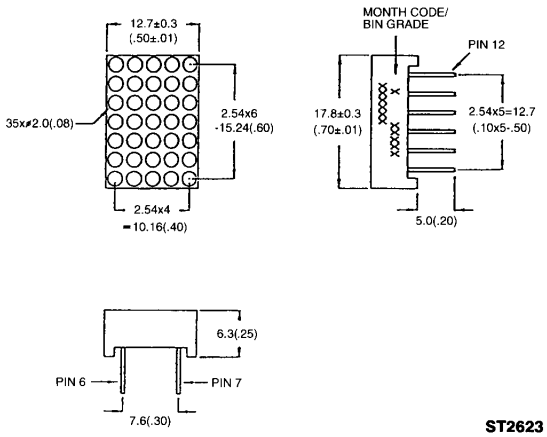
FAIRCHILD
SEMICONDUCTOR™

0.7" 5×7
DOT MATRIX DISPLAYS

HER GMA 7175CA GMC 7175CA
YELLOW GMA 7475CA GMC 7475CA
GREEN GMA 7975CA GMC 7975CA

PACKAGE DIMENSIONS



ST2623

NOTES:
1. ALL PINS ARE θ0.5 (.02).
2. DIMENSION IN MILLIMETERS (INCH), TOLERANCE IS 0.25 (.01) UNLESS OTHERWISE NOTED.

DESCRIPTION

The GMX7X75CA series are 0.7" (17.2mm) matrix height 5 X 7 dot matrix displays. All these parts are available in grey face and white dot color.

The X in GMX denotes row anode or row cathode.

FEATURES

- 0.7" (17.8mm) matrix height
- Choice of 3 colors — green, yellow and HER
- Low power consumption
- 5 X 7 array with X-Y select
- Stackable vertically and horizontally
- Choice of 2 matric orientation cathode column or anode column
- Easy mounting on PCB or sockets
- Categorized for luminous intensity

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

	YELLOW	HER	GREEN	UNITS
Power dissipation per dot	60	70	75	mW
Peak forward current per dot (Duty cycle 1/10, 10KHz)	80	100	100	mA
Continuous I_F per dot	20	25	25	mA
Reverse voltage per dot	5	5	5	V
Operating and operating temperature range				−25°C to +85°C
Soldering time at 260°C (1/16 inch below seating plane)				3 sec

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0.7" 5×7 DOT MATRIX DISPLAYS

ELECTRICAL/OPTICAL CHARACTERISTICS (T_A=25°C Unless otherwise specified)
GMX7175CA (HER)

PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Average luminous intensity		3000		μcd	I_F=20 mA
Peak emission wavelength		635		nm	I_F=20 mA
Spectral line half-width		40		nm	I_F=20 mA
Forward voltage, any dot		2.1	2.8	V	I_F=20 mA
Reverse voltage, any dot			100	μA	V_R=5V

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES
(T_A=25°C Unless otherwise specified)

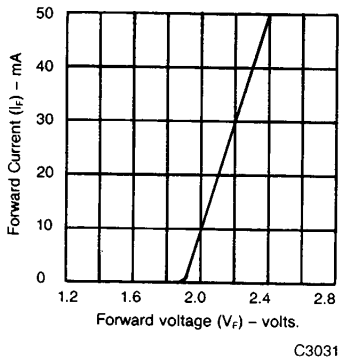

Fig. 1. Forward Current vs. Forward Voltage

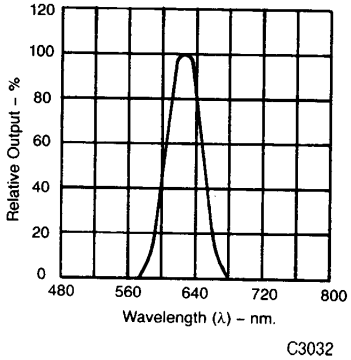

Fig. 2. Spectral Response

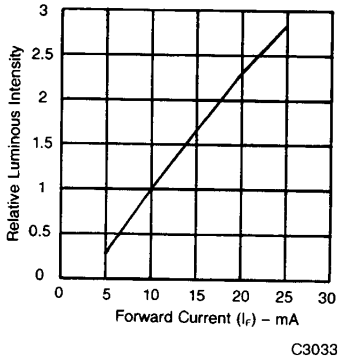

Fig. 3. Relative Luminous Intensity vs. Forward Current (Per Segment)

