

2.3 Inch 8x8 Dot-Matrix Display

Digital Circuit Lab

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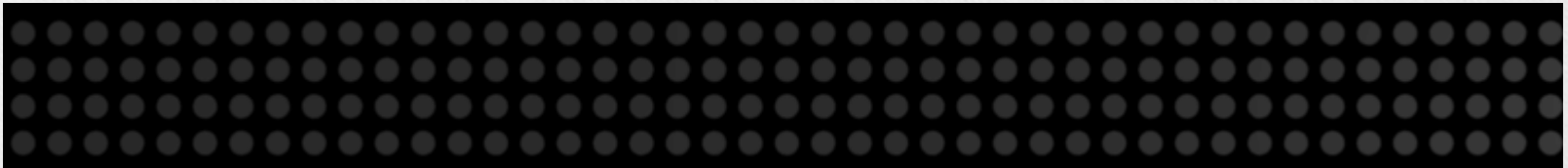
Outline

- Introduction to Dot-Matrix Display
- Product Specification
- Circuit Connection Results

Introduction to Dot-Matrix Display

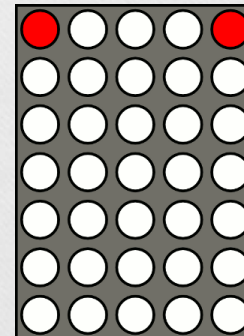
Introduction to Dot-Matrix Display

- A dot-matrix display is a **display device** used to display information on machines, clocks and many other devices requiring a simple display device of limited resolution.



LED Matrix

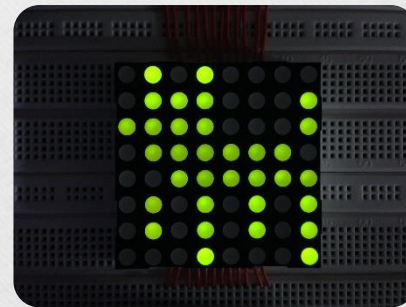
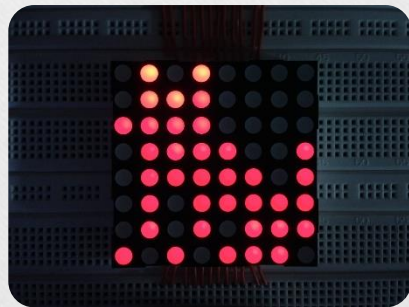
- It consists of a **2-D diode matrix** with their **cathodes joined in columns** and their **anodes joined in rows** (or vice versa).
- By controlling the flow of electricity through each row and column pair it is possible to control each LED individually.



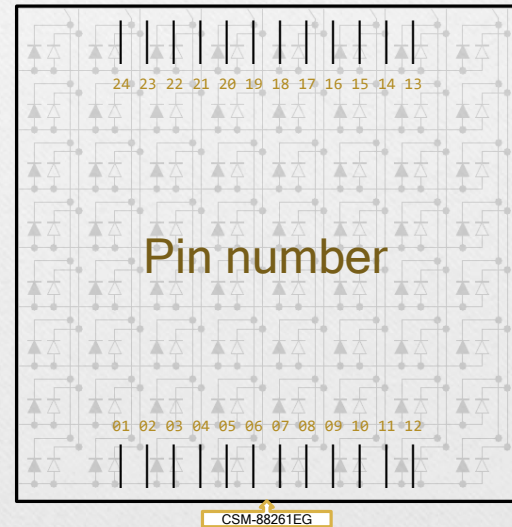
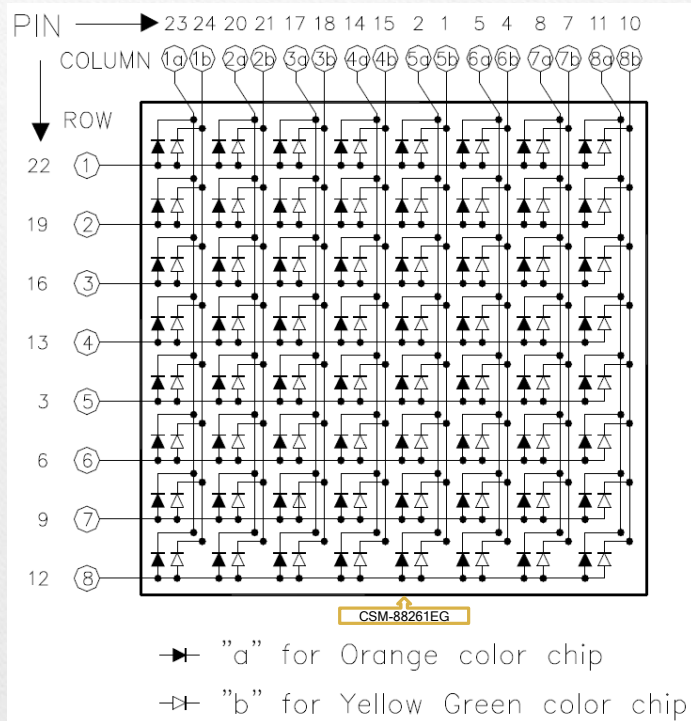
Product Specification

