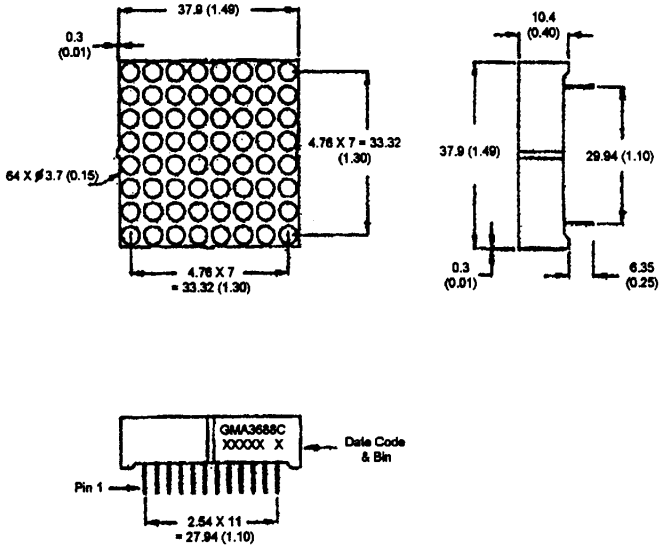
FAIRCHILD
SEMICONDUCTOR™

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

HER Red / Green GMA3688C (BI-COLOR)

PACKAGE DIMENSIONS



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

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.

MODEL NUMBER

Part Number	Colour	Description
GMA3688C	HER Red/Green	Common anode row.

(For other color options, contact your local area Sales Office)

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ABSOLUTE MAXIMUM RATING (T_A = 25°C unless otherwise specified)

	HER	Green	Units
Peak forward current per segment (Duty cycle 1/10, 10KHz)	90	90	mA
Continous 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.....3 sec
(1/16" below seating plane)

ELECTRO - OPTICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

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

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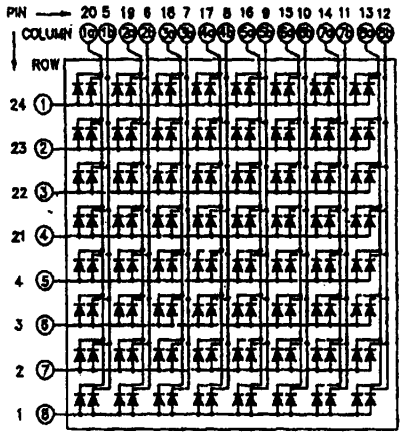
PIN CONNECTION:

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:



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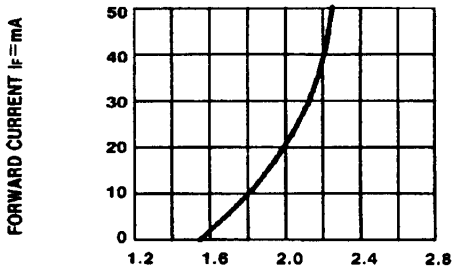
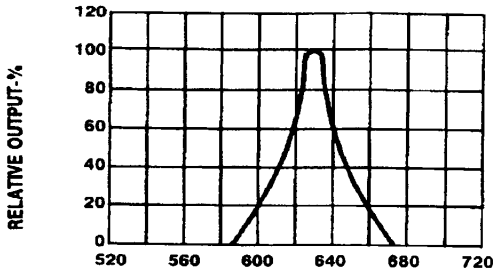
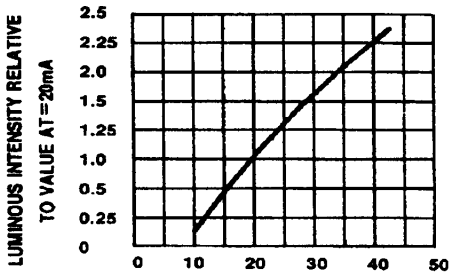
GRAPHICAL DETAIL: High Efficiency Red (T_A = 25°C unless otherwise specified)