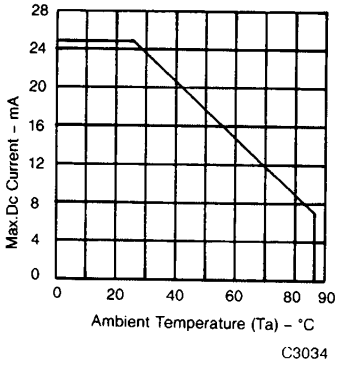

Fig. 4. Max. Forward Allowable DC Current Per Seg. vs. Ambient Temperature

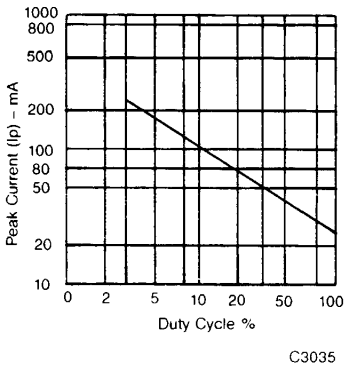

Fig. 5. Max. Peak Current vs. Duty Circle % (Refresh Rate–F=1 KHz)

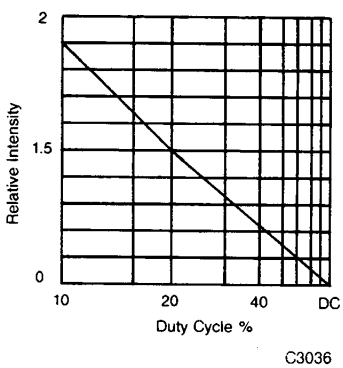

Fig. 6. Luminous Intensity vs. Duty Cycle % (Average 1=10 mA Per Seg.)

ELECTRICAL/OPTICAL CHARACTERISTICS (T_A=25°C Unless otherwise specified)
GMX 7475CA (YELLOW)

PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Average luminous intensity		3000		μcd	I_F=20 mA
Peak emission wavelength		585		nm	I_F=20 mA
Spectral line half-width		35		nm	I_F=20 mA
Forward voltage, any dot		2.1	2.8	V	I_F=20 mA
Reverse voltage, any dot			100	μA	V_R=5V

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES
(T_A=25°C Unless Otherwise Noted)

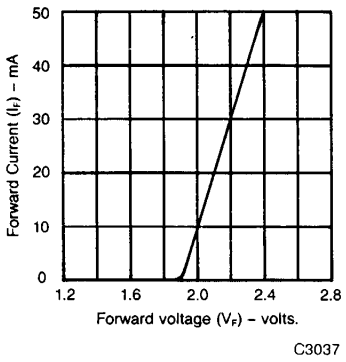

Fig. 1. Forward Current vs. Forward Voltage

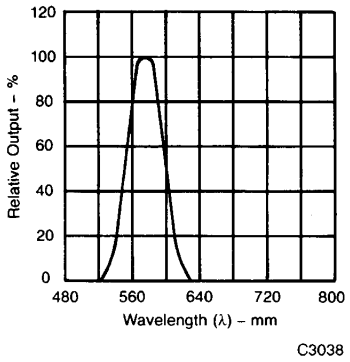

Fig. 2. Spectral Response

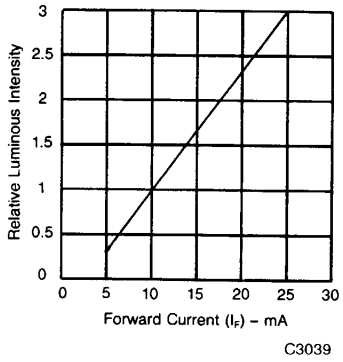

Fig. 3. Relative Luminous Intensity vs. Forward Current (Per Segment)