Model No: CSM-88261EG

- Descriptions:
 - 2.3Inch 8X8 Dot-Matrix Display
 - Dot Pitch 7.62mm
 - CSM-88261: Column Cathode, Row Anode
 - Emitting Color: **Orange** & **Yellow Green**



Internal Circuit Diagrams



Absolute Maximum Rating (1/2)

- Orange ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	P_{AD}	70	mW
Continuous Forward Current Per Dice	I_{AF}	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Reverse Voltage Per Dice	V_R	5	V

Absolute Maximum Rating (2/2)

- Yellow Green ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	P_{AD}	70	mW
Continuous Forward Current Per Dice	I_{AF}	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Reverse Voltage Per Dice	V_R	5	V

Electro-optical Characteristics

- Orange ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Dot	V_F		2.0	2.8	V	$I_F = 20\text{mA}$

- Yellow Green ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Dot	V_F		2.1	2.8	V	$I_F = 20\text{mA}$

- HSMC (standard 2.5 V)
- GPIO (standard 3.3V)

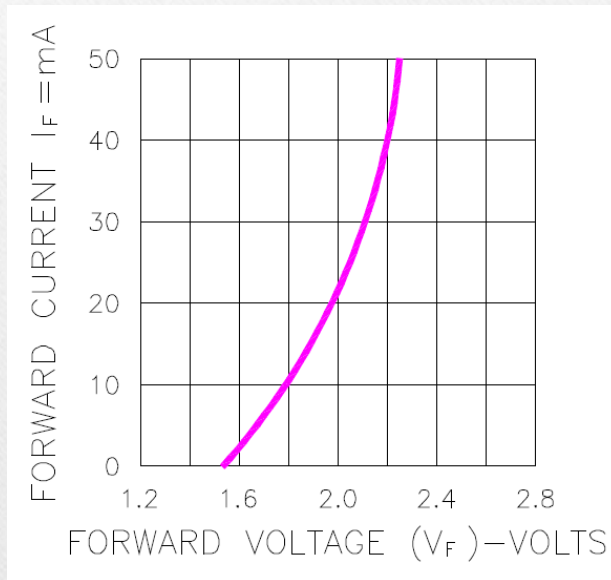
GPIO



