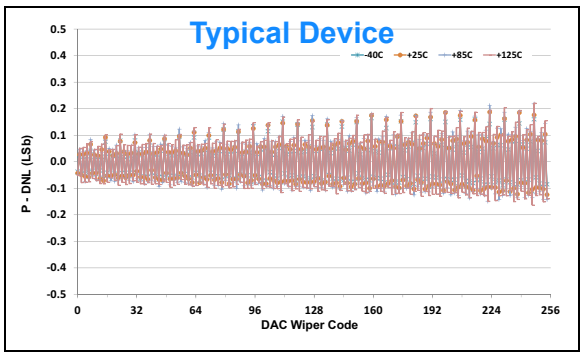


FIGURE 1-38: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

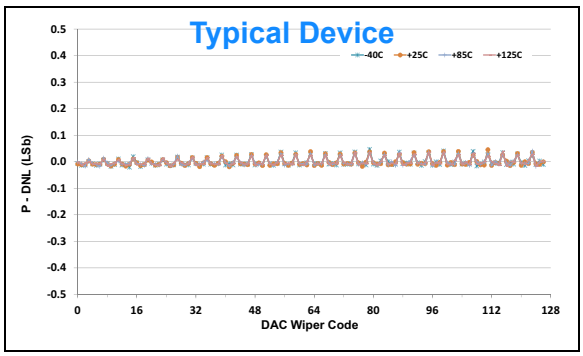


FIGURE 1-41: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

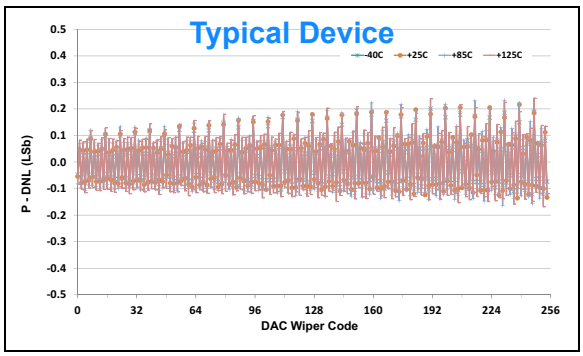


FIGURE 1-39: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

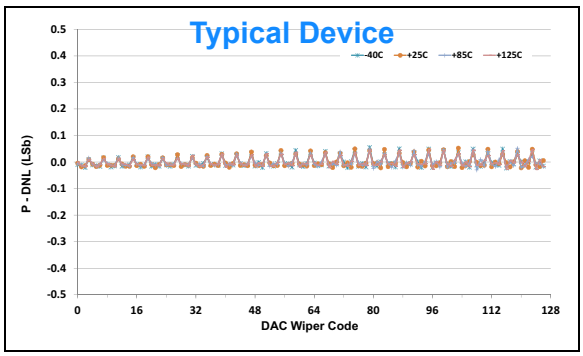


FIGURE 1-42: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

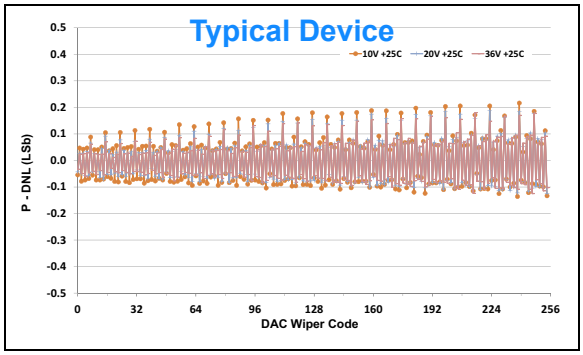


FIGURE 1-43: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

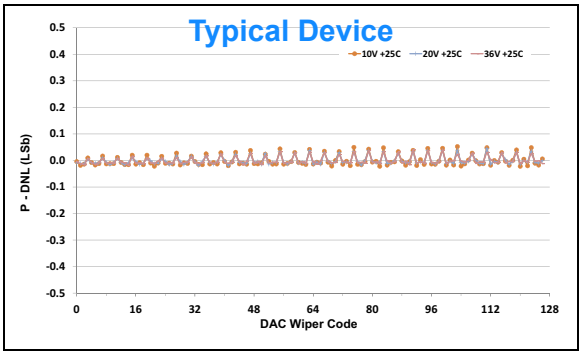


FIGURE 1-44: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

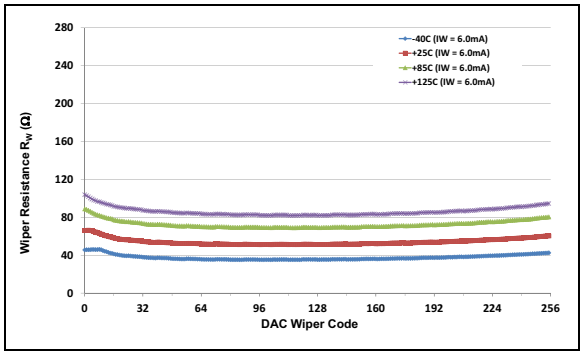


FIGURE 1-45: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 6.0 mA**).*

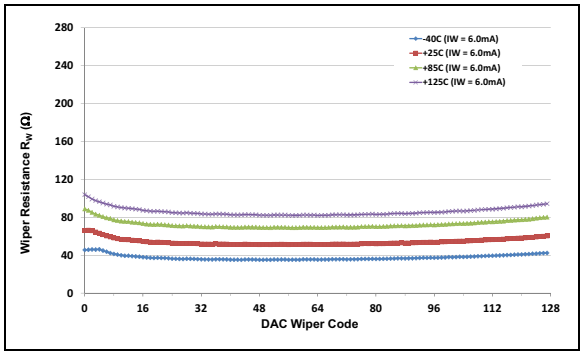


FIGURE 1-48: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 6.0 mA**).*

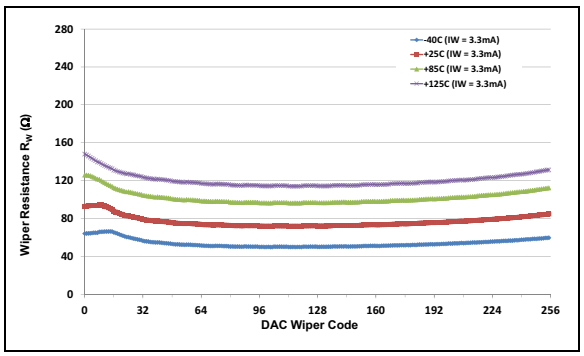


FIGURE 1-46: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 3.3 mA**).*

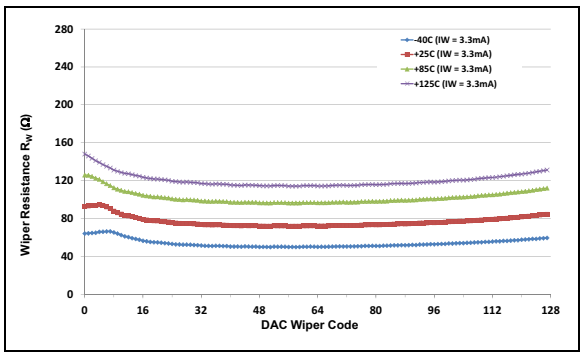


FIGURE 1-49: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 3.3 mA**).*

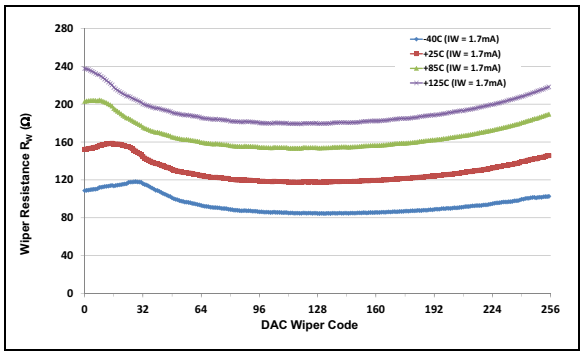


FIGURE 1-47: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 1.7 mA**).*

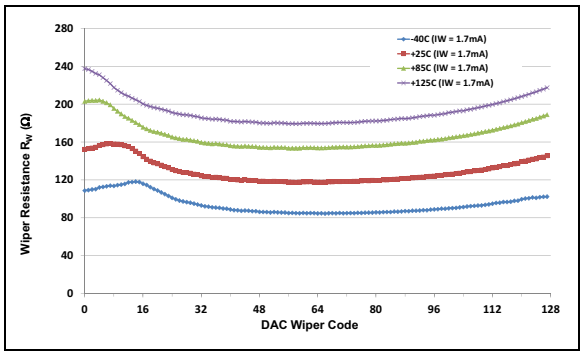


FIGURE 1-50: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 1.7 mA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V

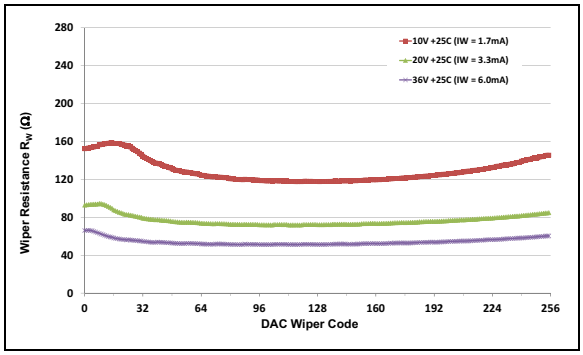


FIGURE 1-51: *Wiper Resistance (R_W) vs. Wiper Setting @ +29°C (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 6.0mA**, **V+ = 20V and I_W = 3.3 mA**, **V+ = 10V and I_W = 1.7 mA**).*

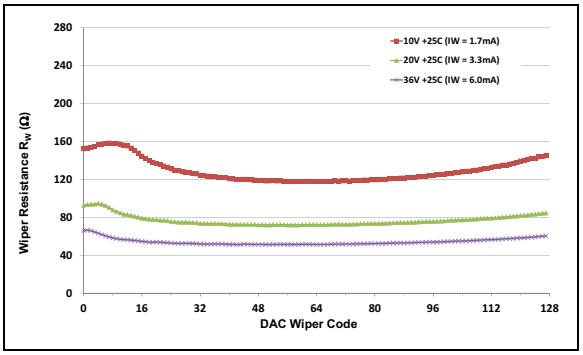


FIGURE 1-52: *Wiper Resistance (R_W) vs. Wiper Setting @ +29°C (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, **V+ = 36V and I_W = 6.0mA**, **V+ = 20V and I_W = 3.3 mA**, **V+ = 10V and I_W = 1.7 mA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

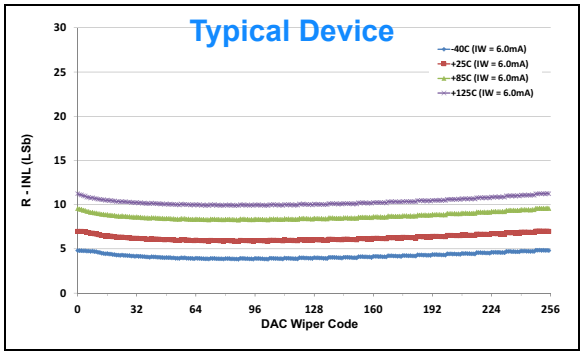


FIGURE 1-53: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 6.0 mA**).*

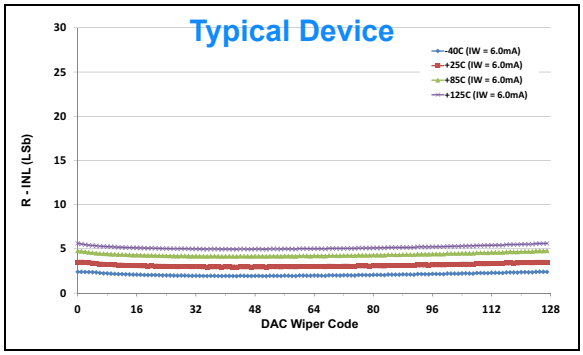


FIGURE 1-56: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 6.0 mA**).*

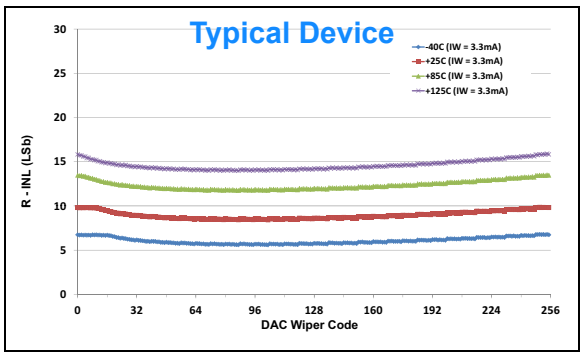


FIGURE 1-54: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 3.3 mA**).*

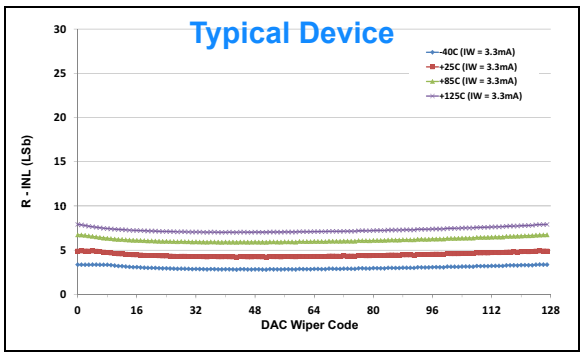


FIGURE 1-57: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 3.3 mA**).*

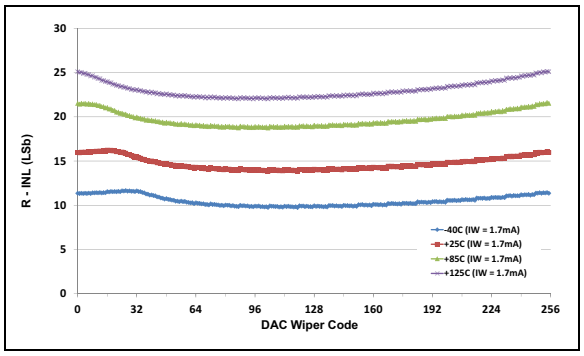


FIGURE 1-55: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 1.7 mA**).*

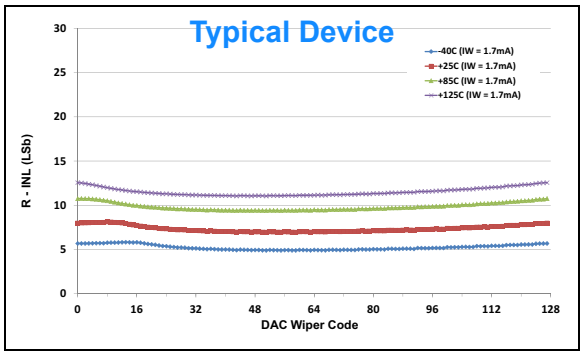


FIGURE 1-58: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 1.7 mA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

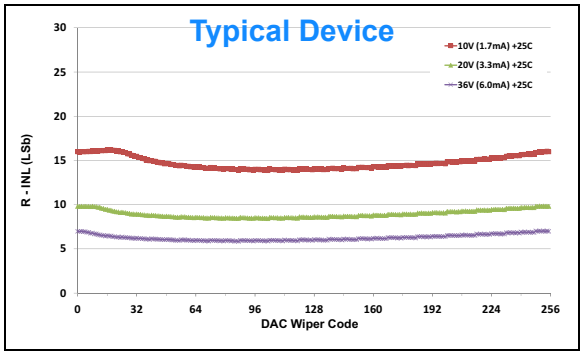


FIGURE 1-59: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 6.0 mA**, **V+ = 20V and I_W = 3.3 mA**, **V+ = 10V and I_W = 1.7 mA**).*

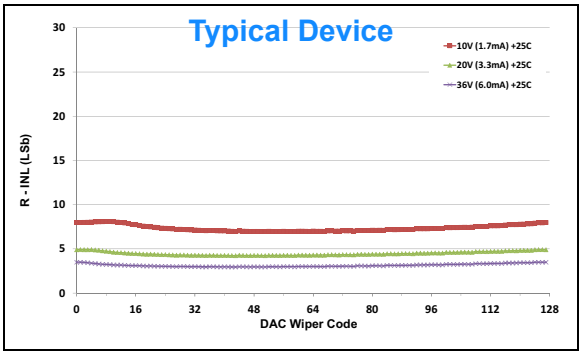


FIGURE 1-60: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 6.0 mA**, **V+ = 20V and I_W = 3.3 mA**, **V+ = 10V and I_W = 1.7 mA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

