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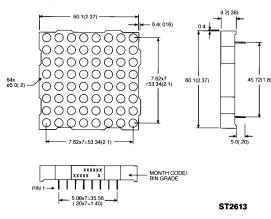


# 2.3" 8×8 **DOT MATRIX DISPLAYS**

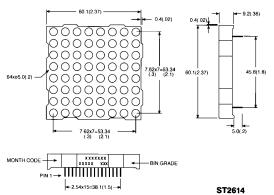
YELLOW **GMA 2888C GMC 2888C** HER GMA 2988C GMC 2988C GREEN **GMA 2488C GMC 2488C** BICOLOR RED/GREEN GMC 2688C

## **PACKAGE DIMENSIONS**

#### A. GMX2X88C



### B. GMC2688C



#### NOTES:

- NOTES:

  1. ALL PINS ARE 80.5 (.02).

  2. DIMENSIONS IN MILLIMETERS (INCH),
  TOLERANCE IS ±0.25 (.01) UNLESS OTHERWISE NOTED.

## DESCRIPTION

These are 8×8 dot matrix displays with large emitting area (0.2" diameter) LED sources. The GMX2X88C series are single color displays with the exception of GMC2688C, a bicolor of red/green displays.

All displays have gray face and white dot color. Other face or dot colors are available with minimum

The X in GMX denotes row anode or row cathode.

## **FEATURES**

- 2.3" (58.4mm) character height
- Low power requirement
- High contrast & brightness
- Wide viewing angle 130°
- 8×8 array with X-Y select
- Compatible with USASCII and EBCDIC codes
- X-Y stackable
- Choice of two matrix orientation anode or cathode column
- Easy mounting on PCB
- Categorized for luminous intensity
- Single color displays have the choice of 3 bright color - yellow/orange/green
- Multicolor color displays are applicable to 3 bright color-greens, orange (HER) and yellow (green and HER mixed)



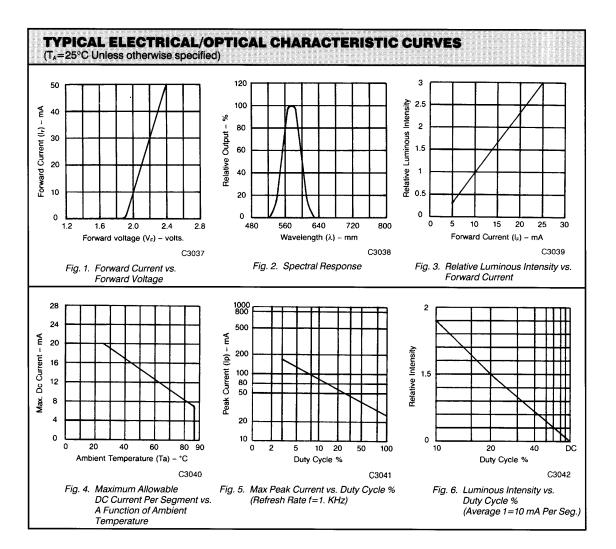
# 2.3" 8×8 DOT MATRIX DISPLAYS

	YELLOW	HER	GREEN	UNITS
Power dissipation per dot/color	60	70	75	mW
Peak forward current per dot/color				
(duty cycle 1/10, 10KHz)	80	100	100	mA
Continuous I <sub>F</sub> per dot/color	20	25	25	mA
Reverse voltage V <sub>R</sub> per dot/color	5	5	5	V

MODEL	DEL NUMBERS					
YELLOW	PAR' HER	T NO. GREEN	MULTI- COLOR	DESCRIPTION	PACKAGE DIMENSION	INTERNAL CIRCUIT DIAGRAM
GMC2888C GMA2888C	GMC2988C GMA2988C	GMC2488C GMA2488C		Anode column, cathode row Cathode column, anode row	A	A B
GINIA20000	GIVIA23000	CIVIAZ400C	GMC2688C	Anode column, cathode row	B	C

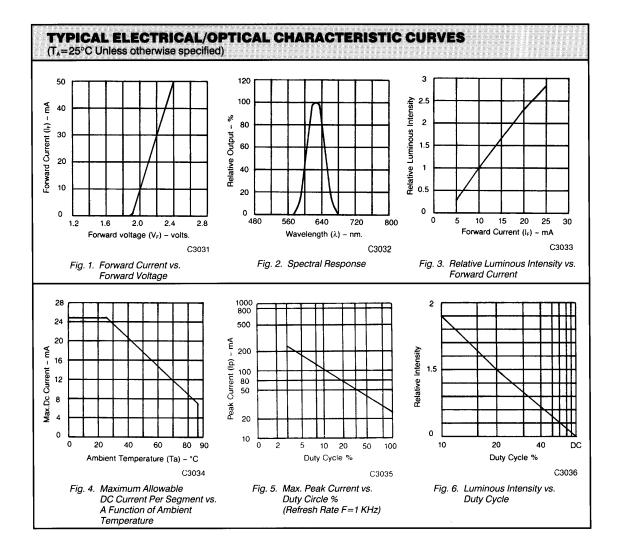


ELECTRICAL/OPTICAL CH GMX 2888C	TICAL CHARACTERISTICS (T <sub>A</sub> =25°C Unless otherwise specified)				
PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Average luminous intensity	***	3000		μcd	I <sub>F</sub> =20 mA
Peak emission wavelength		585		nm	I <sub>F</sub> =20 mA
Spectral line half-width		35		nm	I <sub>=</sub> =20 mA
Forward voltage, any dot		2.1	2.8	٧	I <sub>F</sub> =20 mA
Reverse voltage, any dot			100	μΑ	V <sub>R</sub> =5V