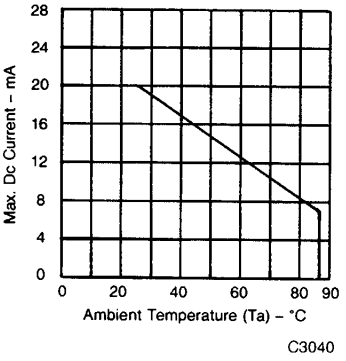

Fig. 4. Max. Forward Allowable DC Current Per Seg. vs. Ambient Temperature

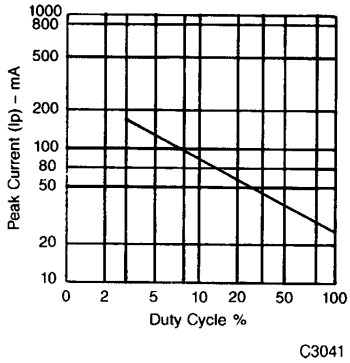

Fig. 5. Max. Peak Current vs. Duty Circle % (Refresh Rate–F=1 KHz)

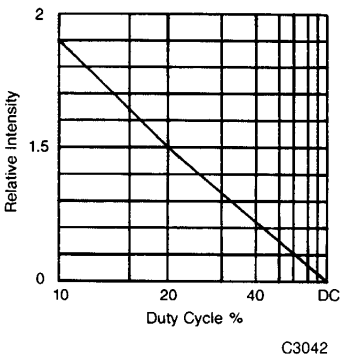

Fig. 6. Luminous Intensity vs. Duty Cycle % (Average 1=10 mA Per Seg.)

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ELECTRICAL/OPTICAL CHARACTERISTICS (T_A=25°C Unless otherwise specified)
GMX 7975CA (GREEN)

PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Average luminous intensity		3000		μcd	I_F=20 mA
Peak emission wavelength		565		nm	I_F=20 mA
Spectral line half-width		30		nm	I_F=20 mA
Forward voltage, any dot		2.1	2.8	V	I_F=20 mA
Reverse voltage, any dot			100	μA	V_R=5V

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES
(T_A=25°C Unless otherwise specified)

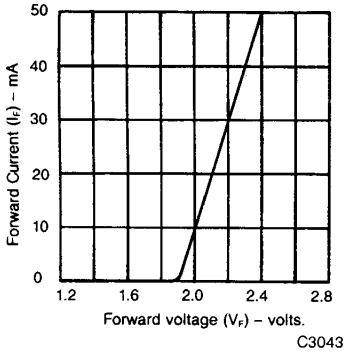


Fig. 1. Forward Current vs. Forward Voltage

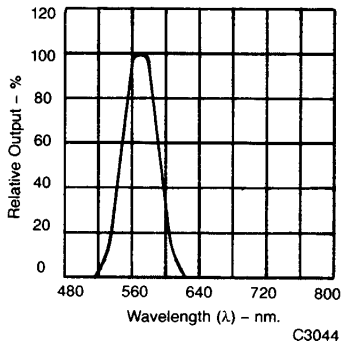


Fig. 2. Spectral Response

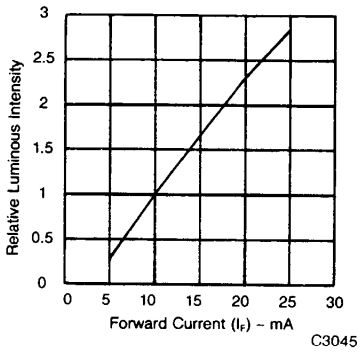
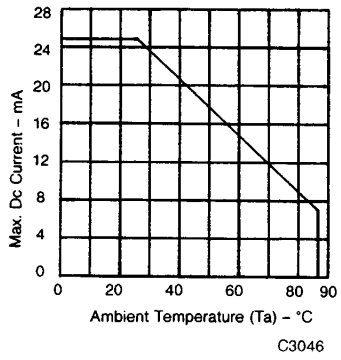


Fig. 3. Relative Luminous Intensity vs. Forward Current (Per Segment)



