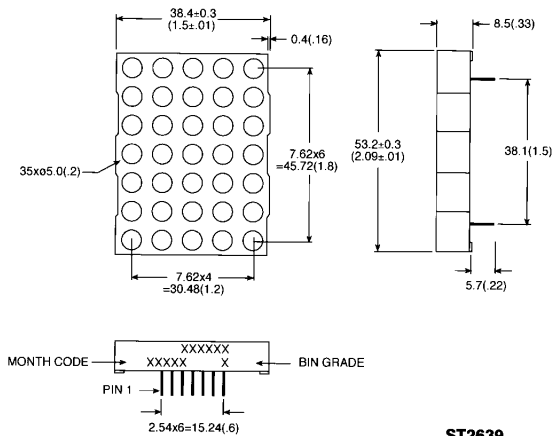


YELLOW GMA 2875C GMC 2875C
HER GMA 2975C GMC 2975C
GREEN GMA 2475C GMC 2475C
BICOLOR RED/GREEN GMA 2675C

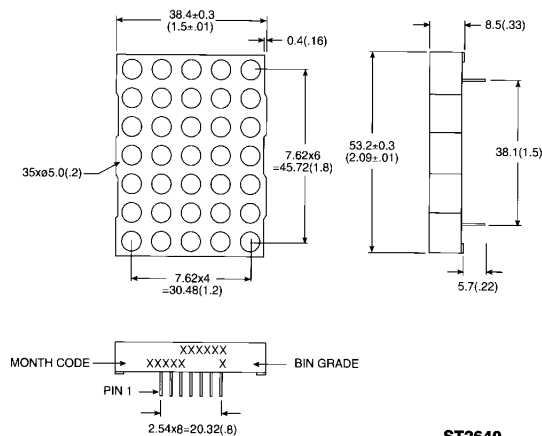
PACKAGE DIMENSIONS

A. GMX2X75C



ST2639

B. GMA2675C



ST2640

DESCRIPTION

These are 5 × 7 dot matrix displays with large emitting area (0.2" diameter) LED sources. The GMX2X75C series are single color displays with the exception of GMA2675C which is a bicolor of red/green displays.

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

The X in GMX denotes row anode or row cathode.

FEATURES

- 2.0" (50.7 mm) character height
- Low power requirement
- High contrast & brightness
- Wide viewing angle 130°
- 5 × 7 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 colors — yellow/orange/green
- Multicolor color displays are applicable to 3 bright colors — greens, orange (HER) and yellow (green and HER mixed)

NOTES:

1. ALL PINS ARE 00.5 (.02).
2. DIMENSIONS IN MILLIMETERS (INCH), TOLERANCE IS ±0.25 (.01) UNLESS OTHERWISE NOTED.



2.0" 5 × 7 **DOT MATRIX DISPLAYS**

ABSOLUTE MAXIMUM RATING (T _A = 25°C unless otherwise specified)				
PARAMETER	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 _F per dot/color	20	25	25	mA
Reverse voltage V _R per dot/color	5	5	5	V
Operating and storage temperature range	-25°C to +85°C			
Soldering time at 260°C (1/16 inch below seating plane)	3 sec			

MODEL NUMBERS						
PART NO.				DESCRIPTION	PACKAGE DIMENSION	INTERNAL CIRCUIT DIAGRAM
YELLOW	HER	GREEN	MULTI-COLOR			
GMC2875C	GMC2975C	GMC2475C	GMA2675C	Anode column, cathode row	A	A
GMA2875C	GMA2975C	GMA2475C		Cathode column, anode row	A	B
				Cathode column, anode row	B	C

ELECTRICAL/OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise specified)
GMX 2875C

PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Average luminous intensity		3000		μcd	$I_F = 20\text{ mA}$
Peak emission wavelength		585		nm	$I_F = 20\text{ mA}$
Spectral line half-width		30		nm	$I_F = 20\text{ mA}$
Forward voltage, any dot		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse voltage, any dot			100	μA	$V_R = 5\text{ V}$

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES
($T_A = 25^\circ\text{C}$ Unless otherwise specified)