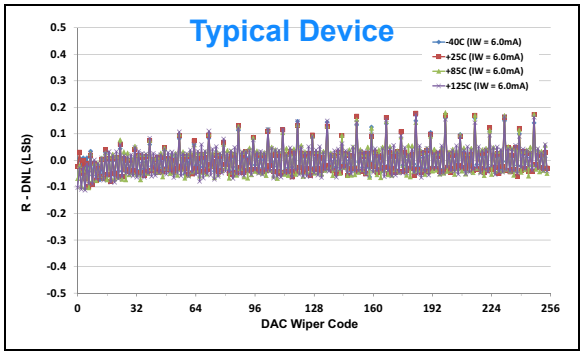


FIGURE 1-61: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 6.0 mA**).*

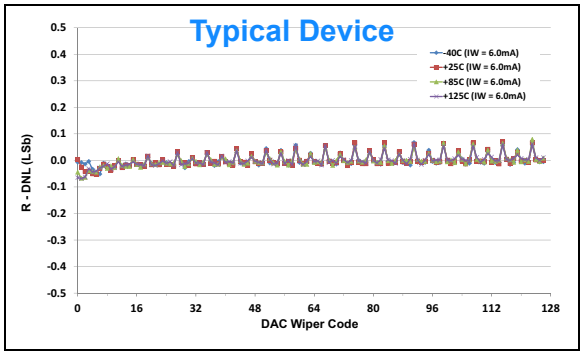


FIGURE 1-64: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 6.0 mA**).*

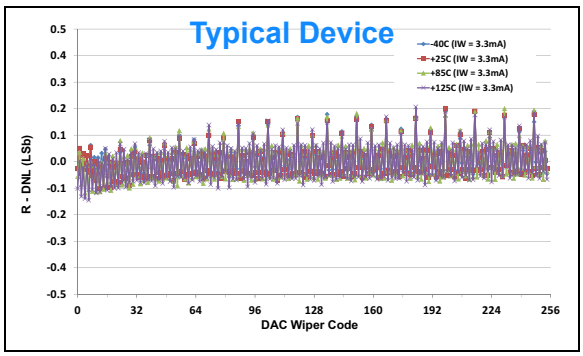


FIGURE 1-62: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 3.3 mA**).*

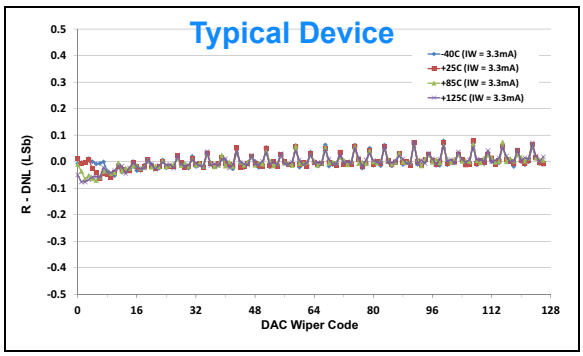


FIGURE 1-65: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 3.3 mA**).*

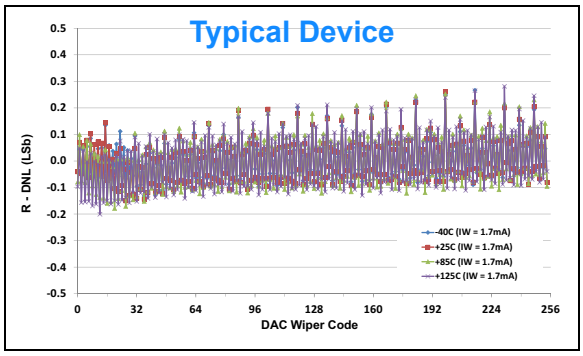


FIGURE 1-63: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 1.7 mA**).*

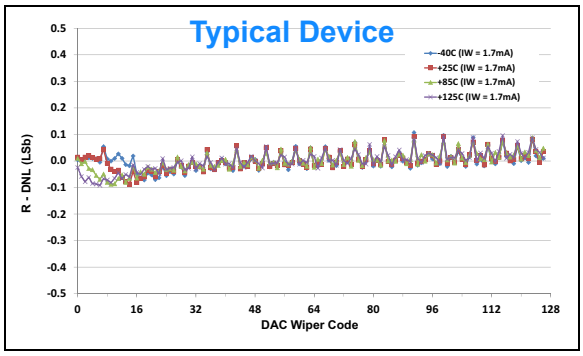


FIGURE 1-66: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**5.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 1.7 mA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

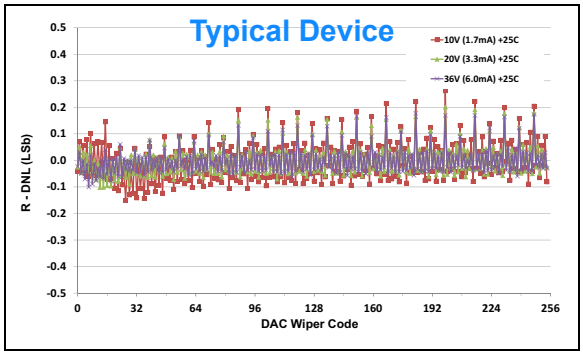


FIGURE 1-67: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 6.0 mA**, **V+ = 20V and I_W = 3.3 mA**, **V+ = 10V and I_W = 1.7 mA**).*

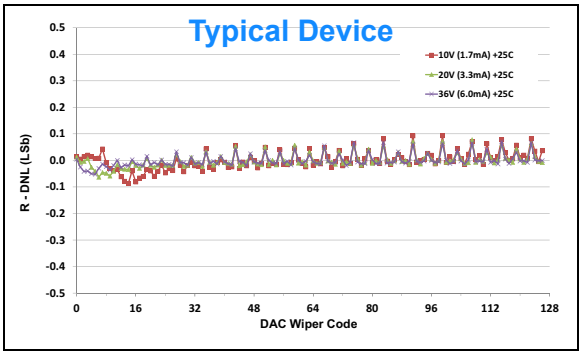


FIGURE 1-68: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (**5.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 6.0 mA**, **V+ = 20V and I_W = 3.3 mA**, **V+ = 10V and I_W = 1.7 mA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

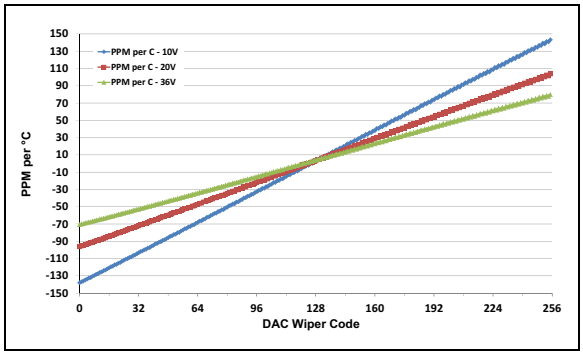


FIGURE 1-69: *V_W PPM/°C (Pot. Mode) vs. Temperature and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 255, +25°C)}$) * 1,000,000/+165°C) (5.0 kΩ, 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

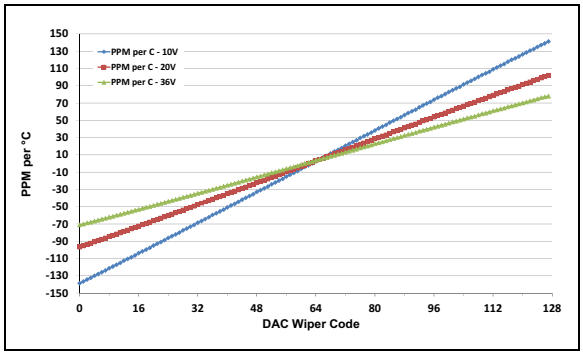


FIGURE 1-70: *V_W PPM/°C (Pot. Mode) vs. Temperature and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 127, +25°C)}$) * 1,000,000/+165°C) (5.0 kΩ, 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

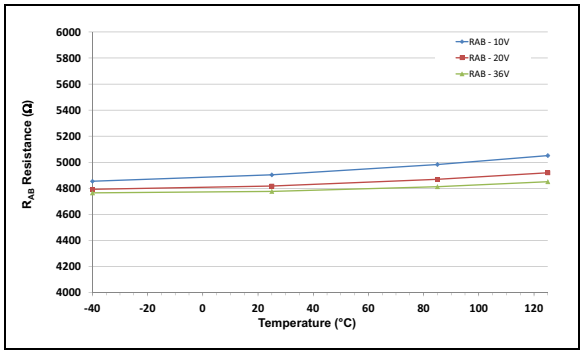


FIGURE 1-71: *R_{AB} Resistance vs. Temperature and V+ Voltage (5.0 kΩ: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