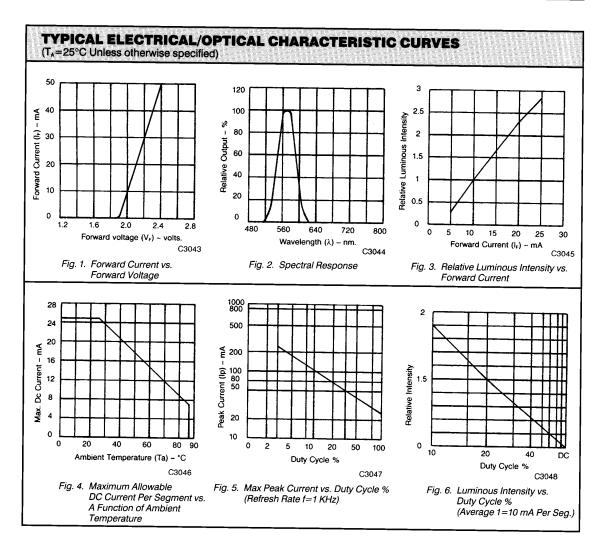


ELECTRICAL/OPTICAL CH	IARACTERISTIC	<b>\$</b> (T <sub>A</sub> =25°(	C Unless o	therwise sp	rwise specified)	
PARAMETER	MIN	ТҮР	MAX	UNITS	TEST CONDITIONS	
Average luminous intensity		3000		$\mu$ cd	l <sub>F</sub> =20 mA	
Peak emission wavelength		635		nm	I <sub>F</sub> =20 mA	
Spectral line half-width		40		nm	I <sub>F</sub> =20 mA	
Forward voltage, any dot		2.1	2.8	٧	I <sub>F</sub> =20 mA	
Reverse voltage, any dot			100	μΑ	V <sub>R</sub> =5V	





ELECTRICAL/OPTICAL CH GMX 2488C	CAL CHARACTERISTICS (T <sub>A</sub> =25°C Unless otherwise specified)				
PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Average luminous intensity		3000		μcd	I <sub>E</sub> =20 mA
Peak emission wavelength		565		nm	I <sub>F</sub> =20 mA
Spectral line half-width		30		nm	I <sub>E</sub> =20 mA
Forward voltage, any dot		2.1	2.8		I <sub>E</sub> =20 mA
Reverse voltage, any dot			100	μΑ	V <sub>R</sub> =5V





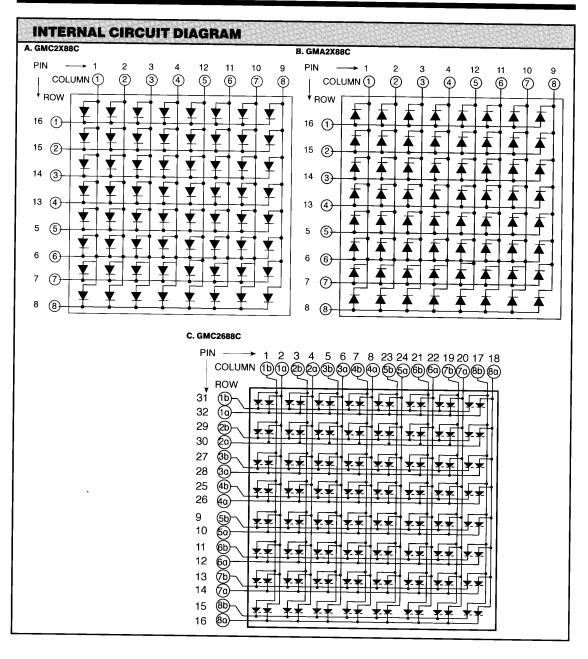
# 2.3" 8×8 DOT MATRIX DISPLAYS

PIN CONNECTION					
PIN NO.	GMC2X88C	GMA2X88C	GMC2688C		
1	Anode column 1	Cathode column 1	Anode Column 1b		
2	Anode column 2	Cathode column 2	Anode column 1a		
3	Anode column 3	Cathode column 3	Anode column 2b		
4	Anode column 4	Cathode column 4	Anode column 2a		
5	Cathode row 5	Anode row 5	Anode column 3b		
6	Cathode row 6	Anode row 6	Anode column 3a		
7	Cathode row 7	Anode row 7	Anode column 4b		
8	Cathode row 8	Anode row 8	Anode column 4a		
9	Anode column 8	Cathode column 8	Cathode row 5b		
10	Anode column 7	Cathode column 7	Cathode row 5a		
11	Anode column 6	Cathode column 6	Cathode row 6b		
12	Anode column 5	Cathode column 5	Cathode row 6a		
13	Cathode row 4	Anode row 4	Cathode row 7b		
14	Cathode row 3	Anode row 3	Cathode row 7a		
15	Cathode row 2	Anode row 2	Cathode row 8b		
16	Cathode row 1	Anode row 1	Cathode row 8a		
17			Anode column 8b		
18			Anode column 8a		
19			Anode column 7b		
20			Anode column 7a		
21			Anode column 6b		
22			Anode column 6a		
23			Anode column 5b		
24			Anode column 5a		
25			Cathode row 4b		
26			Cathode row 4a		
27			Cathode row 3b		
28			Cathode row 3a		
29			Cathode row 2b		
30			Cathode row 2a		
31			Cathode row 1b		
32			Cathode row 1a		

"a" for HER chin "h" for green chin .









# 2.3" 8 X 8 DOT MATRIX DISPLAYS

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