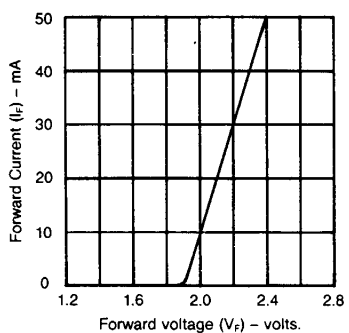


Fig. 1. Forward Current vs. Forward Voltage

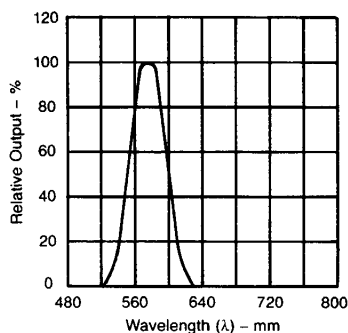


Fig. 2. Spectral Response

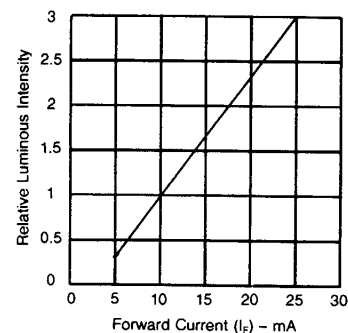


Fig. 3. Relative Luminous Intensity vs. Forward Current

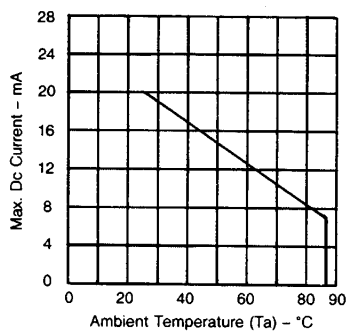


Fig. 4. Maximum Allowable DC Current Per Segment vs. Ambient Temperature

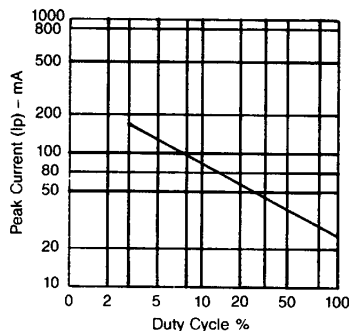


Fig. 5. Luminous Intensity vs. Duty Cycle

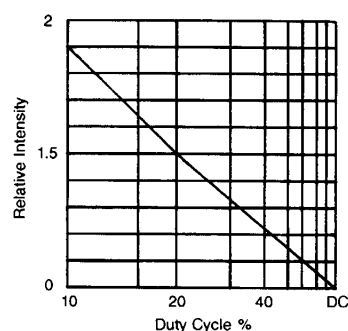
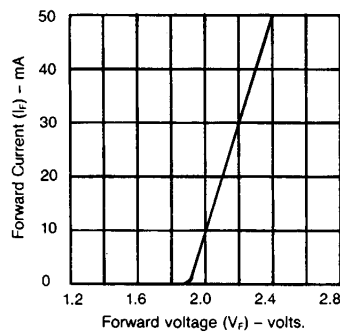


Fig. 6. Max Peak Current vs. Duty Cycle % (Refresh Rate $f = 1\text{ KHz}$)

ELECTRICAL/OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise specified)
GMX 2975C

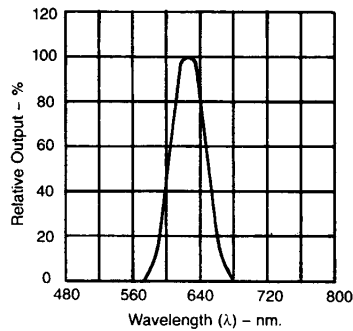
PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Average luminous intensity		3000		μcd	$I_F = 20\text{ mA}$
Peak emission wavelength		635		nm	$I_F = 20\text{ mA}$
Spectral line half-width		30		nm	$I_F = 20\text{ mA}$
Forward voltage, any dot		2.1	2.8	V	$I_F = 20\text{ mA}$
Reverse voltage, any dot			100	μA	$V_R = 5\text{ V}$

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES
($T_A = 25^\circ\text{C}$ Unless otherwise specified)