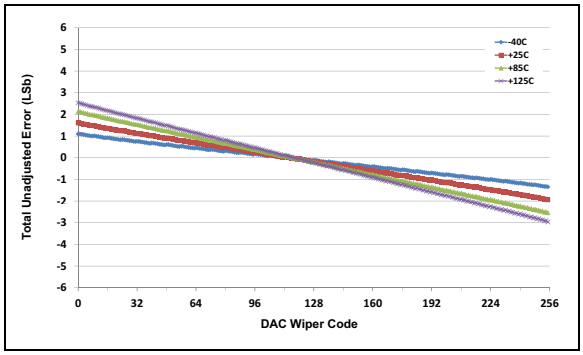


FIGURE 1-72: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

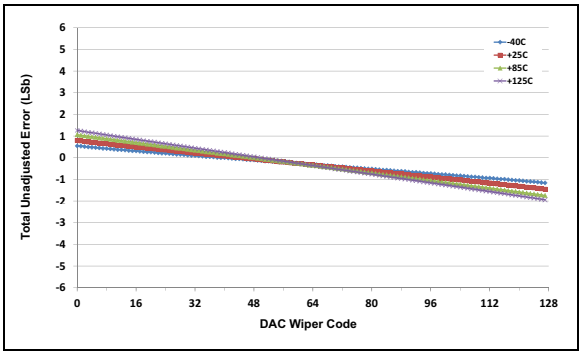


FIGURE 1-75: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

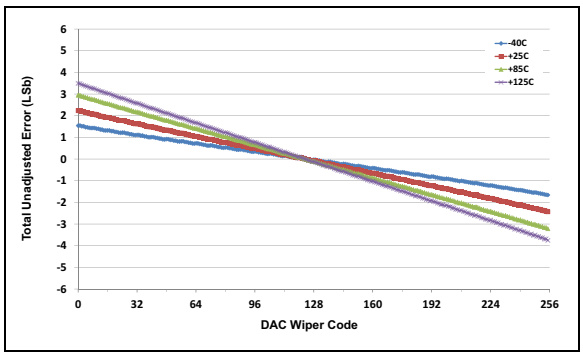


FIGURE 1-73: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

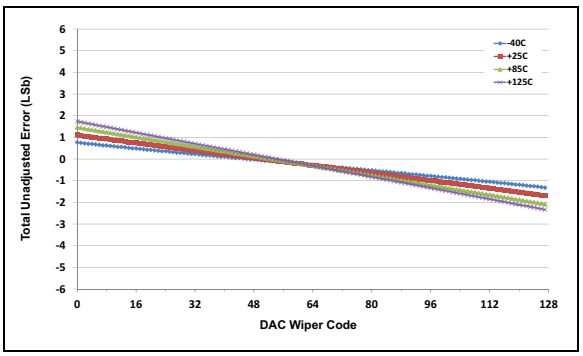


FIGURE 1-76: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

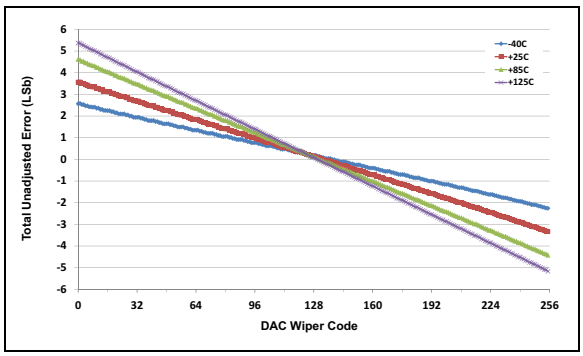


FIGURE 1-74: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

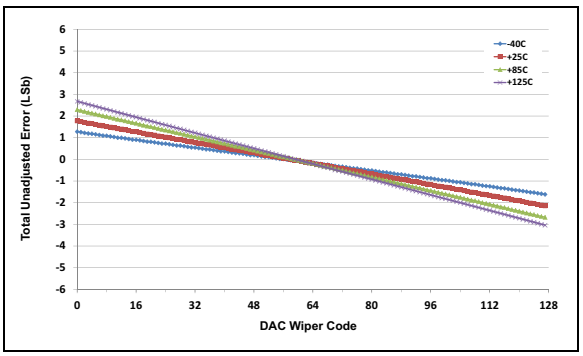


FIGURE 1-77: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

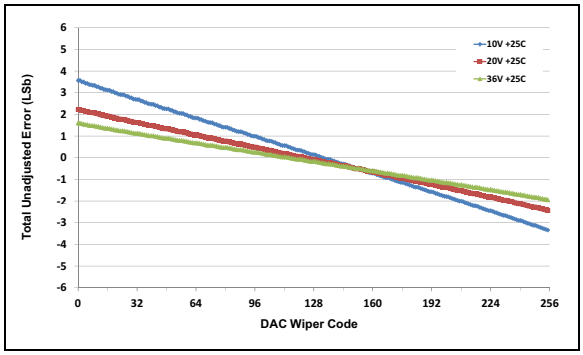


FIGURE 1-78: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

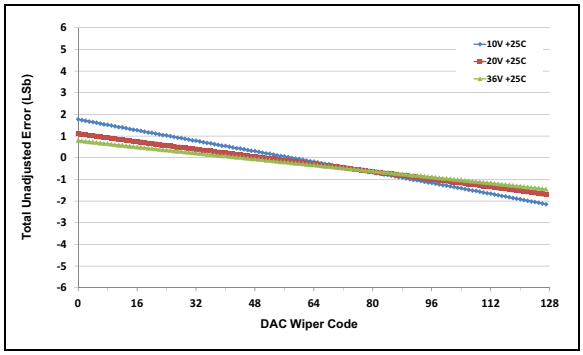


FIGURE 1-81: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

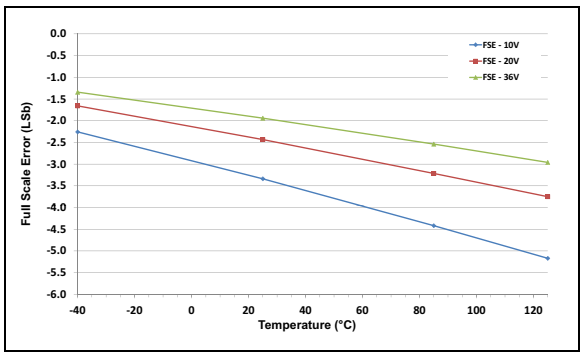


FIGURE 1-79: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

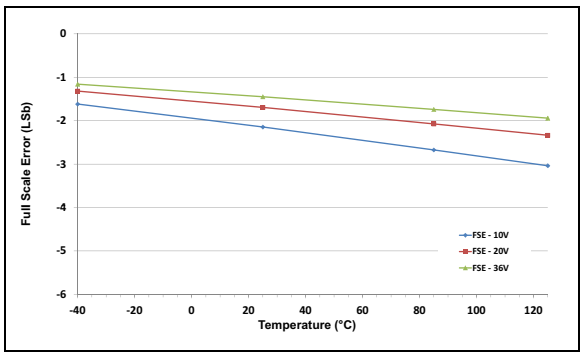


FIGURE 1-82: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

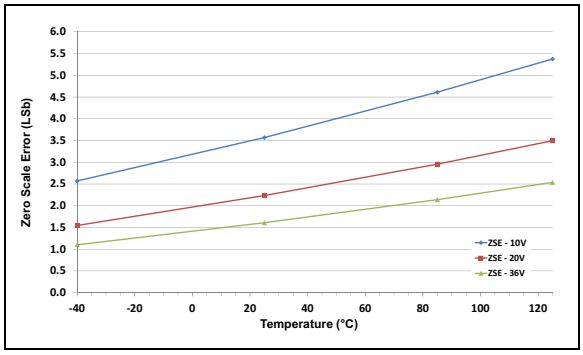


FIGURE 1-80: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

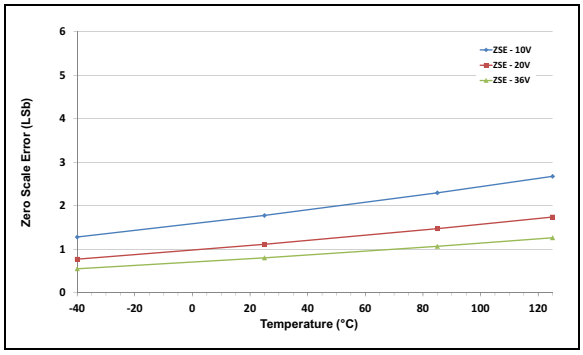


FIGURE 1-83: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

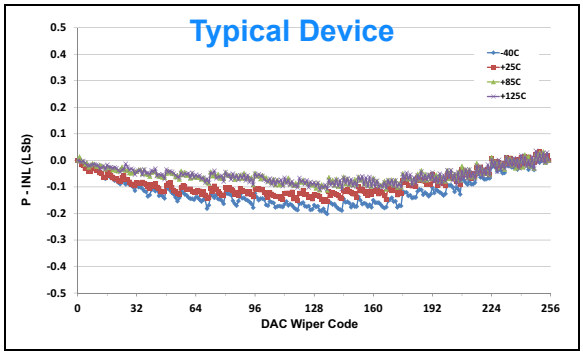


FIGURE 1-84: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

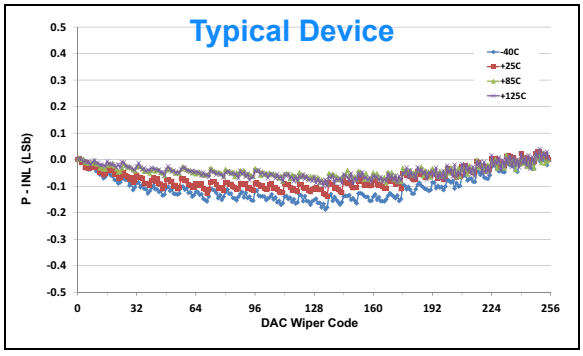


FIGURE 1-85: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

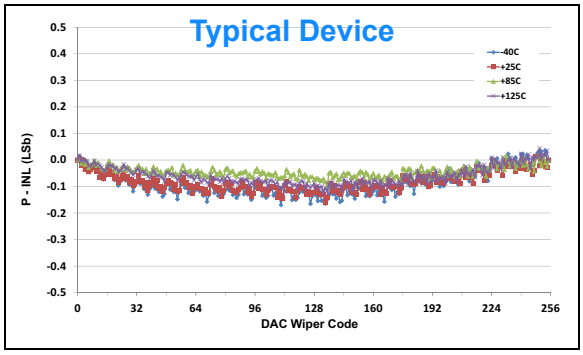


FIGURE 1-86: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

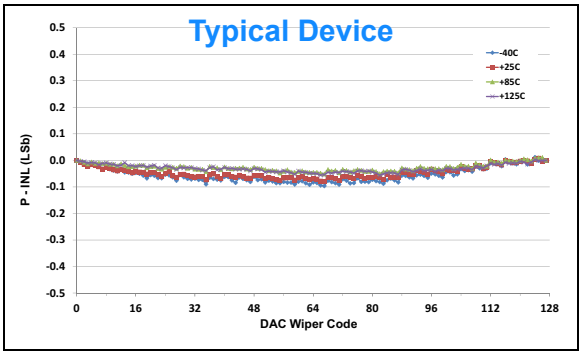


FIGURE 1-87: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

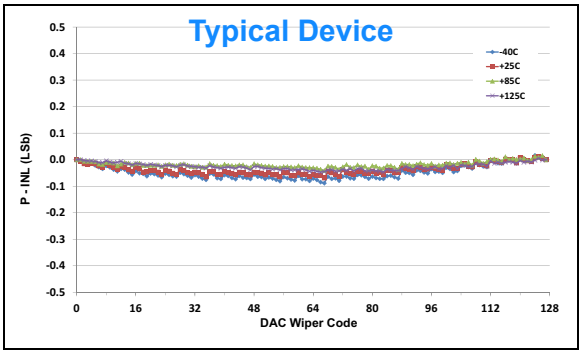


FIGURE 1-88: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

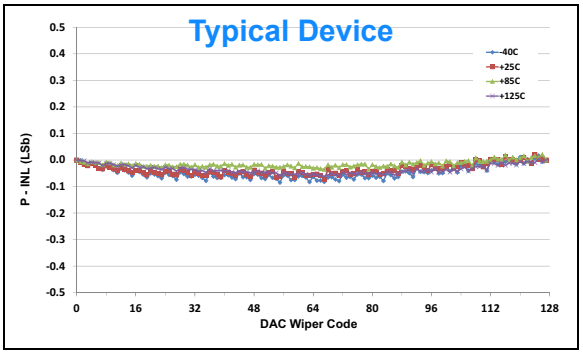


FIGURE 1-89: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

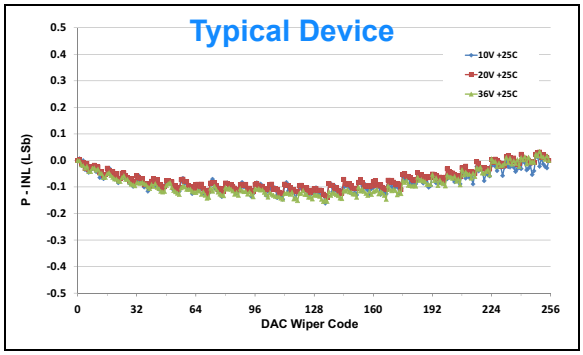


FIGURE 1-90: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

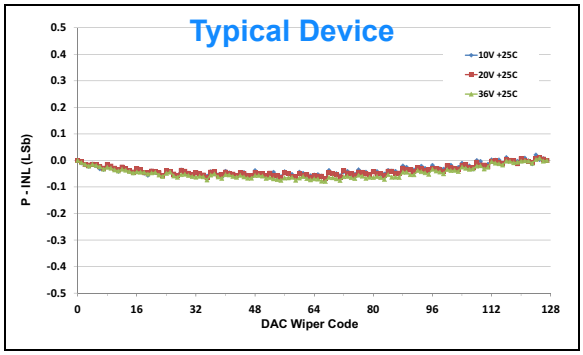


FIGURE 1-91: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

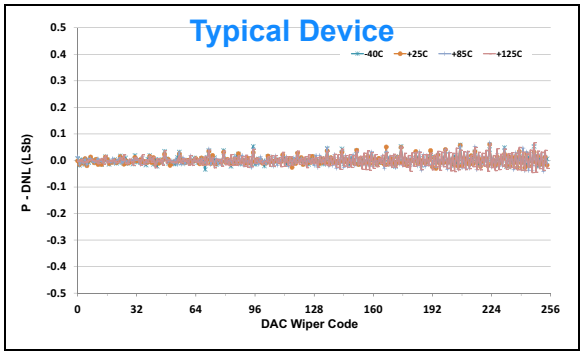


FIGURE 1-92: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

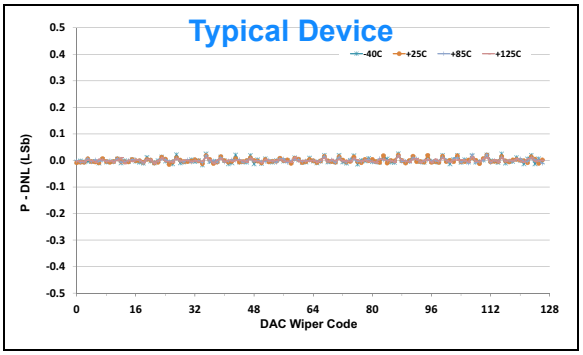


FIGURE 1-95: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

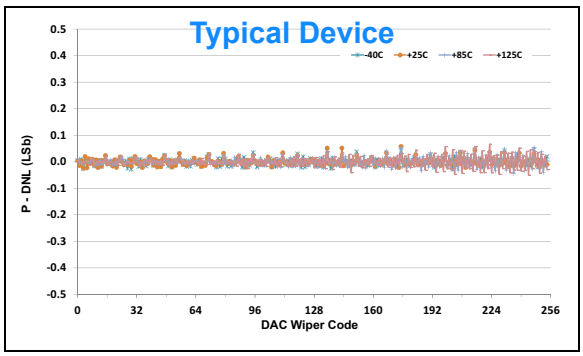


FIGURE 1-93: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

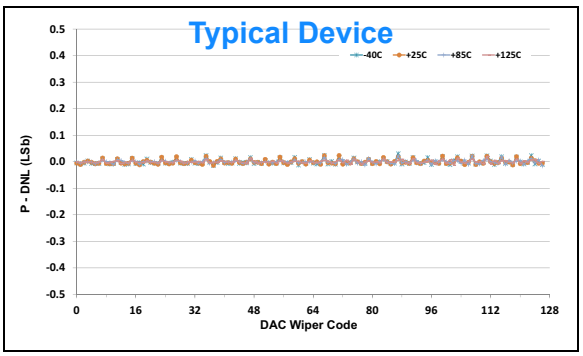


FIGURE 1-96: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

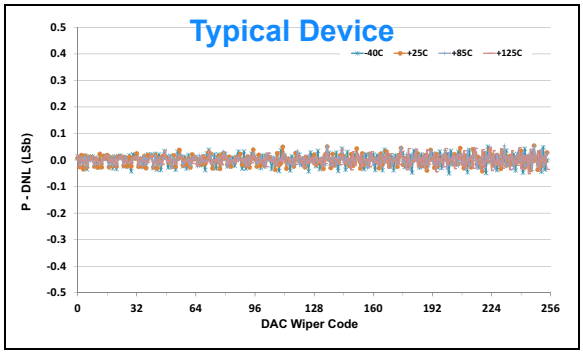


FIGURE 1-94: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

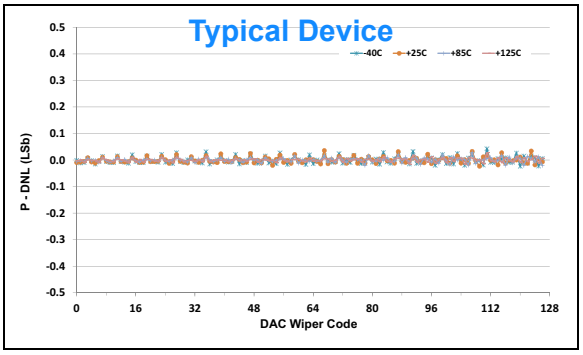


FIGURE 1-97: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

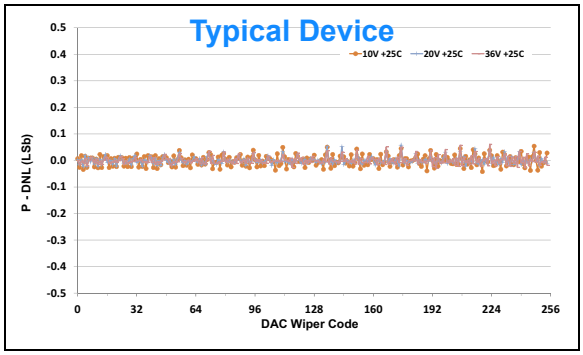


FIGURE 1-98: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

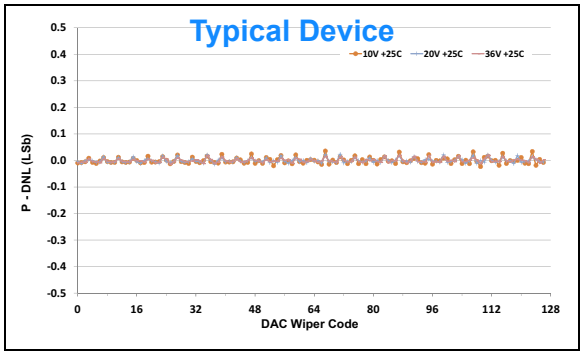


FIGURE 1-99: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

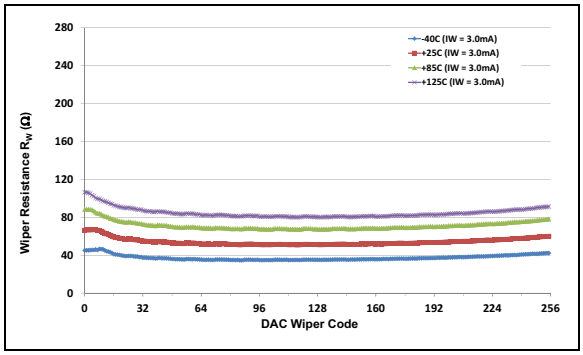


FIGURE 1-100: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 3.0 mA**).*

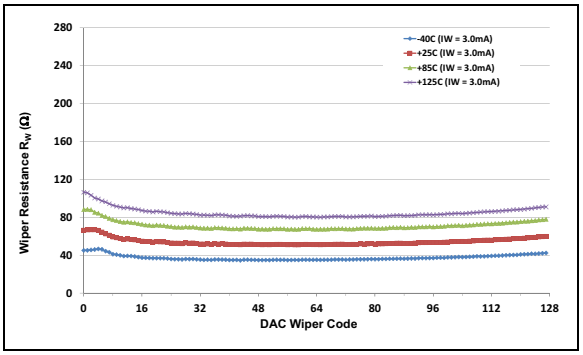


FIGURE 1-103: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 3.0 mA**).*

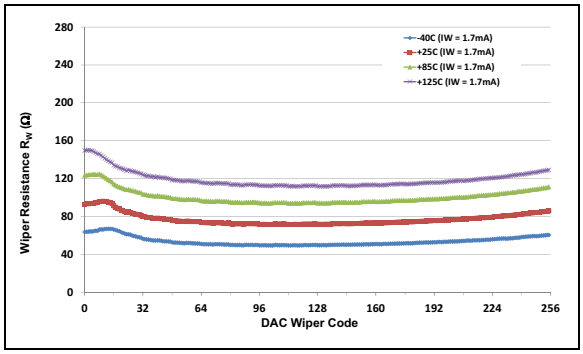


FIGURE 1-101: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 1.7 mA**).*

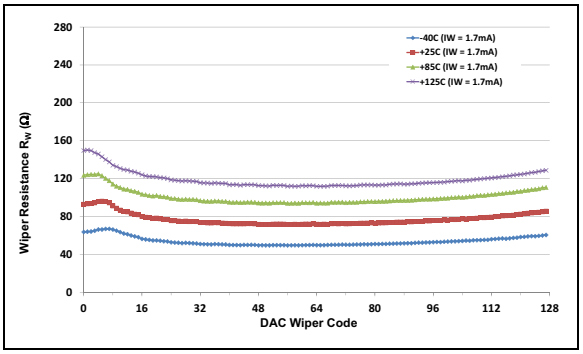


FIGURE 1-104: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 1.7 mA**).*

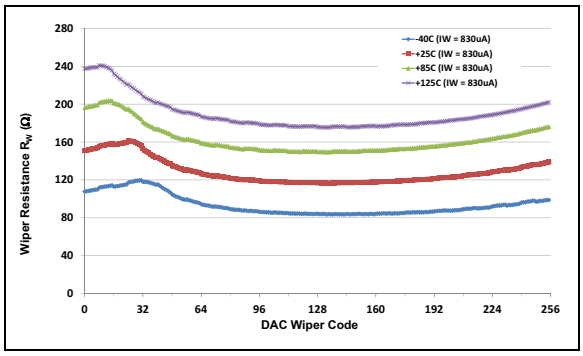


FIGURE 1-102: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 830 µA**).*

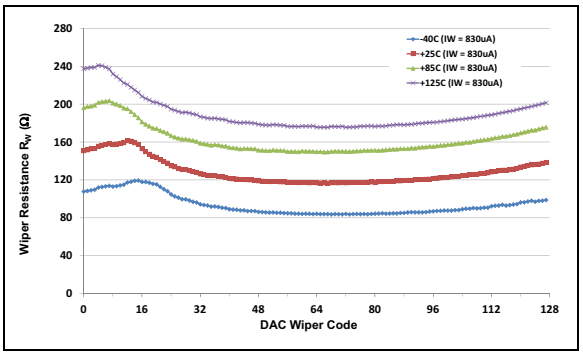


FIGURE 1-105: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 830 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

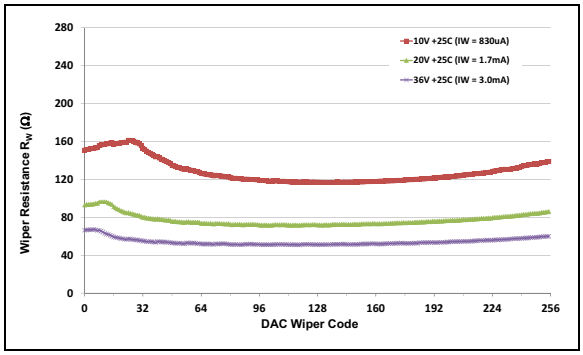


FIGURE 1-106: *Wiper Resistance (R_W) vs. Wiper Setting (@ +29°C) (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 3.0 mA**, **V+ = 20V and I_W = 1.7 mA**, **V+ = 10V and I_W = 830 µA**).*

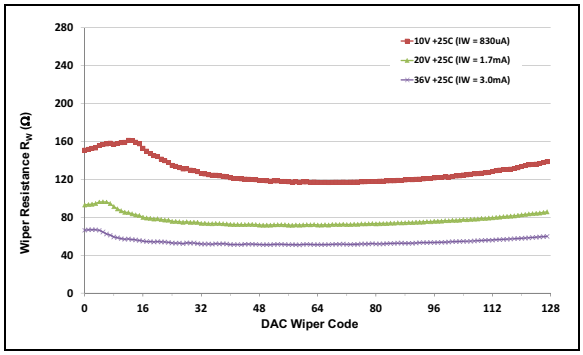


FIGURE 1-107: *Wiper Resistance (R_W) vs. Wiper Setting (@ +29°C) (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 3.0 mA**, **V+ = 20V and I_W = 1.7 mA**, **V+ = 10V and I_W = 830A**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

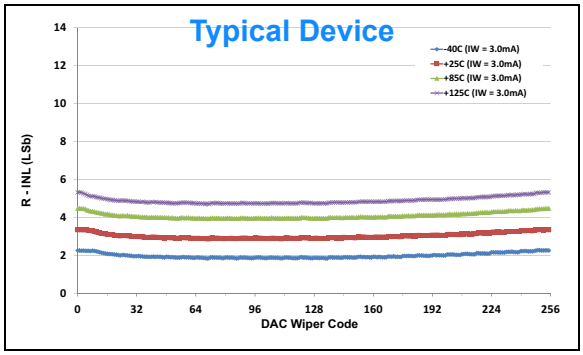


FIGURE 1-108: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 3.0 mA**).*

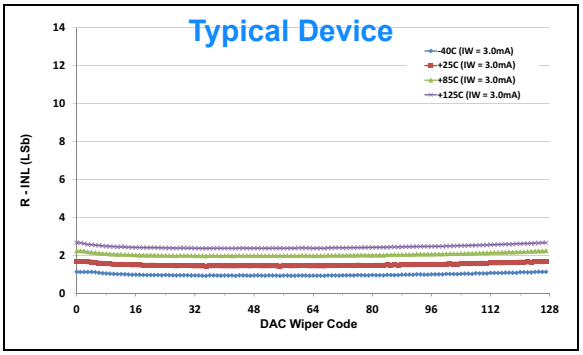


FIGURE 1-111: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 3.0 mA**).*

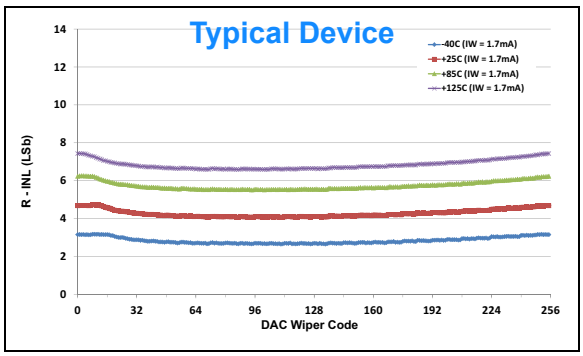


FIGURE 1-109: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 1.7 mA**).*

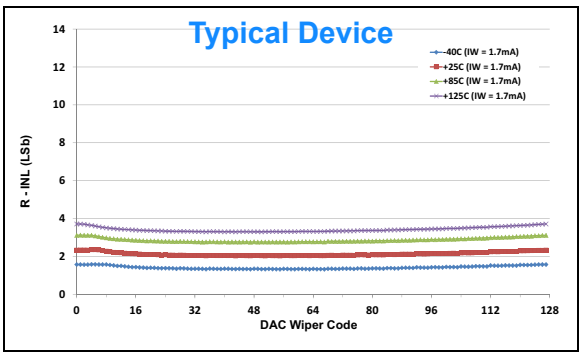


FIGURE 1-112: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 1.7 mA**).*

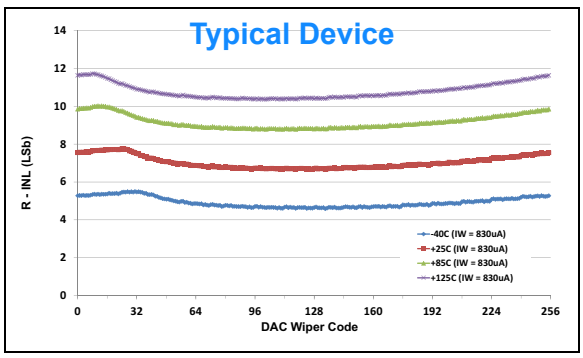


FIGURE 1-110: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**10.0 kΩ, 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 830 µA**).*

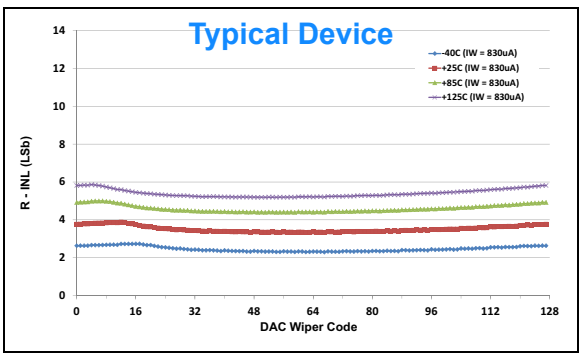


FIGURE 1-113: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**10.0 kΩ, 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 830 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V

