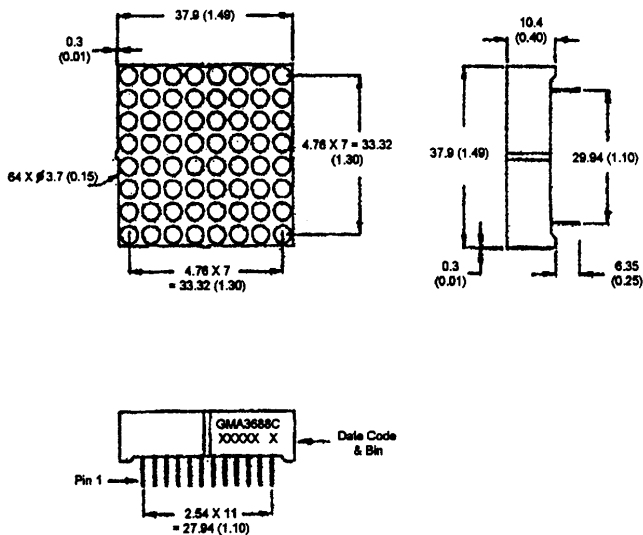


FAIRCHILD
SEMICONDUCTOR™

**1.5 INCH (37.9mm) 8 X 8
DOT MATRIX STICK DISPLAY**

**HER Red / Green GMA3688C
(BI-COLOR)**

PACKAGE DIMENSIONS



DESCRIPTION

The GMA3688C a common cathode column 8 X 8, bicolor High Efficiency Red / green dotmatrix display. It has a grey face with neutral segment color.

FEATURES

- 1.5" (37.9mm) character height.
- Low power requirement.
- Wide 130° viewing angle.
- High brightness and contrast
- 8 X 8 array with X-Y select.
- X-Y stackable.
- Easy mounting on P.C. board.

NOTE: Dimensions are in mm (inch).
Tolerances are ± 0.25 (0.1) unless otherwise noted.
All pins are 0.5 (.02).

MODEL NUMBER

<u>Part Number</u>	<u>Colour</u>	<u>Description</u>
GMA3688C	HER Red/Green	Common anode row.
(For other color options, contact your local area Sales Office)		



**1.5 INCH (37.9mm) 8 X 8
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ABSOLUTE MAXIMUM RATING ($T_A = 25^\circ\text{C}$ unless otherwise specified)

	HER	Green	Units
Peak forward current per segment (Duty cycle 1/10, 10KHz)	90	90	mA
Continuous IF per segment	25	25	mA
Power dissipation per segment	70*	70*	mW
*Derate linearly from 25°C	0.33	0.33	mW/°C
Reverse voltage VR per segment	5	5	Volts
Operating and storage temperature range.....	-25°C to +85°C		
Soldering time at 260°C..... (1/16" below seating plane)	3 sec		

ELECTRO - OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

	HER	Green	Test Condition
Luminous Intensity/Dot Digit average (Typical)	2200ucd	1600ucd	$I_F = 20\text{mA}$
Forward voltage (V_F) typical	2.0V	2.1V	$I_F = 20\text{mA}$
maximum	2.8V	2.8V	$I_F = 20\text{mA}$
Peak wavelength (nm)	635nm	570nm	$I_F = 20\text{mA}$
Spectral line half width (nm)	45nm	30nm	$I_F = 20\text{mA}$
Reverse breakdown voltage V_R	5V	5V	$I_R = 100\mu\text{A}$

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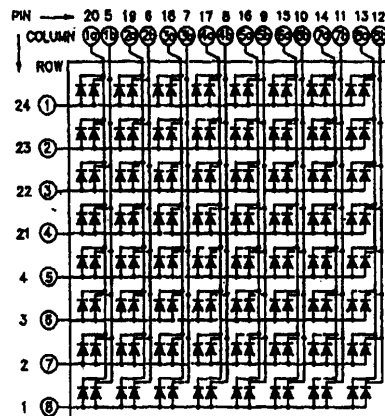
PIN CONNECTION:

GMA3688C

Pin Number	Function	Pin Number	Function
1	Anode Row 8	13	Cathode Column 8a
2	Anode Row 7	14	Cathode Column 7a
3	Anode Row 6	15	Cathode Column 6a
4	Anode Row 5	16	Cathode Column 5a
5	Cathode Column 1b	17	Cathode Column 4a
6	Cathode Column 2b	18	Cathode Column 3a
7	Cathode Column 3b	19	Cathode Column 2a
8	Cathode Column 4b	20	Cathode Column 1a
9	Cathode Column 5b	21	Anode Row 4
10	Cathode Column 6b	22	Anode Row 3
11	Cathode Column 7b	23	Anode Row 2
12	Cathode Column 8b	24	Anode Row 1

Note "a" = High Efficiency Red LED
"b" = Green LED

SCHEMATIC:





1.5 INCH (37.9mm) 8 X 8 DOT MATRIX STICK DISPLAY

GRAPHICAL DETAIL: High Efficiency Red ($T_A = 25^\circ\text{C}$ unless otherwise specified)