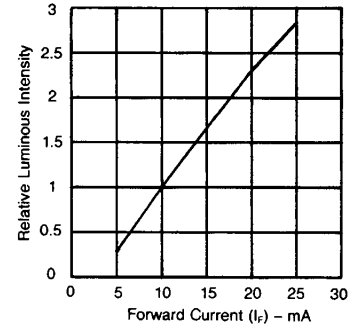
C3031

Fig. 1. Forward Current vs. Forward Voltage



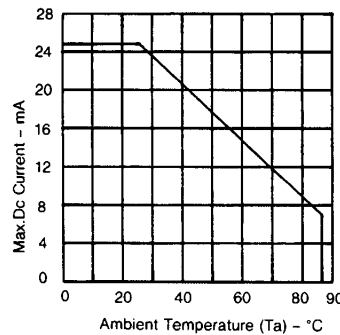
C3032

Fig. 2. Spectral Response



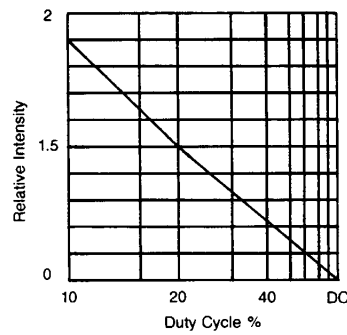
C3033

Fig. 3. Relative Luminous Intensity vs. Forward Current



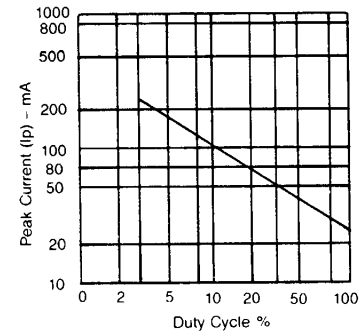
C3034

Fig. 4. Maximum Allowable DC Current Per Segment vs. A Function of Ambient Temperature



C3036

Fig. 5. Luminous Intensity vs. Duty Cycle



C3035

Fig. 6. Max. Peak Current vs. Duty Cycle % (Refresh Rate $f = 1\text{ KHz}$)

ELECTRICAL/OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise specified)
GMX 2475C

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

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES
($T_A = 25^\circ\text{C}$ Unless otherwise specified)

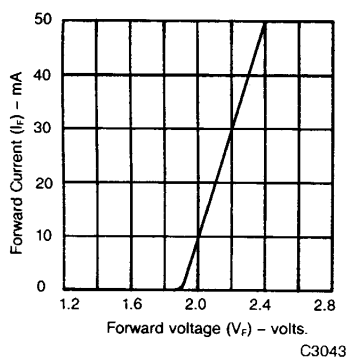


Fig. 1. Forward Current vs. Forward Voltage

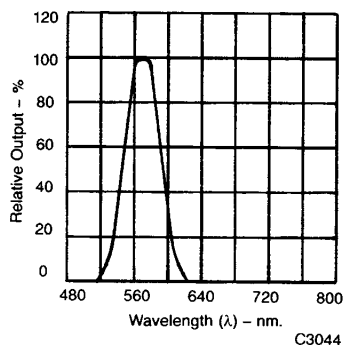


Fig. 2. Spectral Response

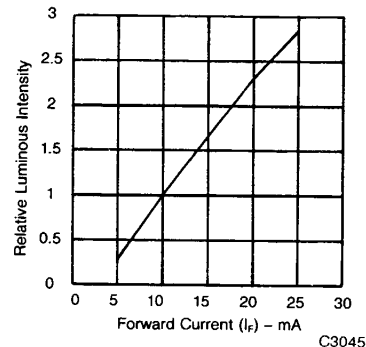


Fig. 3. Relative Luminous Intensity vs. Forward Current

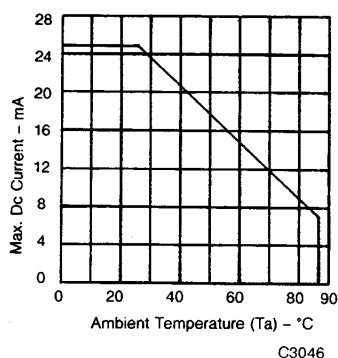


Fig. 4. Maximum Allowable DC Current Per Segment vs. Ambient Temperature

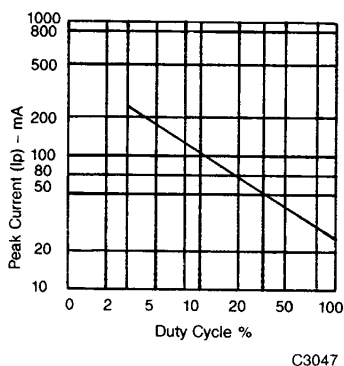


Fig. 5. Max Peak Current vs. Duty Cycle % (Refresh Rate $f = 1\text{ KHz}$)

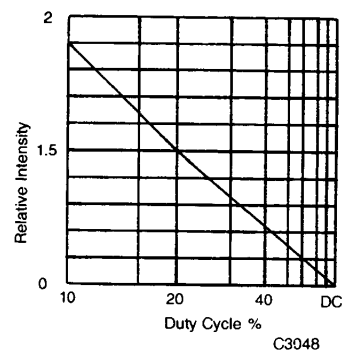


Fig. 6. Luminous Intensity vs. Duty Cycle (Average $I = 10\text{ mA Per Seg.}$)