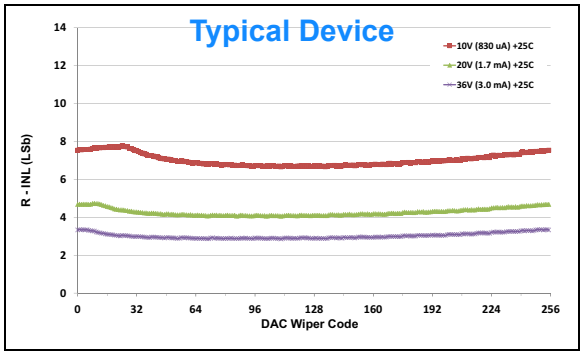


FIGURE 1-114: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 3.0 mA**, **V+ = 20V and I_W = 1.7 mA**, **V+ = 10V and I_W = 830 µA**).*

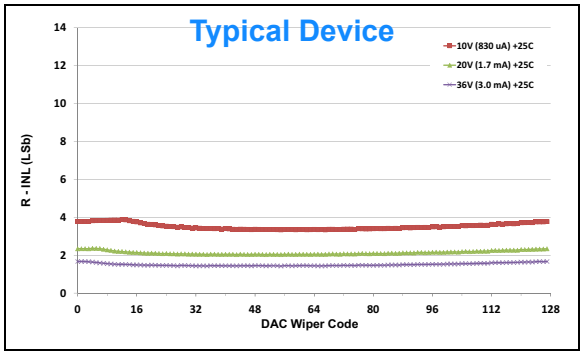


FIGURE 1-115: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 3.0 mA**, **V+ = 20V and I_W = 1.7 mA**, **V+ = 10V and I_W = 830 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

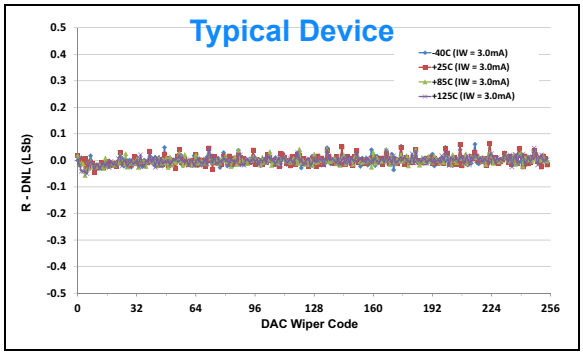


FIGURE 1-116: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 3.0 mA**).*

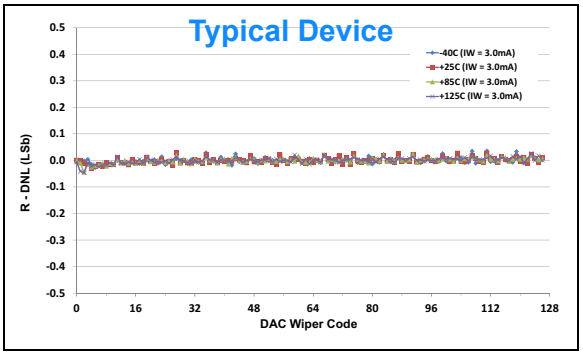


FIGURE 1-119: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 3.0 mA**).*

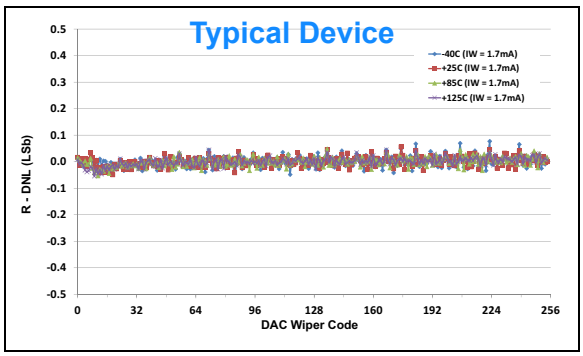


FIGURE 1-117: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 1.7 mA**).*

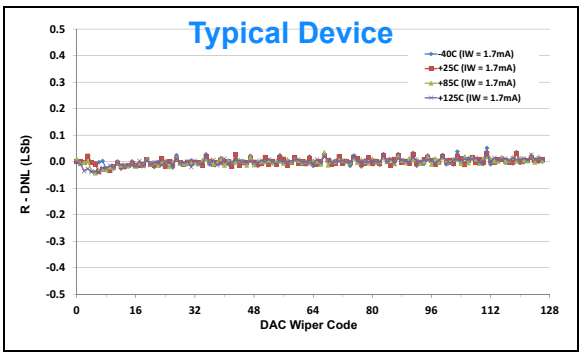


FIGURE 1-120: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 1.7 mA**).*

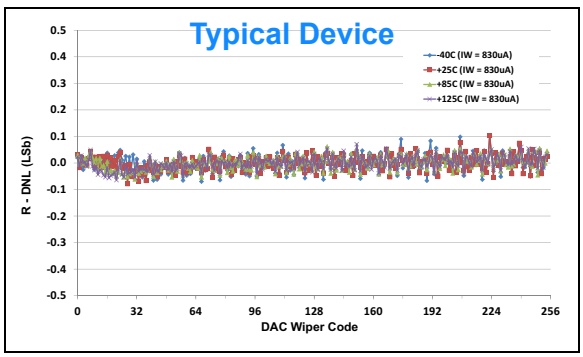


FIGURE 1-118: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 830 µA**).*

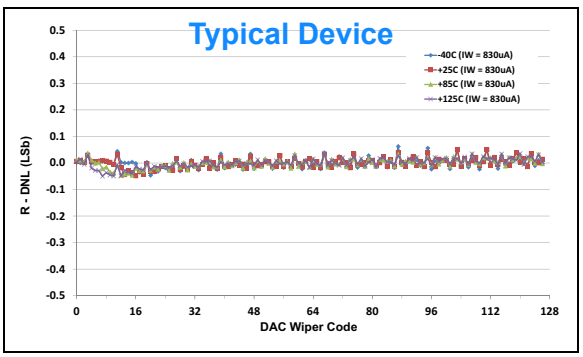


FIGURE 1-121: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 830 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

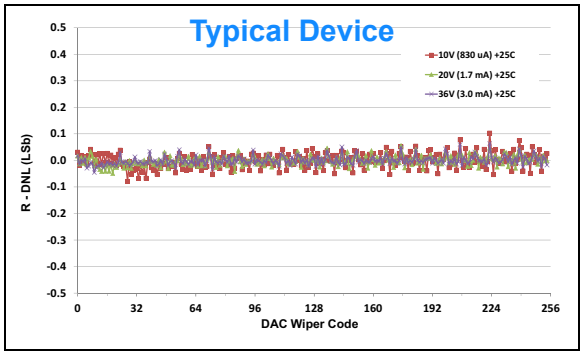


FIGURE 1-122: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 3.0 mA**, **V+ = 20V and I_W = 1.7 mA**, **V+ = 10V and I_W = 830 µA**).*

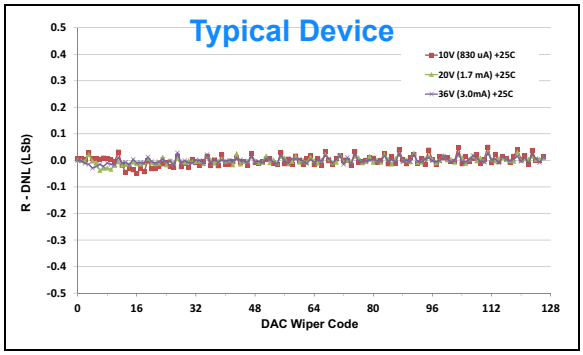


FIGURE 1-123: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (**10.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 3.0 mA**, **V+ = 20V and I_W = 1.7 mA**, **V+ = 10V and I_W = 830 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

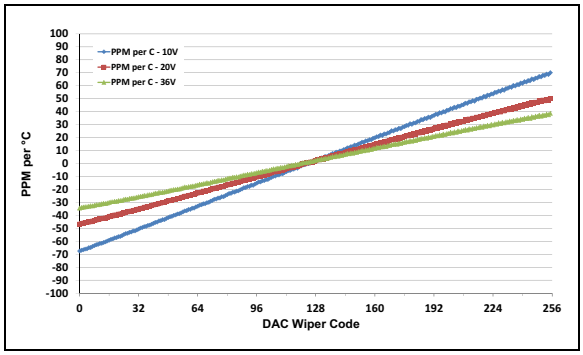


FIGURE 1-124: *V_W PPM/°C (Pot. Mode) vs. Temperature and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 255, +25°C)}$) * 1,000,000/+165°C) (10.0 kΩ, 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

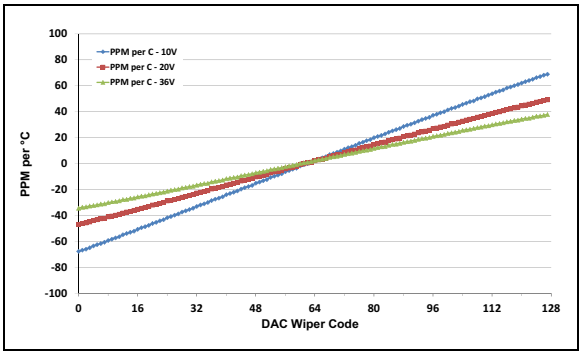


FIGURE 1-125: *V_W PPM/°C (Pot. Mode) vs. Temperature, and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 127, +25°C)}$) * 1,000,000/+165°C) (10.0 kΩ, 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

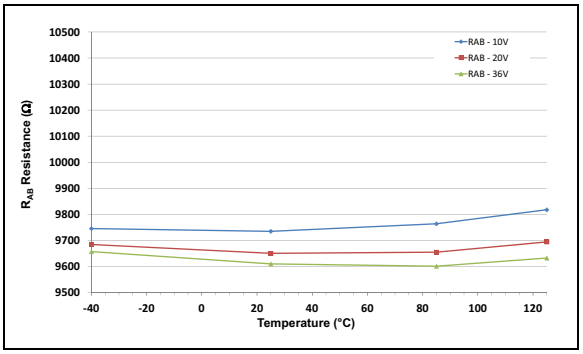


FIGURE 1-126: *R_{AB} Resistance vs. Temperature and V+ Voltage (10.0 kΩ: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