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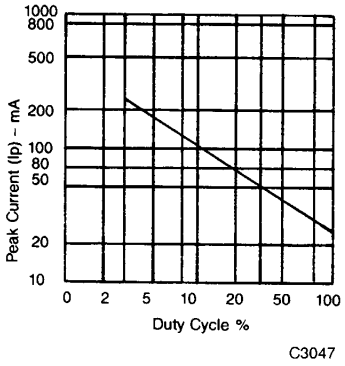

Fig. 5. Max. Peak Current vs. Duty Circle % (Refresh Rate – F=1 KHz)

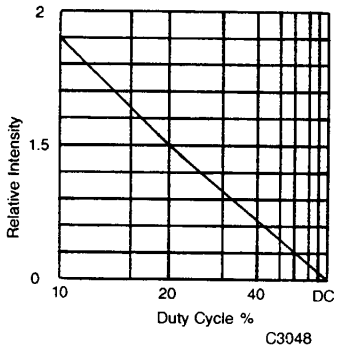

Fig. 6. Luminous Intensity vs. Duty Cycle % (Average 1=10 mA Per Seg.)

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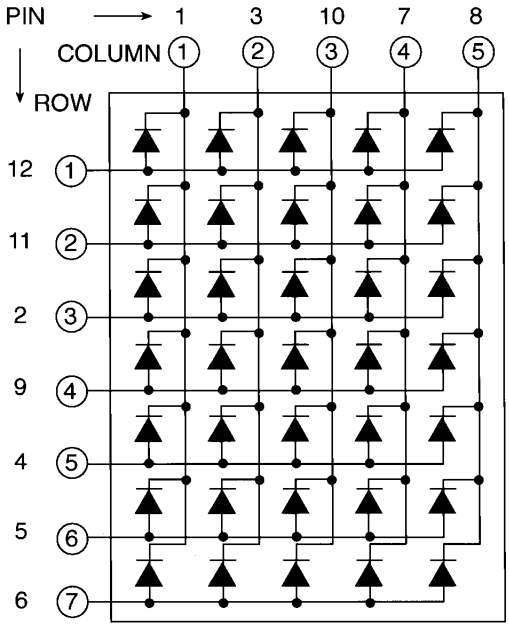
PIN CONNECTION

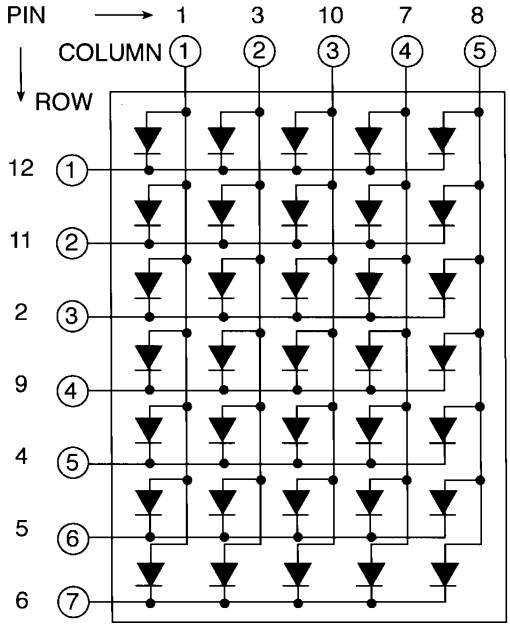
PIN NO.	GMA7X75CA	GMC7X75CA
1	Cathode column 1	Anode column 1
2	Anode row 3	Cathode row 3
3	Cathode column 2	Anode column 2
4	Anode row 5	Cathode row 5
5	Anode row 6	Cathode row 6
6	Anode row 7	Cathode row 7
7	Cathode column 4	Anode column 4
8	Cathode column 5	Anode column 5
9	Anode row 4	Cathode row 4
10	Cathode column 3	Anode column 3
11	Anode row 2	Cathode row 2
12	Anode row 1	Cathode row 1

INTERNAL CIRCUIT DIAGRAM

GMA7X75CA



GMC7X75CA



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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.