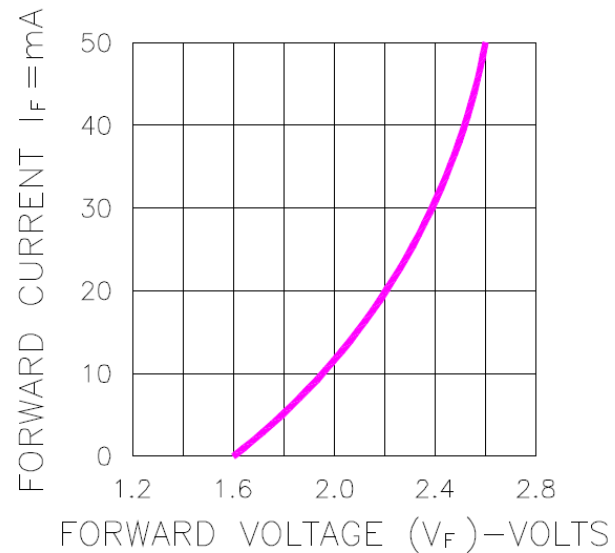
HSMC

Typical Electrical / Optical Characteristics Curves

- Orange

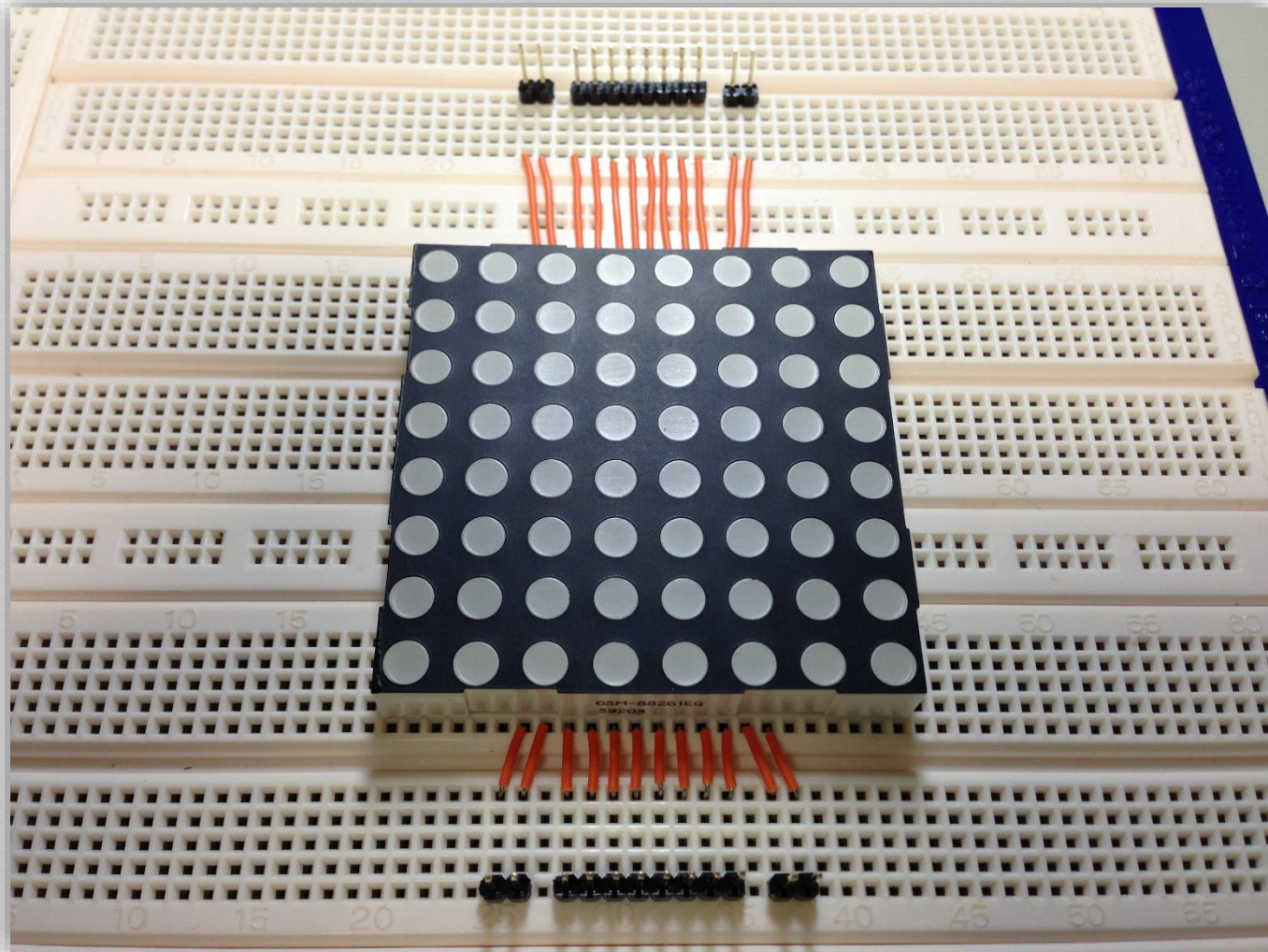


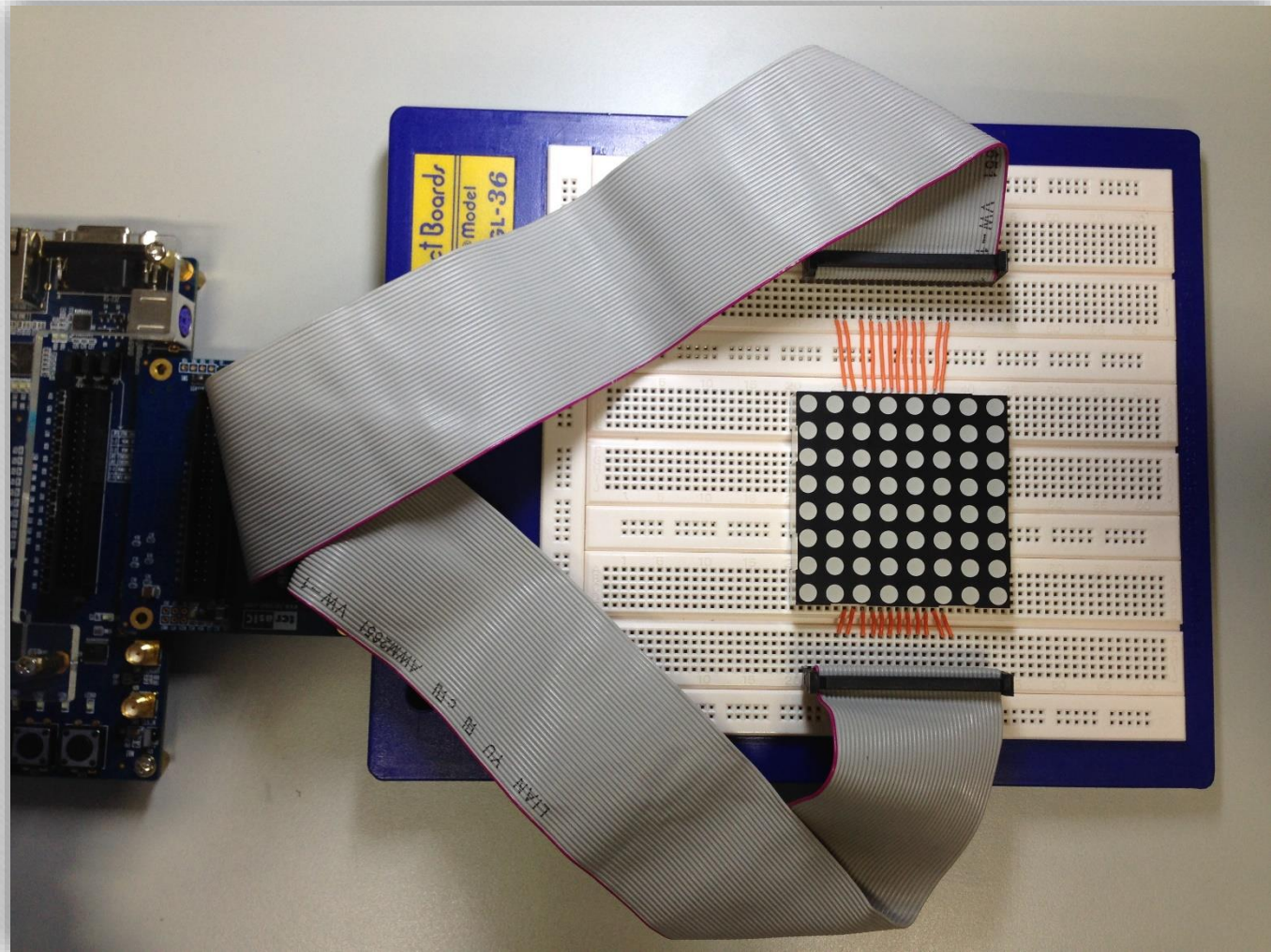
- Yellow Green



($T_a=25^\circ\text{C}$)

Circuit Connection Results





Demo Video



The End.

Any question?

Reference

1. http://en.wikipedia.org/wiki/Dot_matrix
2. http://en.wikipedia.org/wiki/Dot-matrix_display
3. "Product Specification, Model No: CSM-88261EG" by China Semiconductor Corporation, <http://www.csctw.com.tw>