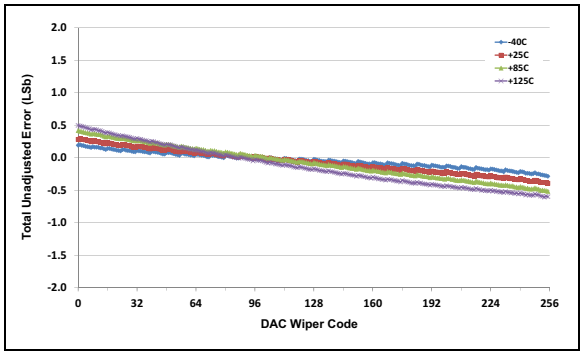


FIGURE 1-127: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

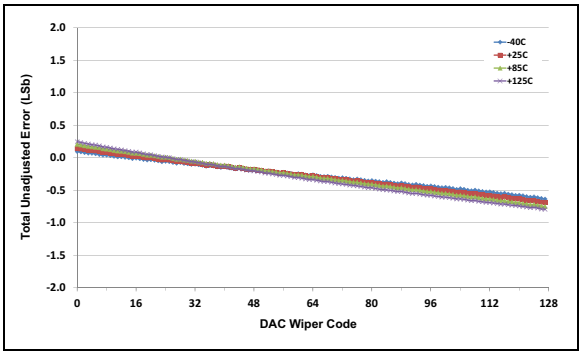


FIGURE 1-130: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

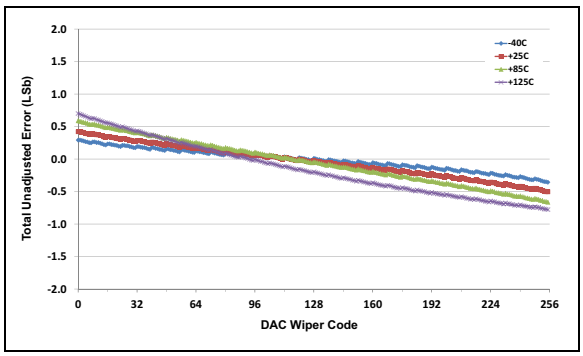


FIGURE 1-128: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

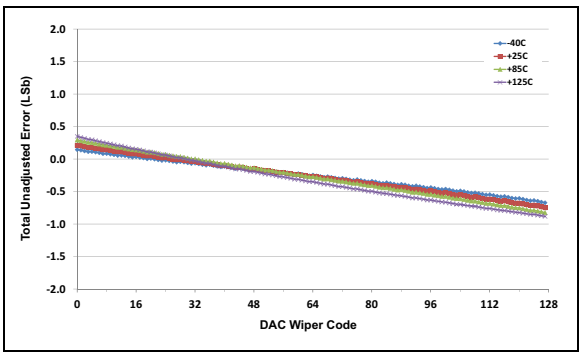


FIGURE 1-131: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

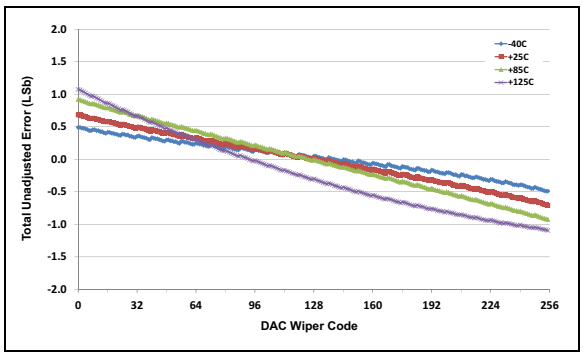


FIGURE 1-129: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

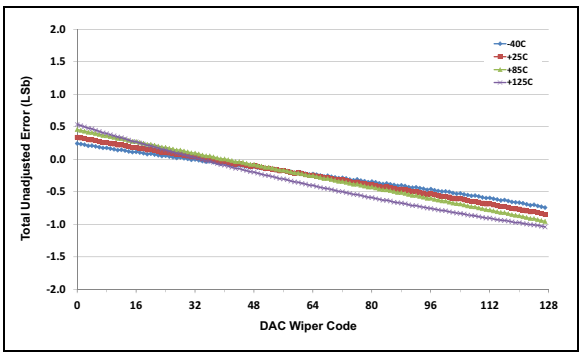


FIGURE 1-132: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

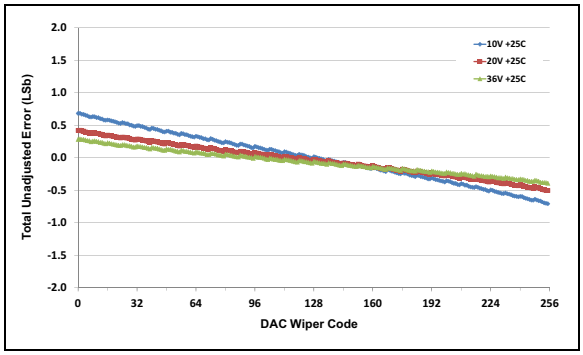


FIGURE 1-133: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

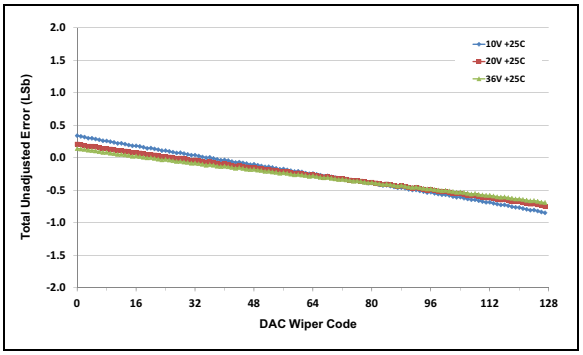


FIGURE 1-136: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

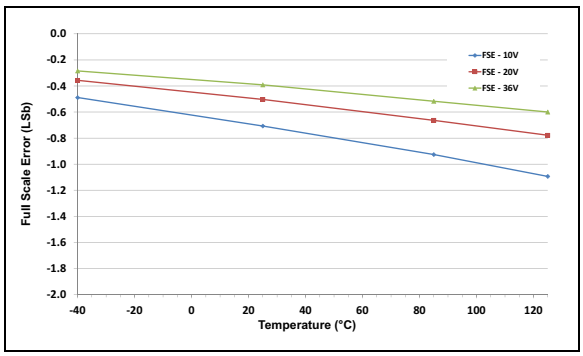


FIGURE 1-134: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

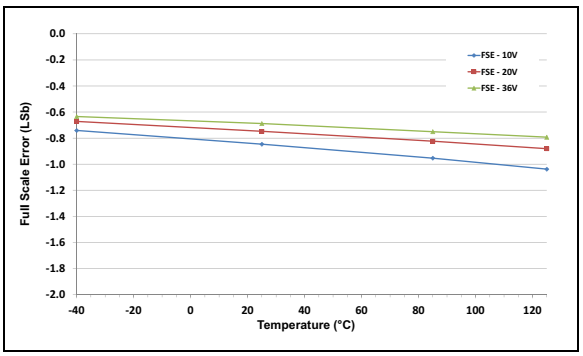


FIGURE 1-137: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

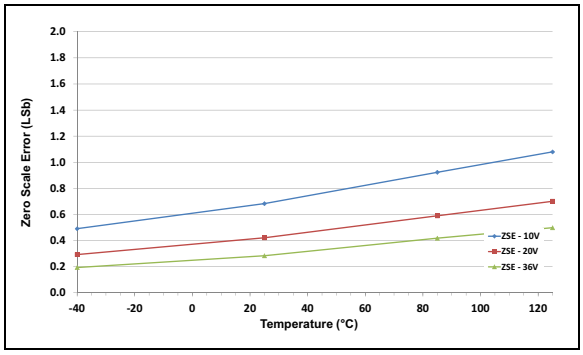


FIGURE 1-135: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

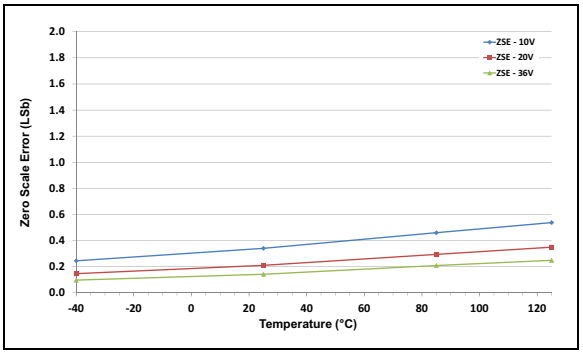


FIGURE 1-138: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

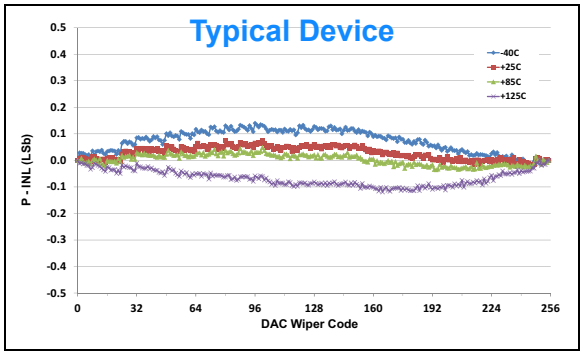


FIGURE 1-139: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V).*

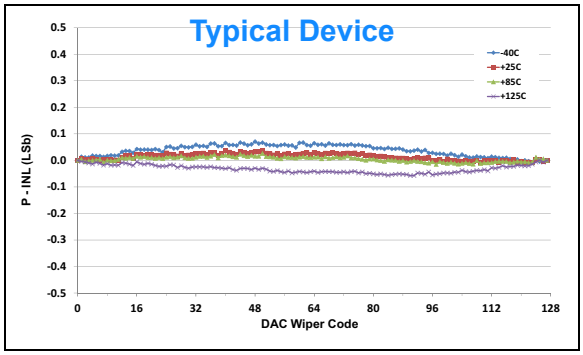


FIGURE 1-142: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V).*

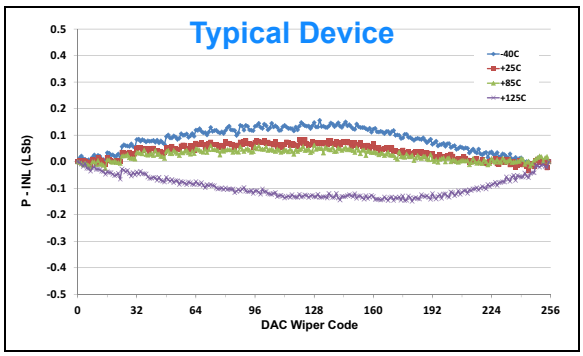


FIGURE 1-140: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V).*

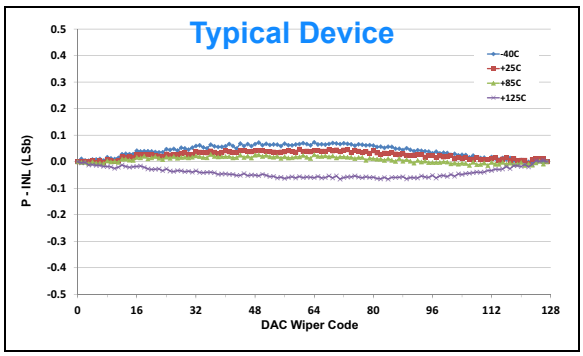


FIGURE 1-143: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V).*

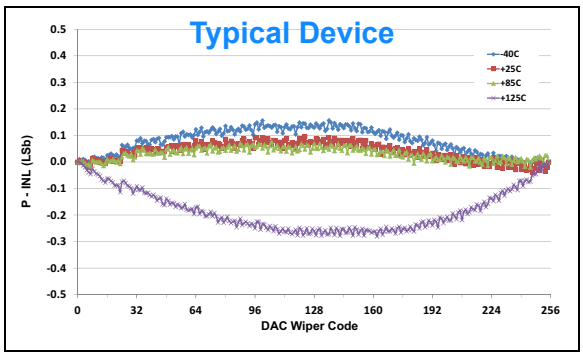


FIGURE 1-141: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V).*

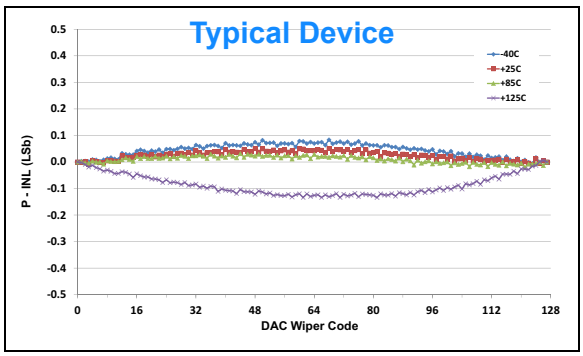


FIGURE 1-144: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

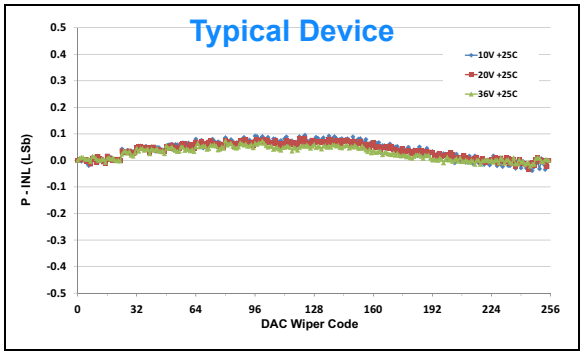


FIGURE 1-145: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

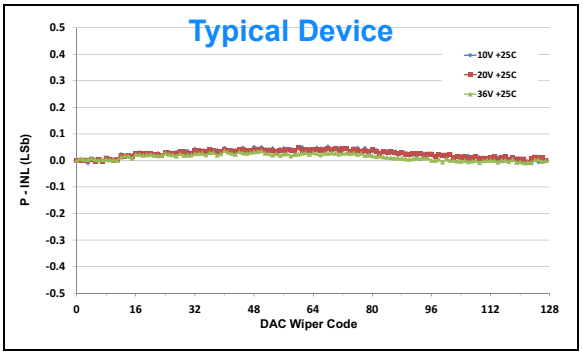


FIGURE 1-146: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

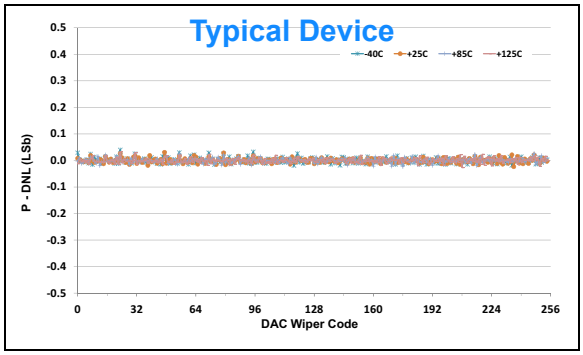


FIGURE 1-147: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

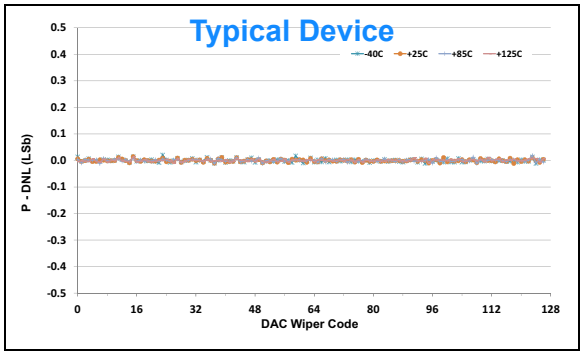


FIGURE 1-150: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

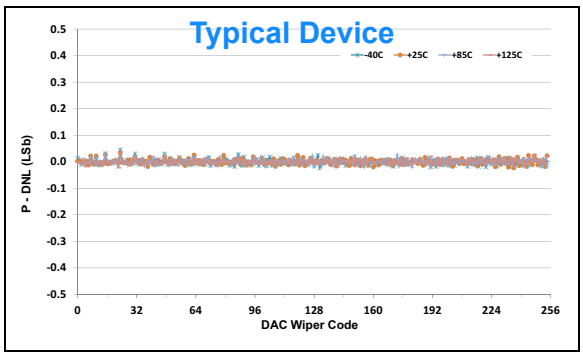


FIGURE 1-148: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

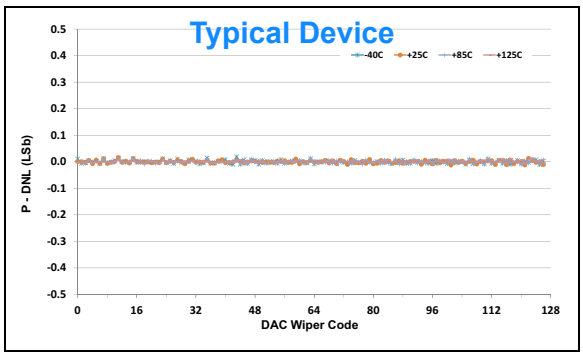


FIGURE 1-151: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

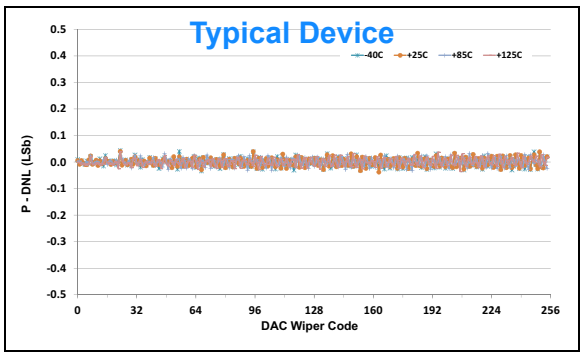


FIGURE 1-149: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

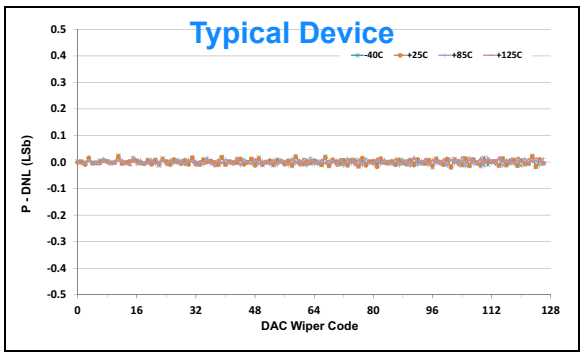


FIGURE 1-152: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

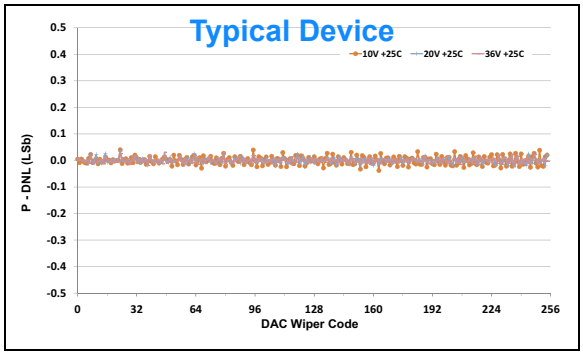


FIGURE 1-153: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

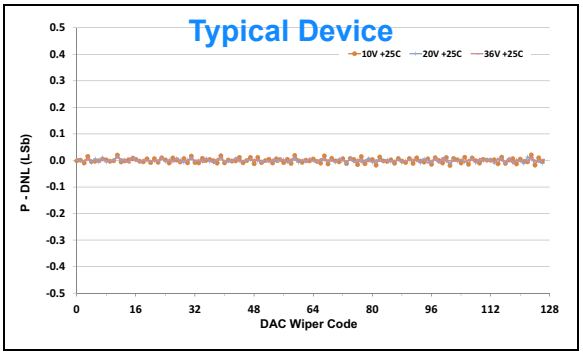
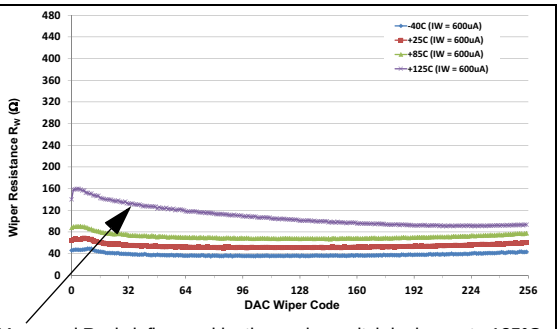


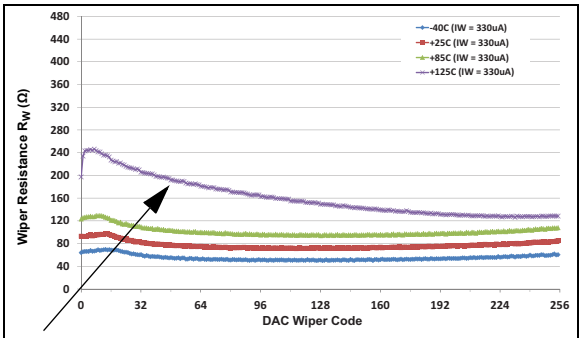
FIGURE 1-154: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.



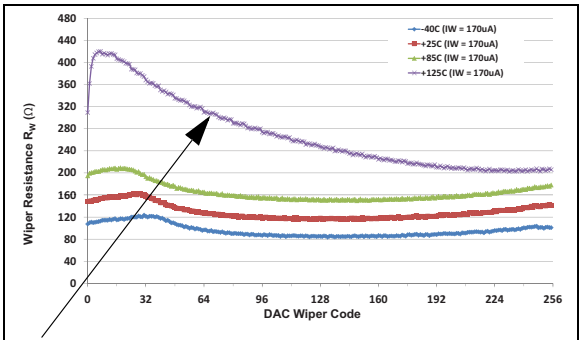
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-155: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, I_W = 600 µA).*



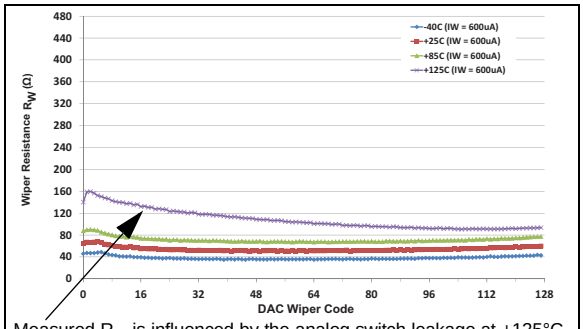
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-156: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V, I_W = 330 µA).*



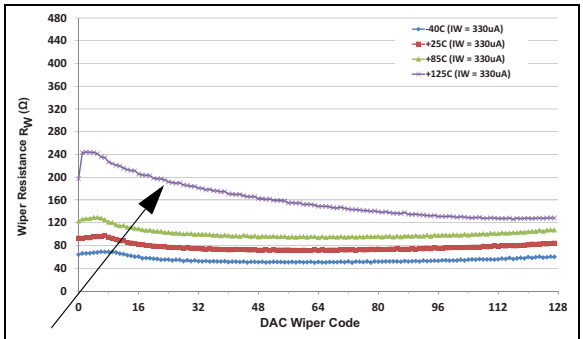
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-157: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V, I_W = 170 µA).*



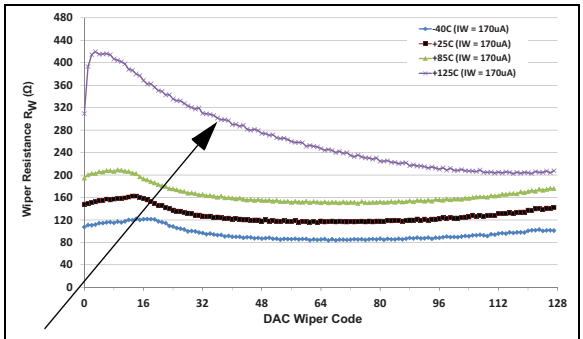
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-158: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, I_W = 600 µA).*



Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-159: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V, I_W = 330 µA).*



Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-160: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V, I_W = 170 µA).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

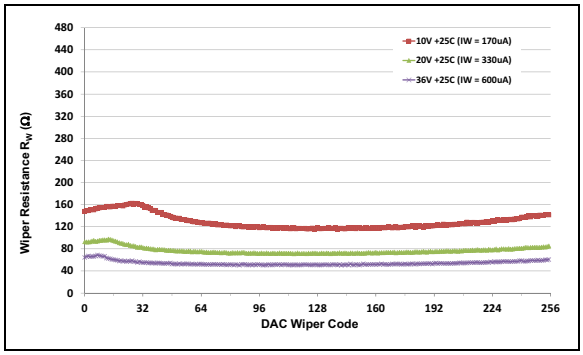


FIGURE 1-161: *Wiper Resistance (R_W) vs. Wiper Setting (@ +29°C) (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 600 µA**, **V+ = 20V and I_W = 330 µA**, **V+ = 10V and I_W = 170 µA**).*

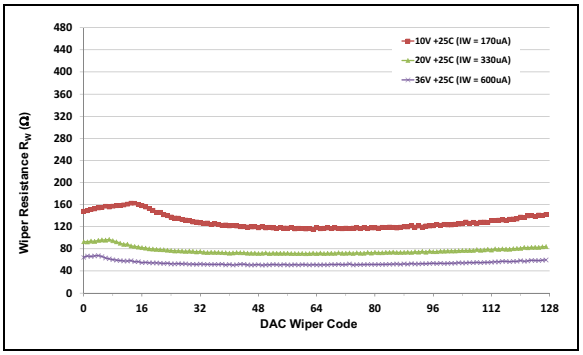


FIGURE 1-162: *Wiper Resistance (R_W) vs. Wiper Setting (@ +29°C) (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 600 µA**, **V+ = 20V and I_W = 330 µA**, **V+ = 10V and I_W = 170 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