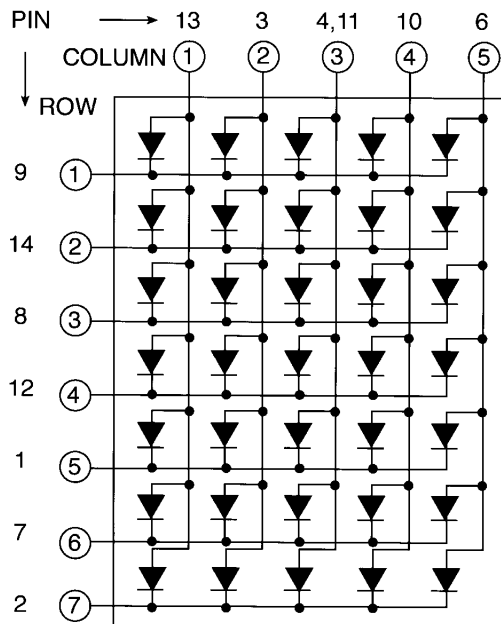


**2.0" 5 × 7
DOT MATRIX DISPLAYS**

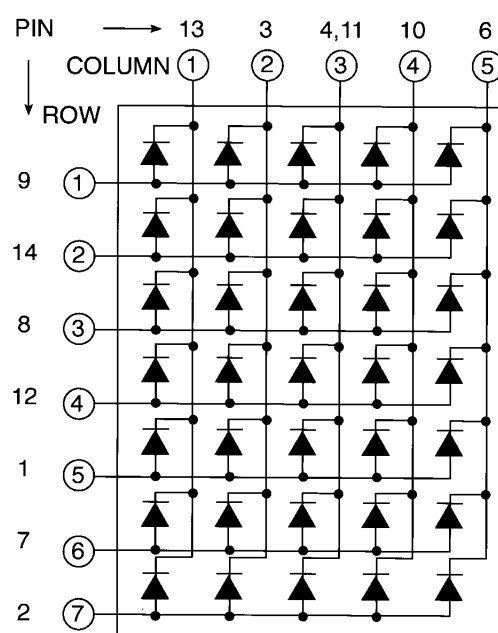
PIN CONNECTION			
PIN NO.	GMC2X75C	GMA2X75C	GMA2675C
1	Cathode row 5	Anode row 5	Cathode column 1 green
2	Cathode row 7	Anode row 7	Cathode column 2 green
3	Anode column 2	Cathode column 2	Cathode column 2 HER
4	Anode column 3	Cathode column 3	Cathode column 3 HER
5	Cathode row 4	Anode row 4	Anode row 6
6	Anode column 5	Cathode column 5	Anode row 7
7	Cathode row 6	Anode row 6	Cathode column 4 HER
8	Cathode row 3	Anode row 3	Anode row 5
9	Cathode row 1	Anode row 1	No connection
10	Anode column 4	Cathode column 4	Cathode column 5 green
11	Anode column 3	Cathode column 3	Cathode column 5 HER
12	Cathode row 4	Anode row 4	Cathode column 4 green
13	Anode column 1	Cathode column 1	Anode column 3 green
14	Cathode row 2	Anode row 2	Anode row 4
15			Anode row 2
16			Anode row 1
17			Anode row 3
18			Cathode column 1 HER

INTERNAL CIRCUIT DIAGRAM

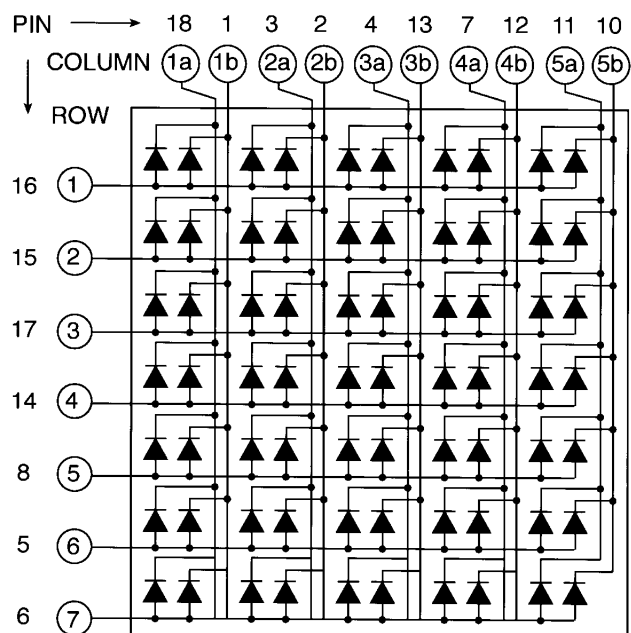
A. GMC2X75C



B. GMA2X75C



C. GMA2675C





2.0" 5 X 7 DOT MATRIX DISPLAYS

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
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.