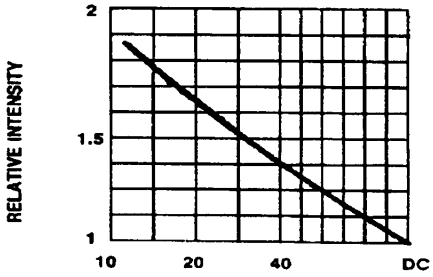
FORWARD VOLTAGE (V_F)-VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



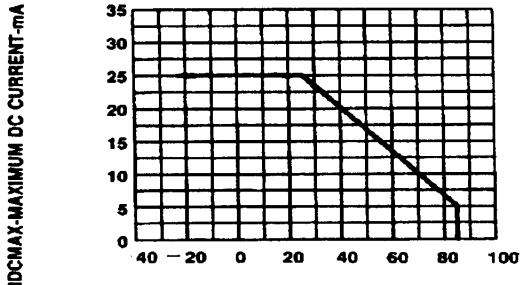
WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



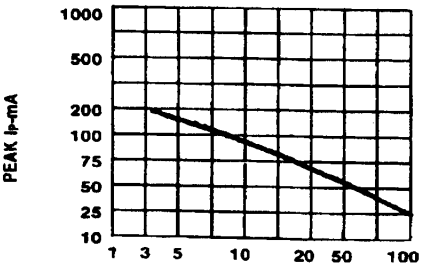
I_F-FORWARD CURRENT-mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



DUTY CYCLE % PER SEGMENT
(AVERAGE I_F=10mA)
Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



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



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

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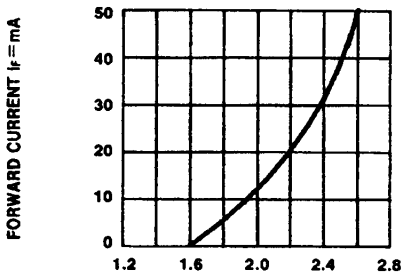
GRAPHICAL DETAIL: Green (T_A = 25°C unless otherwise specified)



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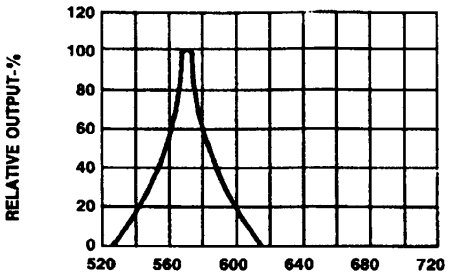
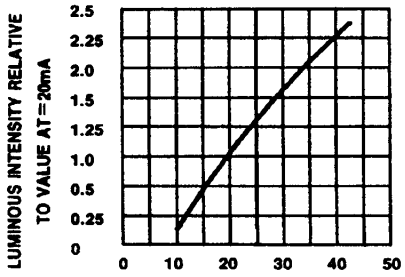


WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



I_F-FORWARD CURRENT-mA
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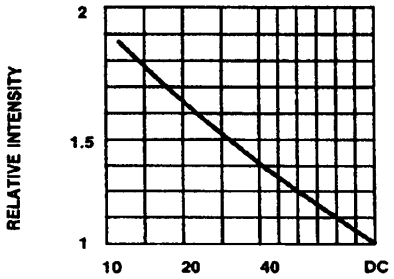
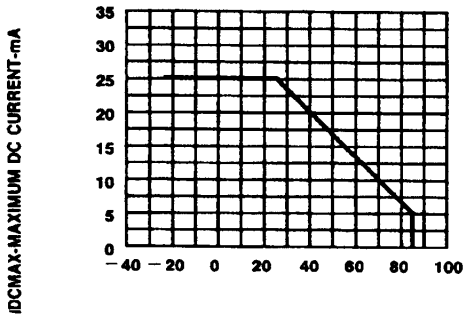


DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)
Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



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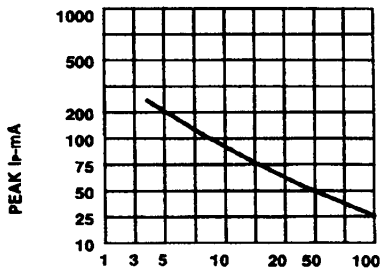

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Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)

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