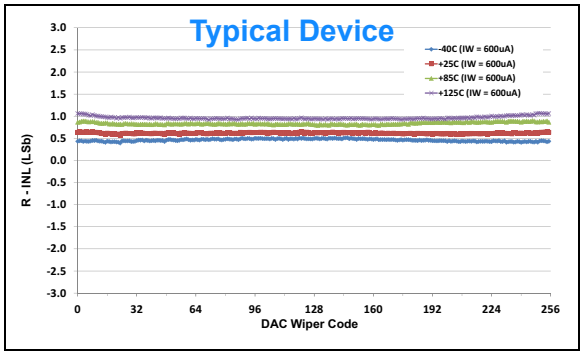


FIGURE 1-163: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 600 µA**).*

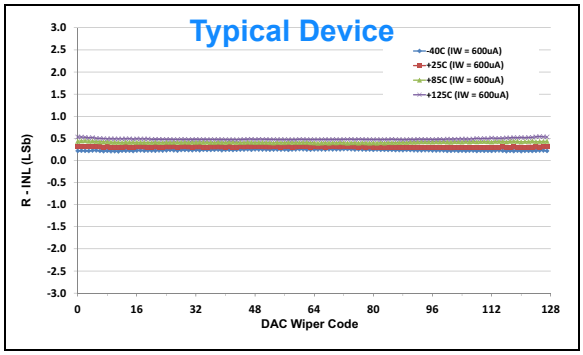


FIGURE 1-166: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 600 µA**).*

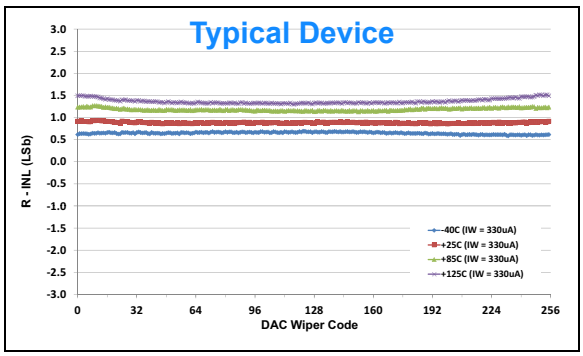


FIGURE 1-164: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 330 µA**).*

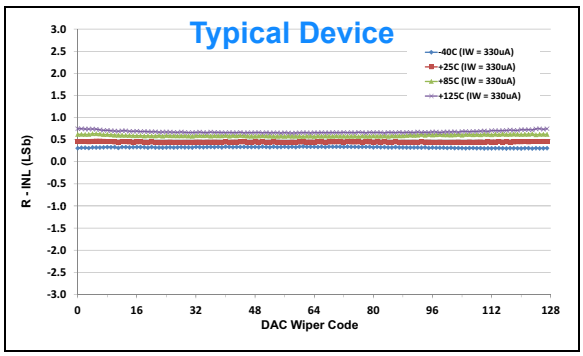


FIGURE 1-167: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 330 µA**).*

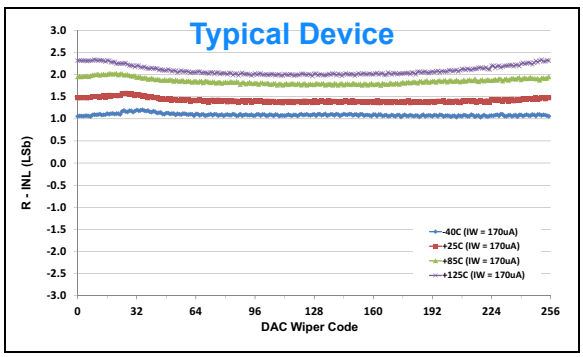


FIGURE 1-165: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**50.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 170 µA**).*

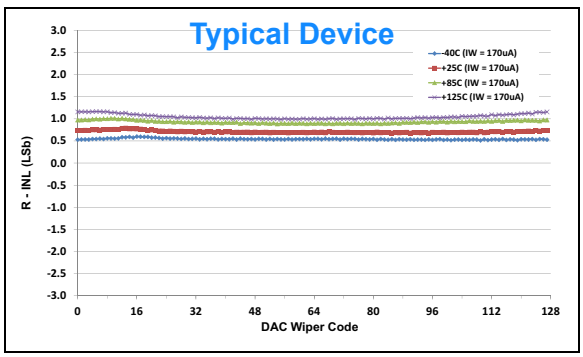


FIGURE 1-168: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**50.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 170 µuA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V

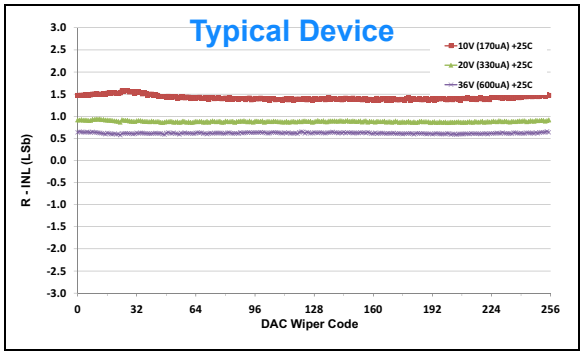


FIGURE 1-169: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V and I_W = 600 µA, V+ = 20V and I_W = 330 µA, V+ = 10V and I_W = 170 µA).*

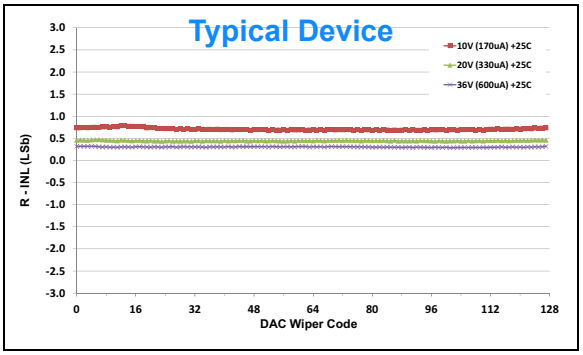


FIGURE 1-170: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V and I_W = 600 µA, V+ = 20V and I_W = 330 µA, V+ = 10V and I_W = 170 µA).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

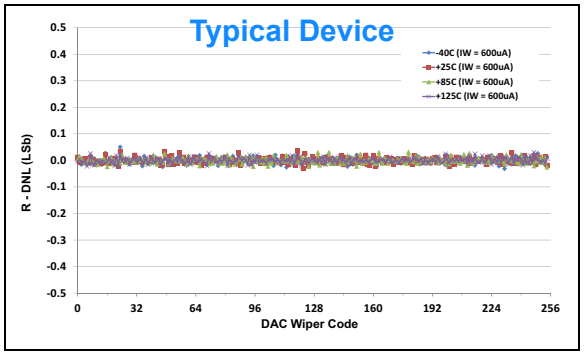


FIGURE 1-171: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, I_W = 600 µA).*

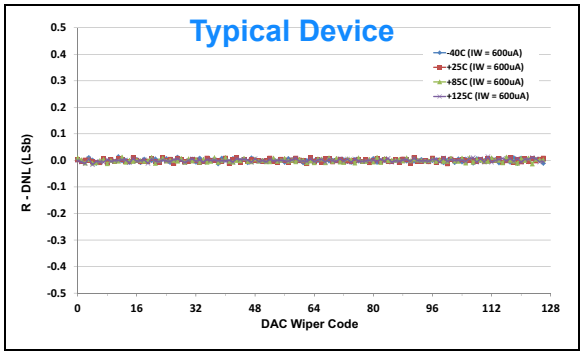


FIGURE 1-174: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, I_W = 600 µA).*

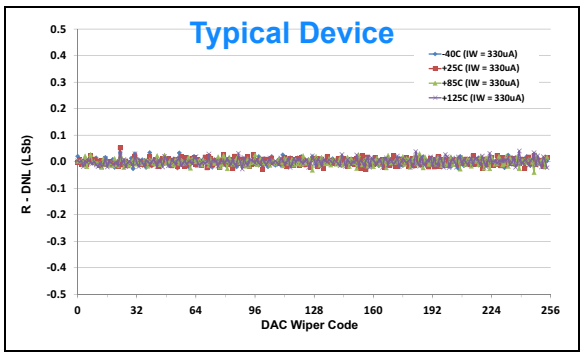


FIGURE 1-172: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V, I_W = 330 µA).*

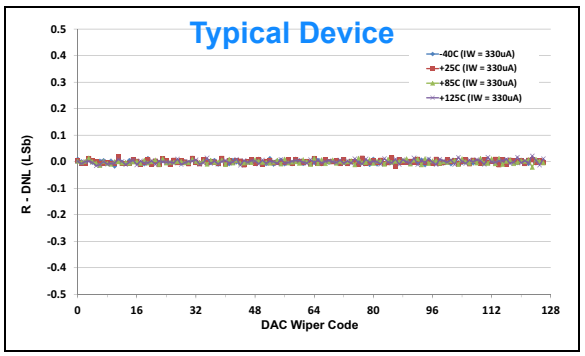


FIGURE 1-175: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V, I_W = 330 µA).*

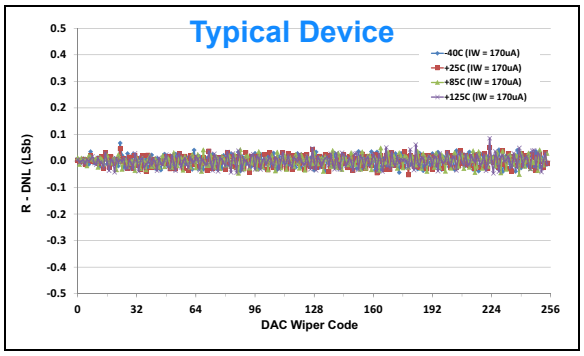


FIGURE 1-173: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V, I_W = 170 µA).*

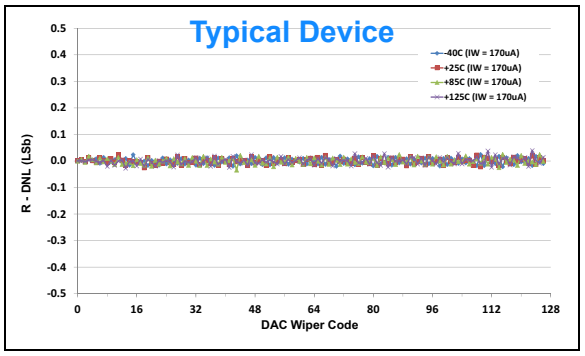


FIGURE 1-176: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V, I_W = 170 µA).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

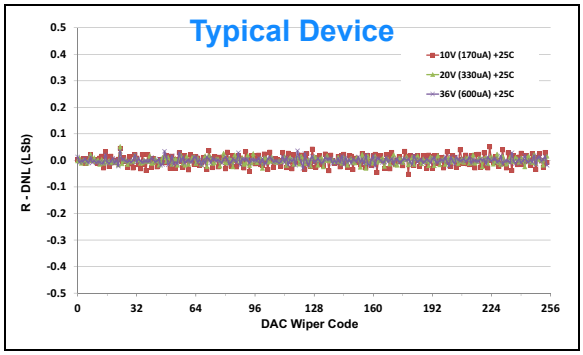


FIGURE 1-177: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (50.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V and I_W = 600 µA, V+ = 20V and I_W = 330 A, V+ = 10V and I_W = 170 µA).*

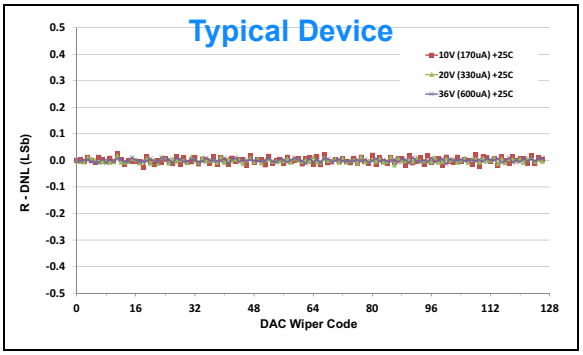


FIGURE 1-178: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (50.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V and I_W = 600 µA, V+ = 20V and I_W = 330 µA, V+ = 10V and I_W = 170 µA).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

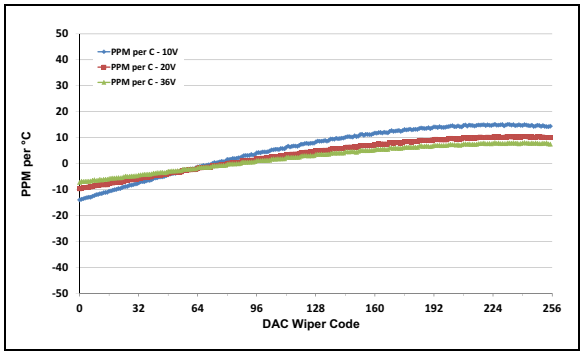


FIGURE 1-179: *V_W PPM/°C (Pot. Mode) vs. Temperature and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 255, +25°C)}$) * 1,000,000/+165°C) (50.0 kΩ, 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

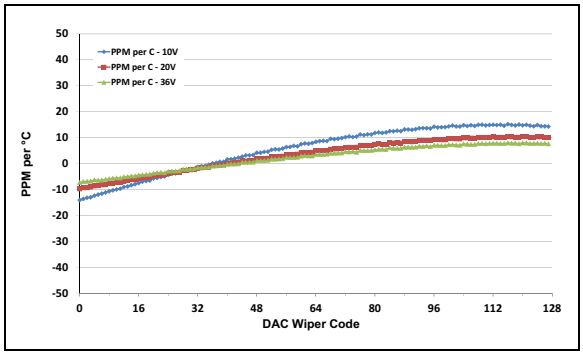


FIGURE 1-180: *V_W PPM/°C (Pot. Mode) vs. Temperature and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 127, +25°C)}$) * 1,000,000/+165°C) (50.0 kΩ, 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

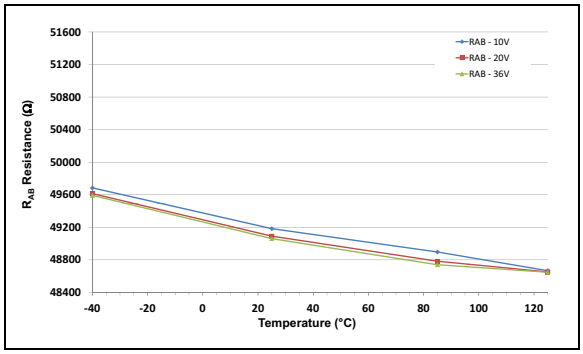


FIGURE 1-181: *R_{AB} Resistance vs. Temperature and V+ Voltage (50.0 kΩ: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

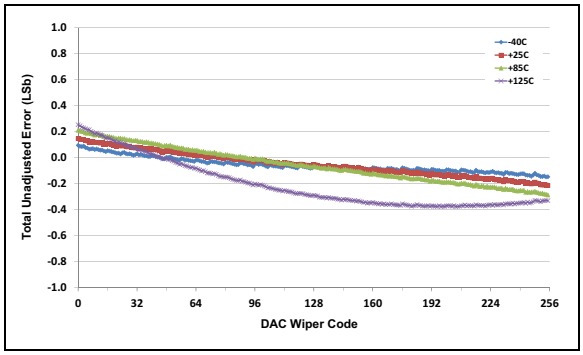


FIGURE 1-182: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

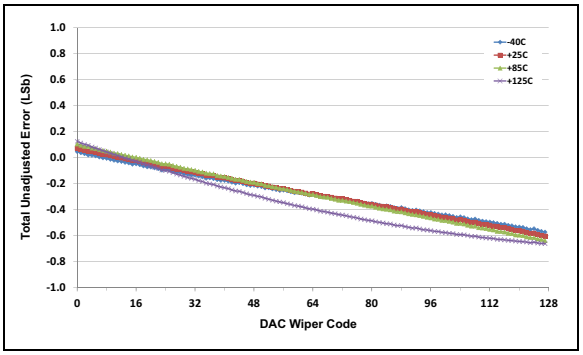


FIGURE 1-185: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

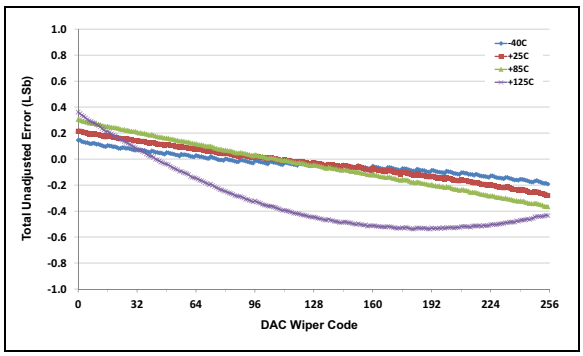


FIGURE 1-183: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

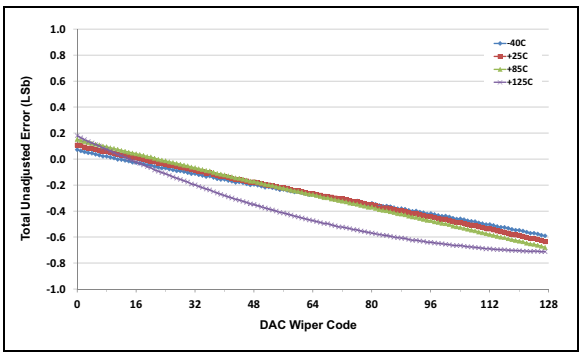


FIGURE 1-186: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

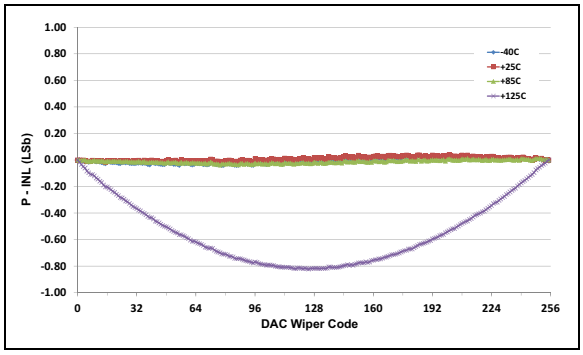


FIGURE 1-184: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

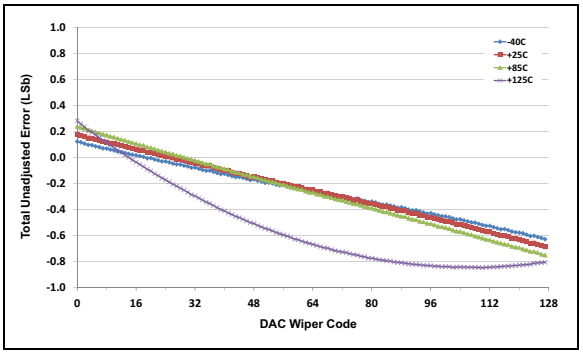


FIGURE 1-187: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

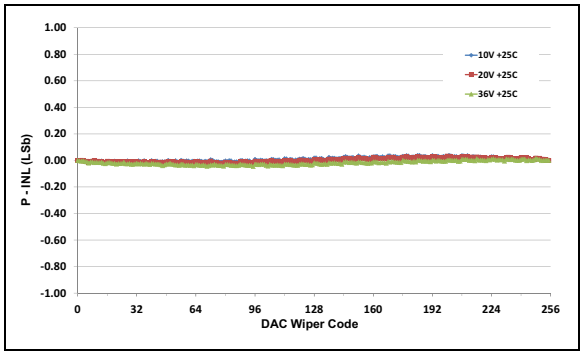


FIGURE 1-188: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

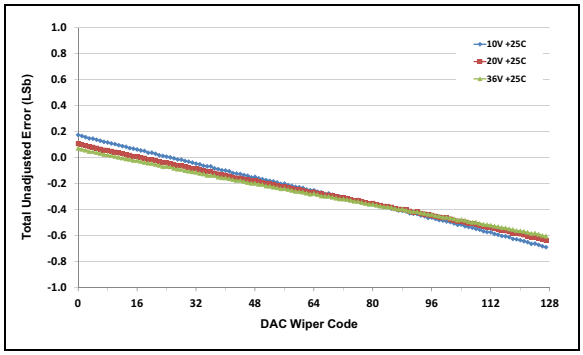


FIGURE 1-191: *Total Unadjusted Error (Pot. Mode) (V_W) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