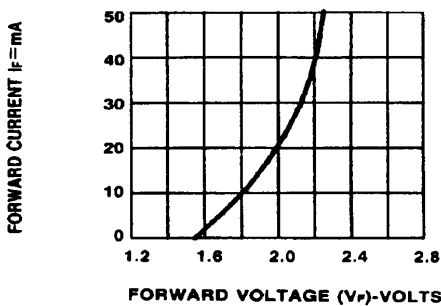


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

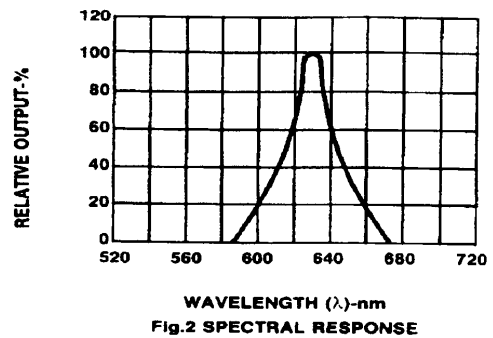


Fig.2 SPECTRAL RESPONSE

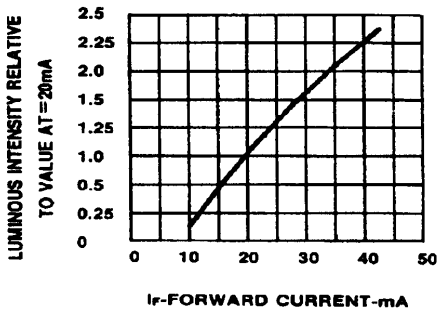


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

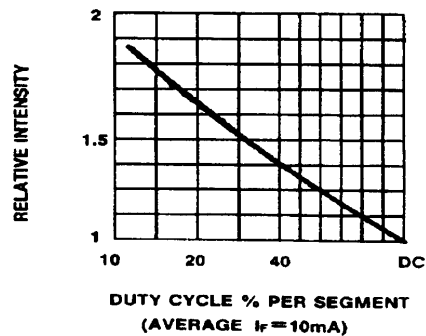


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

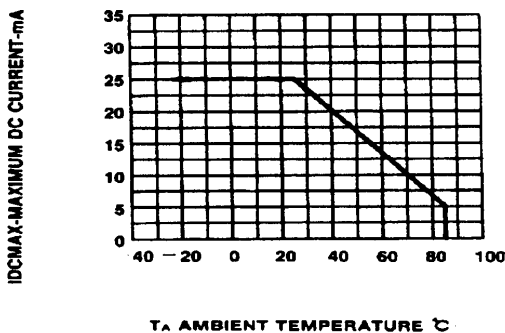


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

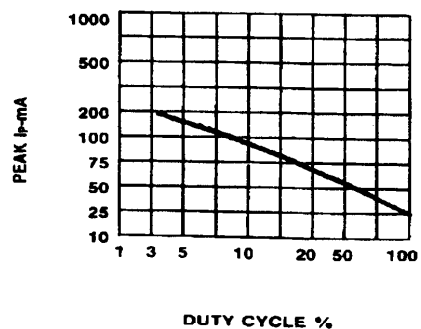


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f = 1 \text{ kHz}$)

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**1.5 INCH (37.9mm) 8 X 8
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GRAPHICAL DETAIL: Green ($T_A = 25^\circ\text{C}$ unless otherwise specified)

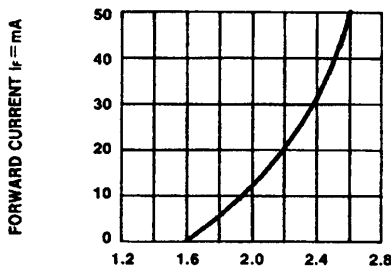


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

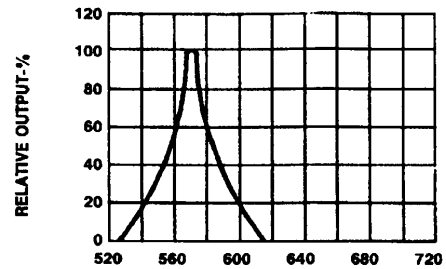


Fig.2 SPECTRAL RESPONSE

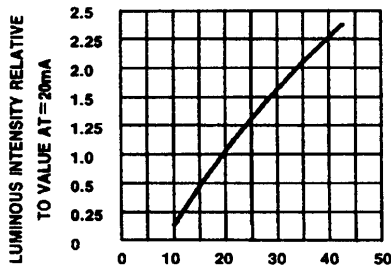


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

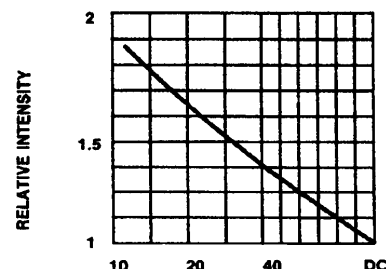


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE (AVERAGE I_f = 10mA)

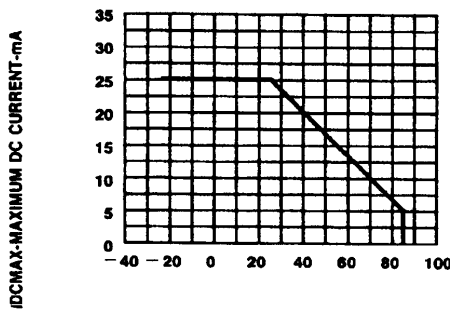


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

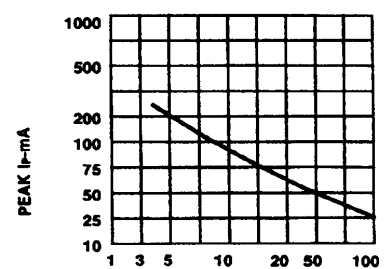


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f = 1 KHz)



1.5 INCH (37.9mm) 8 X 8 DOT MATRIX STICK DISPLAY

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.