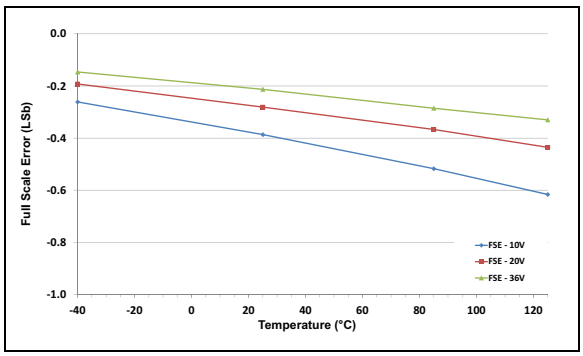


FIGURE 1-189: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

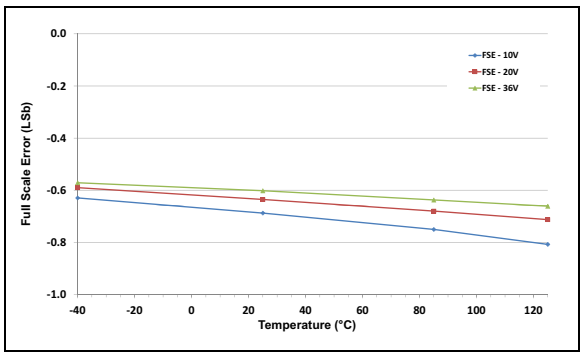


FIGURE 1-192: *Full-Scale Error (Pot. Mode) (FSE) vs. Temperature and V+ Voltage (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

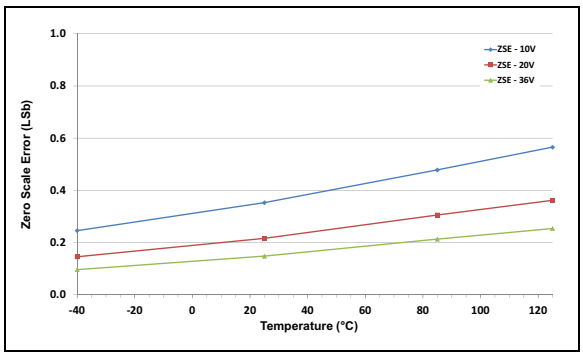


FIGURE 1-190: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

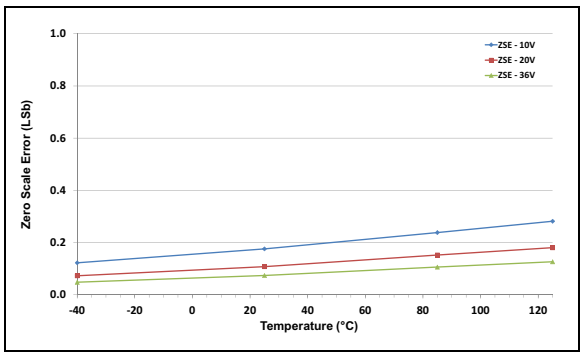


FIGURE 1-193: *Zero Scale Error (Pot. Mode) (ZSE) vs. Temperature and V+ Voltage (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

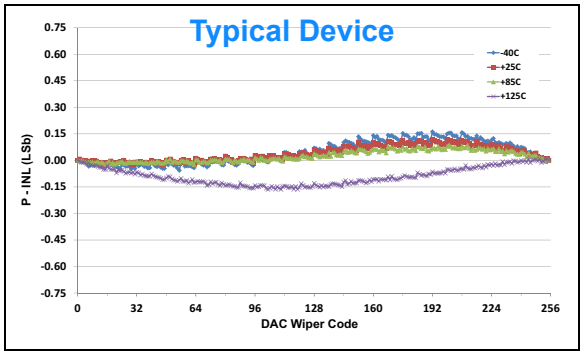


FIGURE 1-194: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

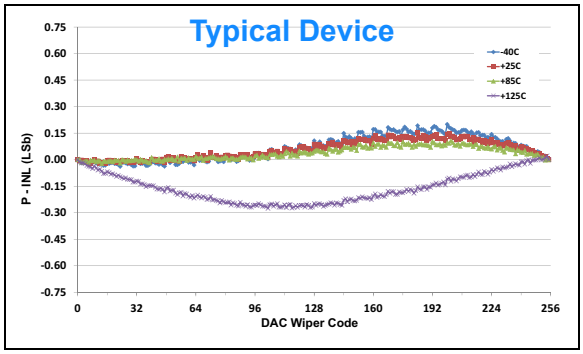


FIGURE 1-195: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

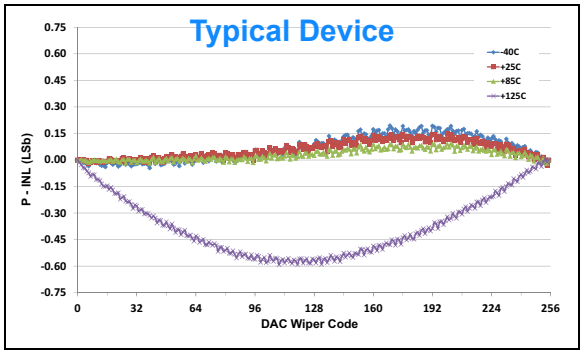


FIGURE 1-196: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

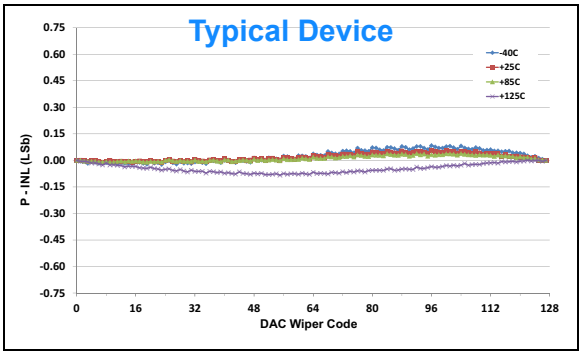


FIGURE 1-197: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

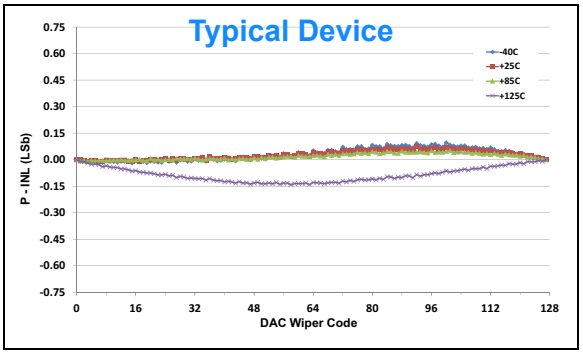


FIGURE 1-198: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

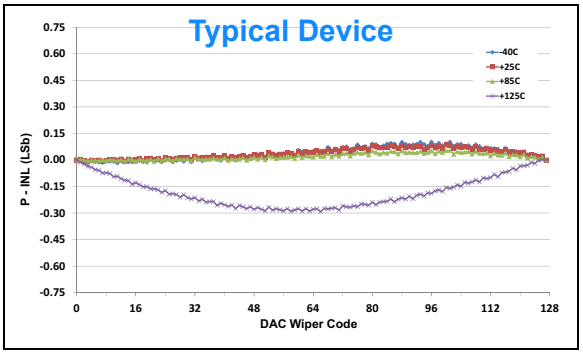


FIGURE 1-199: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

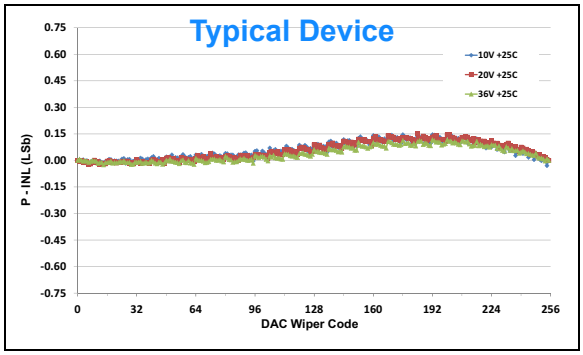


FIGURE 1-200: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

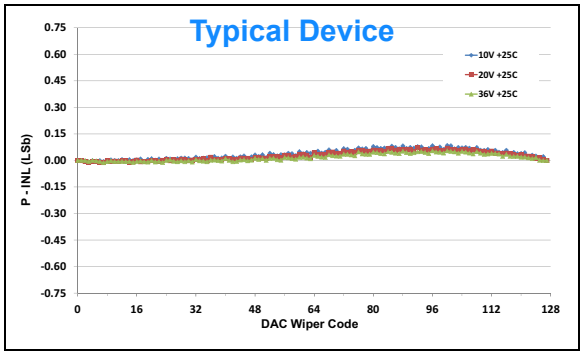


FIGURE 1-201: *INL Error – Pot. Mode (P-INL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

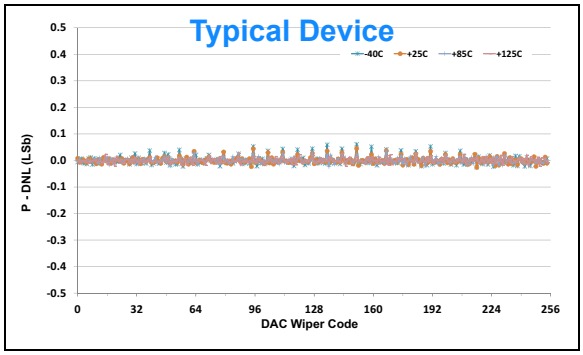


FIGURE 1-202: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

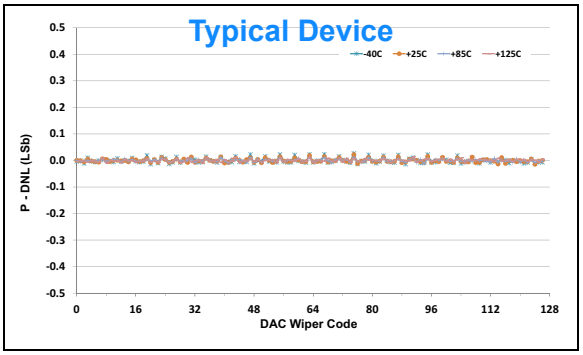


FIGURE 1-205: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**).*

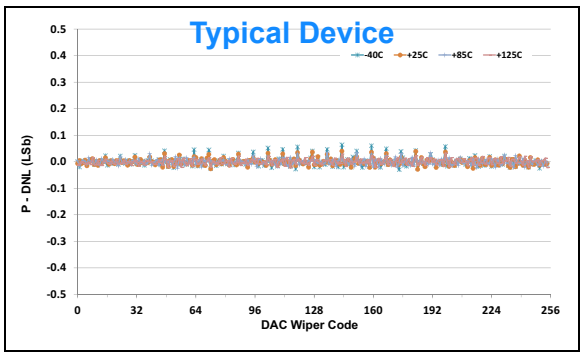


FIGURE 1-203: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

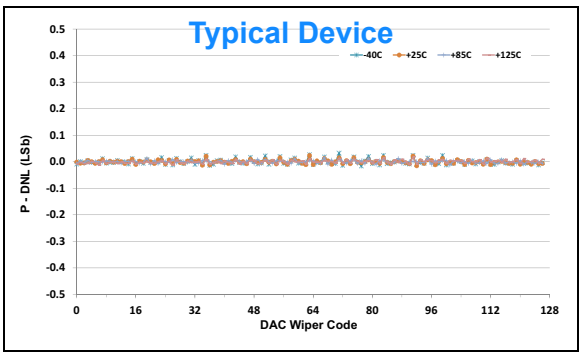


FIGURE 1-206: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**).*

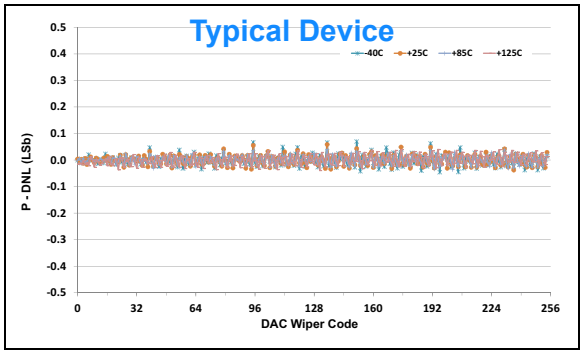


FIGURE 1-204: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

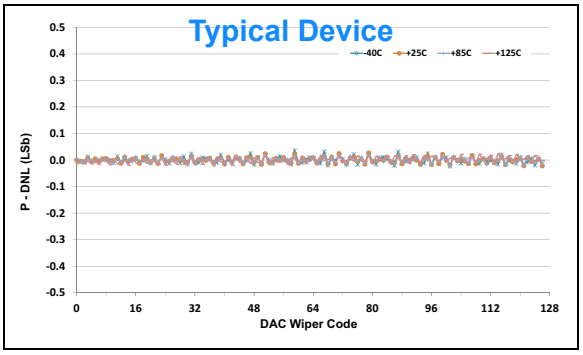


FIGURE 1-207: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

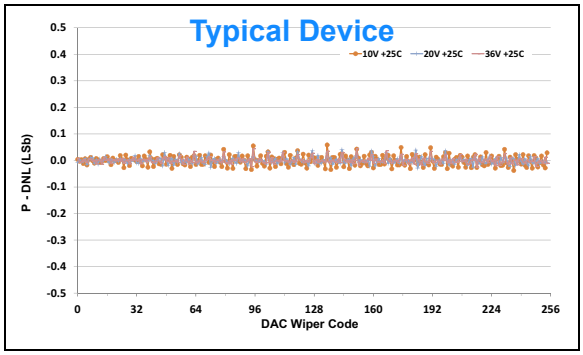


FIGURE 1-208: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

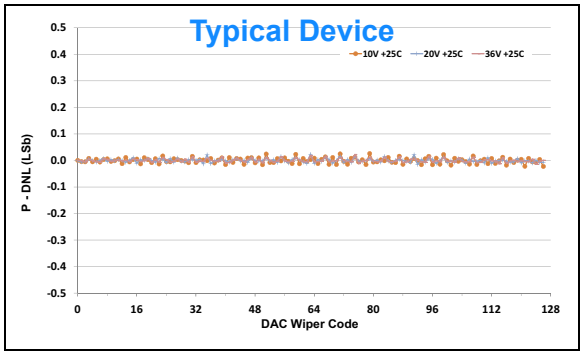
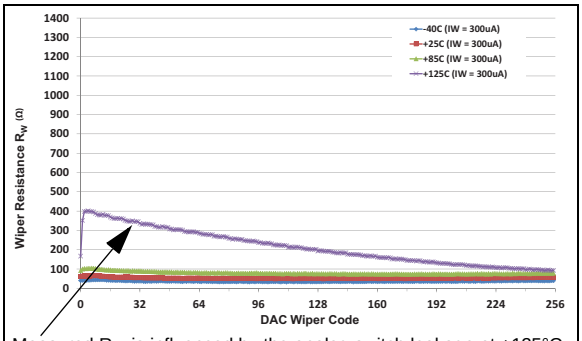


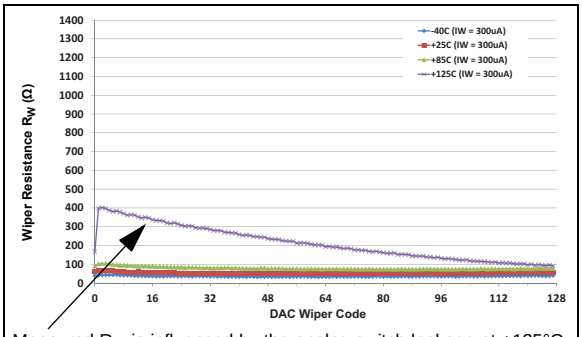
FIGURE 1-209: *DNL Error – Pot. Mode (P-DNL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **20V**, **10V**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.



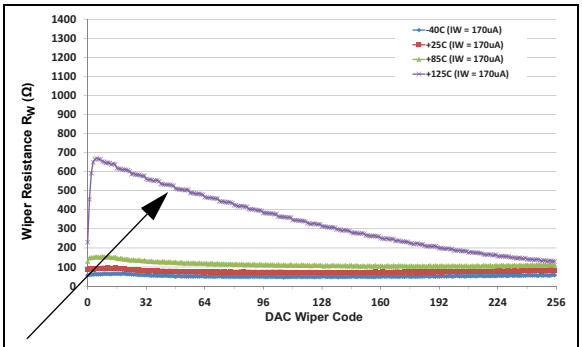
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-210: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (100.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, I_W = 300 µA).*



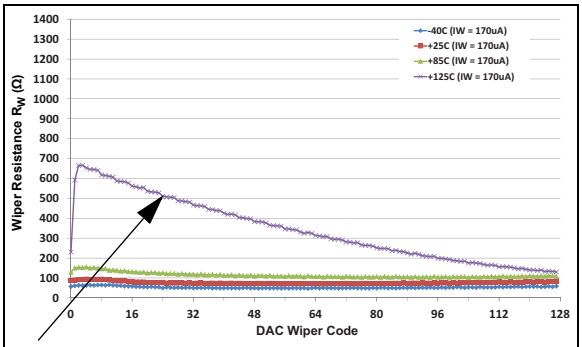
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-213: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (100.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, I_W = 300 µA).*



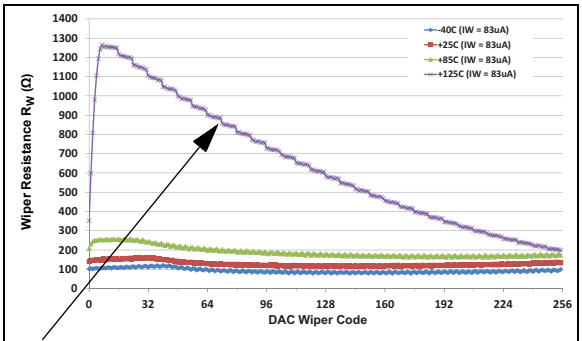
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-211: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (100.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V, I_W = 170 µA).*



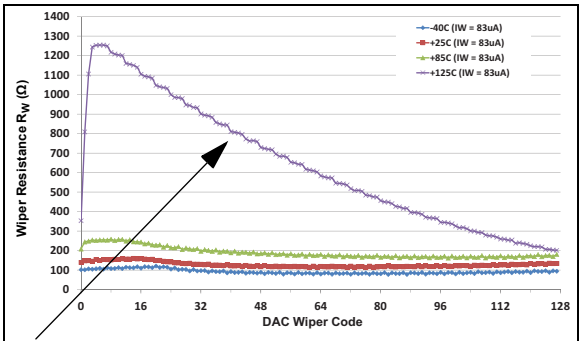
Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-214: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (100.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 20V, I_W = 170 µA).*



Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-212: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (100.0 kΩ 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V, I_W = 83 µA).*



Measured R_W is influenced by the analog switch leakage at +125°C. See **Section 5.2.1** of the *"MCP45HVX1 Data Sheet"* (DS20005304) for additional information.

FIGURE 1-215: *Wiper Resistance (R_W) vs. Wiper Setting and Temperature (100.0 kΩ 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 10V, I_W = 83 µA).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

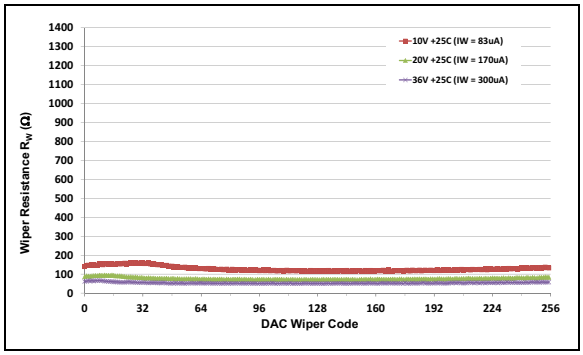


FIGURE 1-216: *Wiper Resistance (R_W) vs. Wiper Setting (@ +29°C) (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 300 µA**, **V+ = 20V and I_W = 170 µA**, **V+ = 10V and I_W = 83 µA**).*

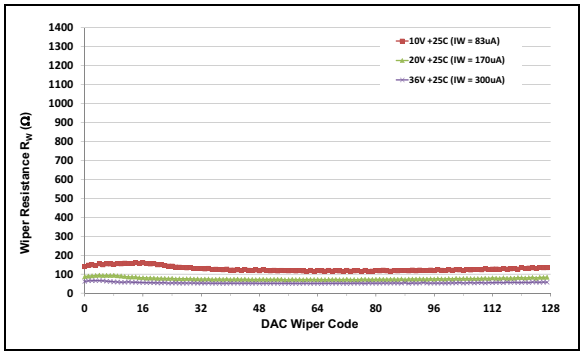


FIGURE 1-217: *Wiper Resistance (R_W) vs. Wiper Setting (@ +29°C) (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 300 µA**, **V+ = 20V and I_W = 170 µA**, **V+ = 10V and I_W = 83 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

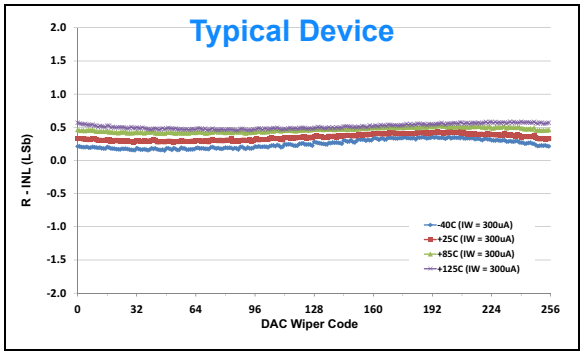


FIGURE 1-218: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 300 µA**).*

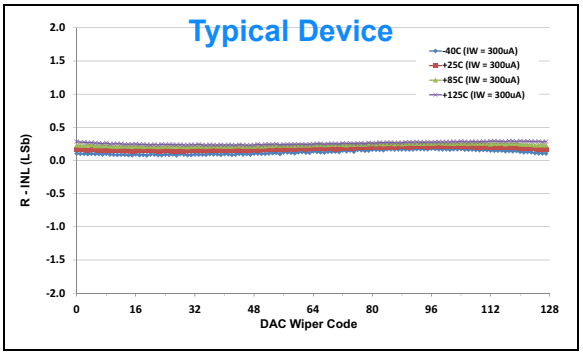


FIGURE 1-221: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 300 µA**).*

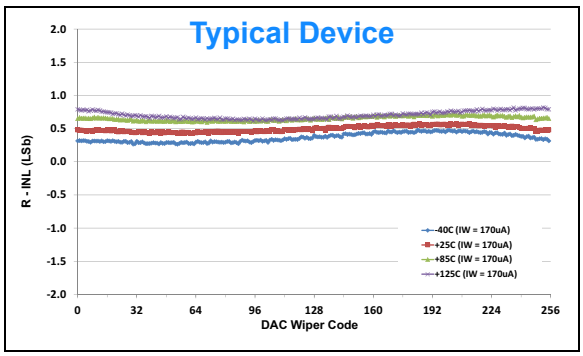


FIGURE 1-219: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 170 µA**).*

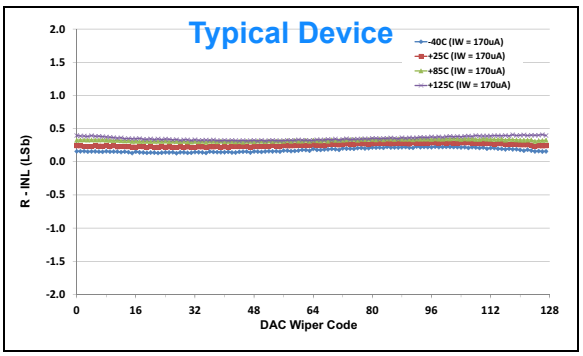


FIGURE 1-222: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 170 µA**).*

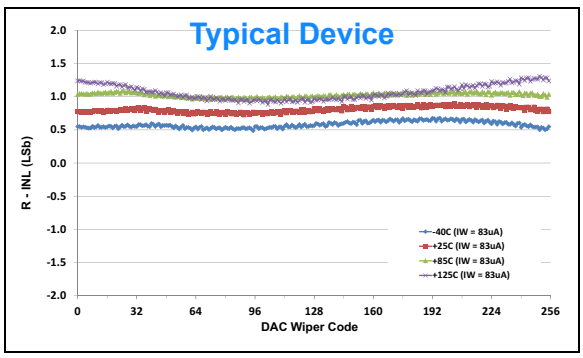


FIGURE 1-220: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 83 µA**).*

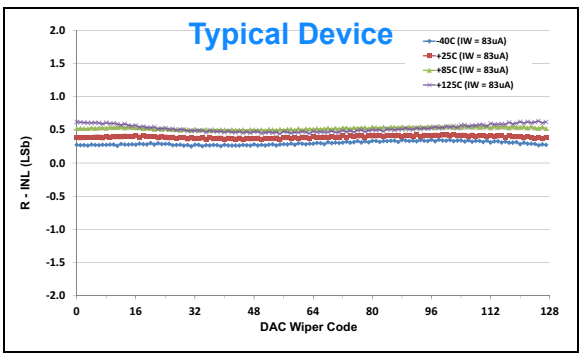


FIGURE 1-223: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 83 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V

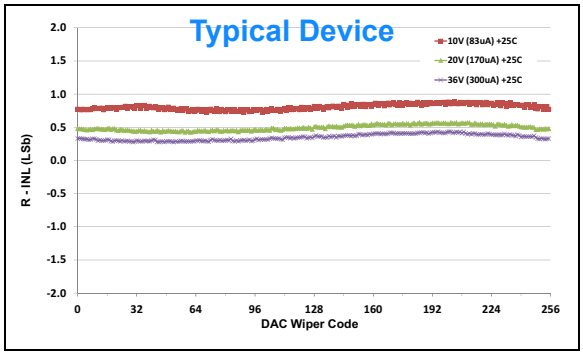


FIGURE 1-224: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 300 µA**, **V+ = 20V and I_W = 170 µA**, **V+ = 10V and I_W = 83 µA**).*

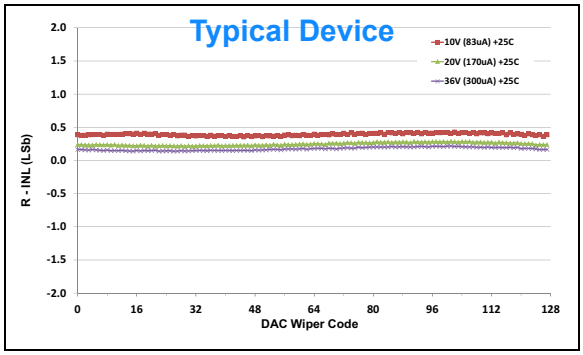


FIGURE 1-225: *INL Error – Rheo. Mode (R-INL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 300 µA**, **V+ = 20V and I_W = 170 µA**, **V+ = 10V and I_W = 83 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

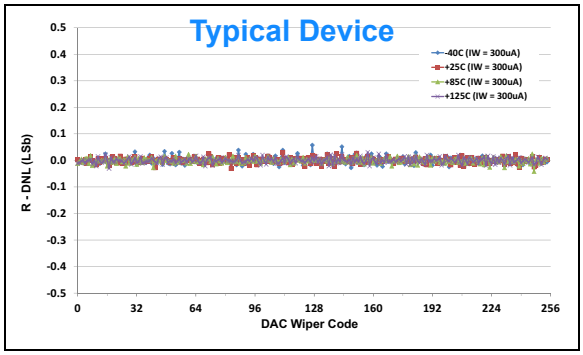


FIGURE 1-226: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 300 µA**).*

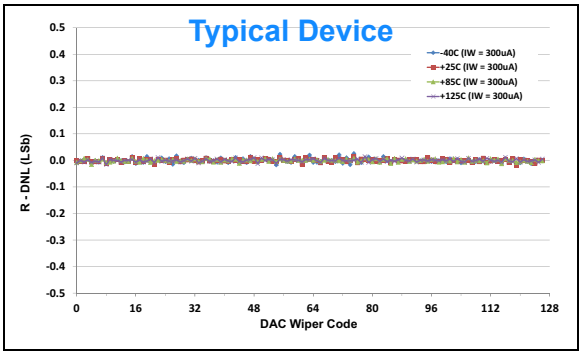


FIGURE 1-229: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V**, **I_W = 300 µA**).*

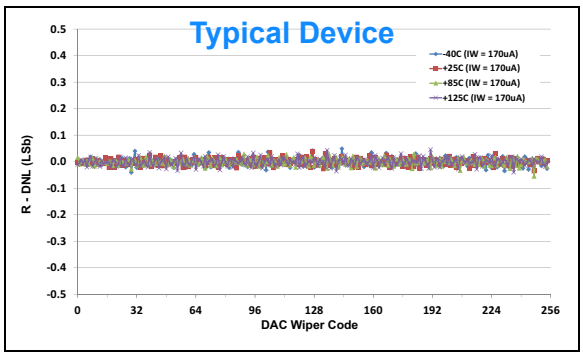


FIGURE 1-227: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 170 µA**).*

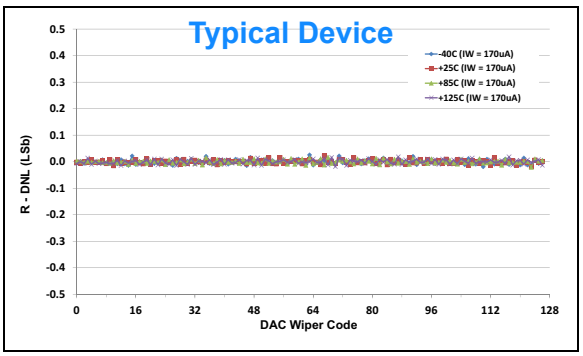


FIGURE 1-230: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 20V**, **I_W = 170 µA**).*

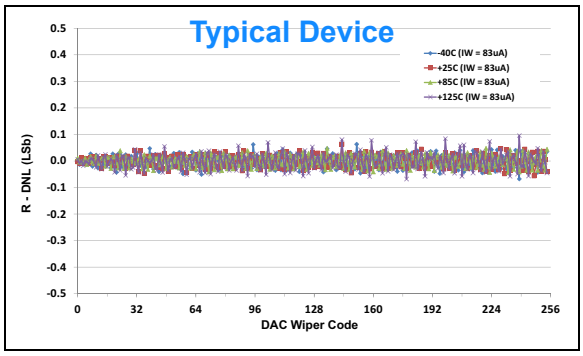


FIGURE 1-228: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 83 µA**).*

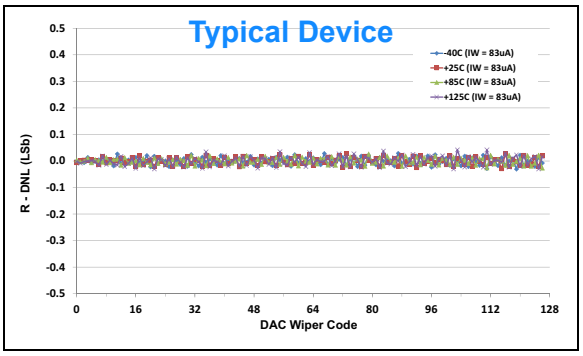


FIGURE 1-231: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting and Temperature (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 10V**, **I_W = 83 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

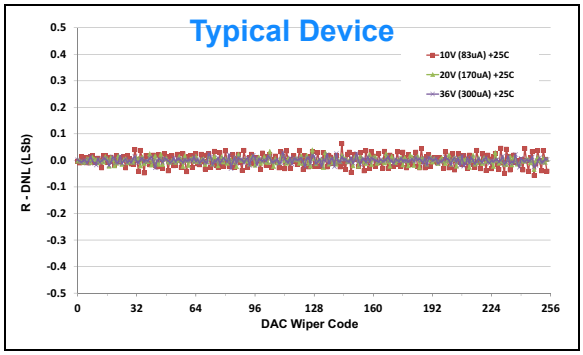


FIGURE 1-232: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 8-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 300 µA**, **V+ = 20V and I_W = 170 µA**, **V+ = 10V and I_W = 83 µA**).*

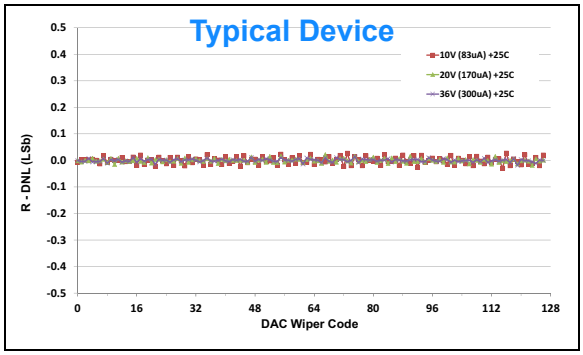


FIGURE 1-233: *DNL Error – Rheo. Mode (R-DNL) vs. Wiper Setting (@ +25°C) (**100.0 kΩ 7-bit**: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, **V+ = 36V and I_W = 300 µA**, **V+ = 20V and I_W = 170 µA**, **V+ = 10V and I_W = 83 µA**).*

Note: Unless otherwise indicated, T_A = +25°C, V_L = 5.0V, DGND = V-, V+ = 36V.

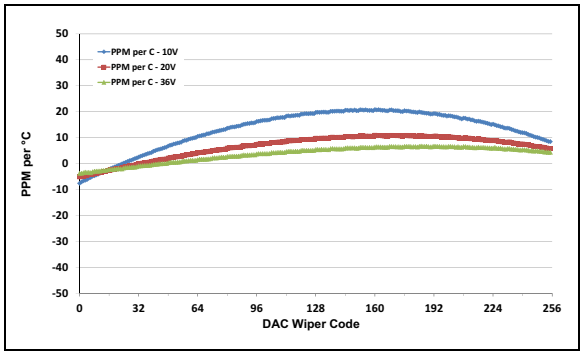


FIGURE 1-234: *V_W PPM/°C (Pot. Mode) vs. Temperature and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 255, +25°C)}$) * 1,000,000/+165°C) (100.0 kΩ, 8-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

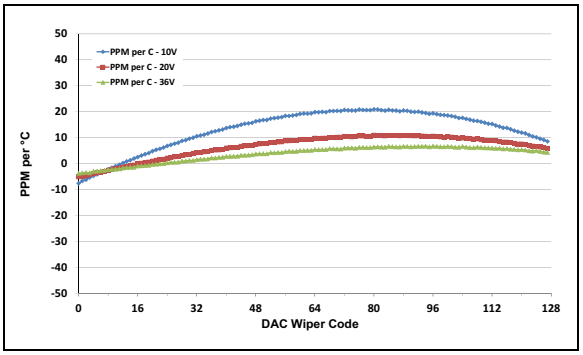


FIGURE 1-235: *V_W PPM/°C (Pot. Mode) vs. Temperature and V+ Voltage ((($V_{W(code = n, +125°C)} - V_{W(code = n, -40°C)}$)/ $V_{W(code = 127, +25°C)}$) * 1,000,000/+165°C) (100.0 kΩ, 7-bit: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

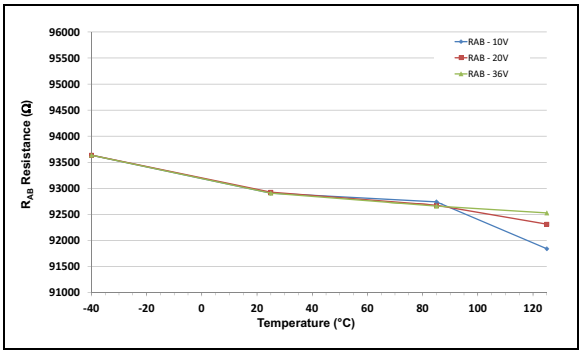


FIGURE 1-236: *R_{AB} Resistance vs. Temperature and V+ Voltage (100.0 kΩ: V_L = 1.8V, 2.7V, 5.5V, A = V+, B = V-, DGND = V-, V+ = 36V, 20V, 10V).*

1.1 Test Circuits

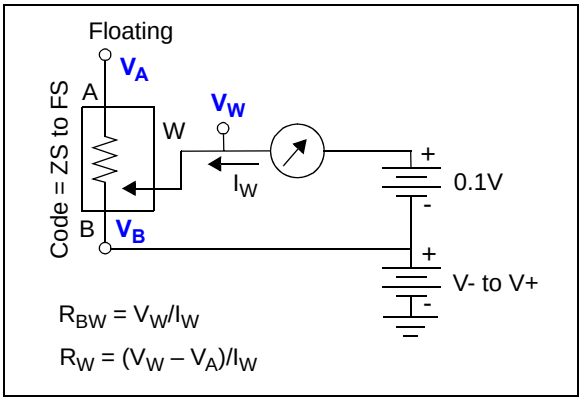


FIGURE 1-237: *R_W and R_{BW} Measurement.*

APPENDIX A: REVISION HISTORY

Revision A (June 2014)

- Original Release of this Document.

NOTES:

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