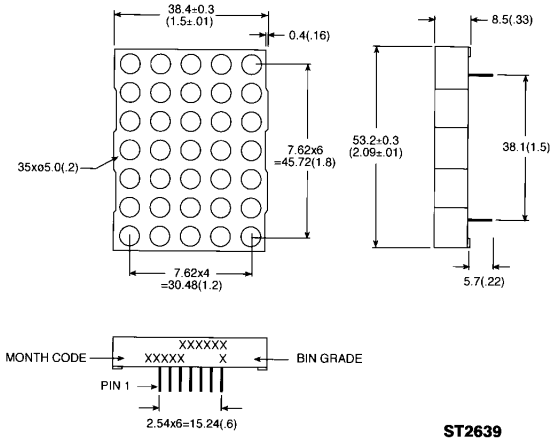
QT OPTOELECTRONICS

2.0" 5 × 7 DOT MATRIX DISPLAYS

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

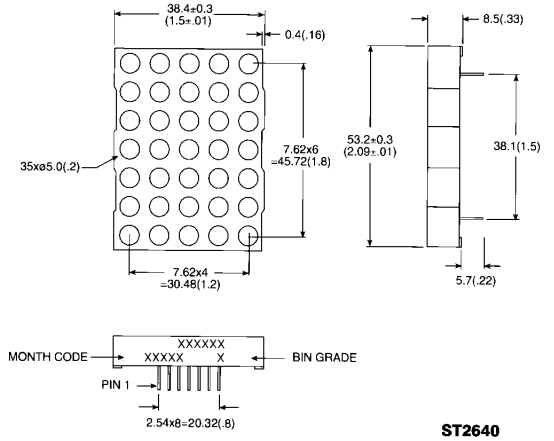
PACKAGE DIMENSIONS

A. GMX2X75C



ST2639

B. GMA2675C



ST2640

NOTES:
1. ALL PINS ARE ø0.5 (.02).
2. DIMENSIONS IN MILLIMETERS (INCH), TOLERANCE IS ±0.25 (.01) UNLESS OTHERWISE NOTED.

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)

QT OPTOELECTRONICS

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.						
YELLOW	HER	GREEN	MULTI-COLOR	DESCRIPTION	PACKAGE DIMENSION	INTERNAL CIRCUIT DIAGRAM
GMC2875C	GMC2975C	GMC2475C		Anode column, cathode row	A	A
GMA2875C	GMA2975C	GMA2475C		Cathode column, anode row	A	B
			GMA2675C	Cathode column, anode row	B	C

ELECTRICAL/OPTICAL CHARACTERISTICS (T_A = 25°C Unless otherwise specified)
GMX 2875C

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		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=5 V

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

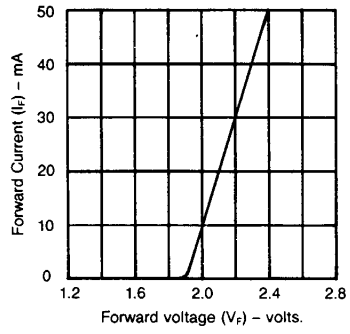


Fig. 1. Forward Current vs. Forward Voltage

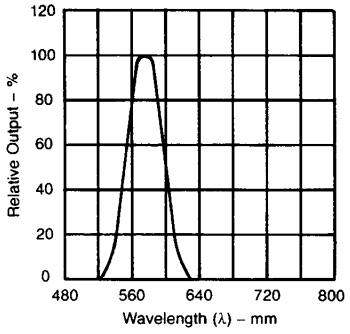


Fig. 2. Spectral Response

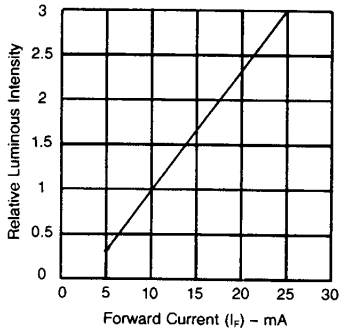


Fig. 3. Relative Luminous Intensity vs. Forward Current

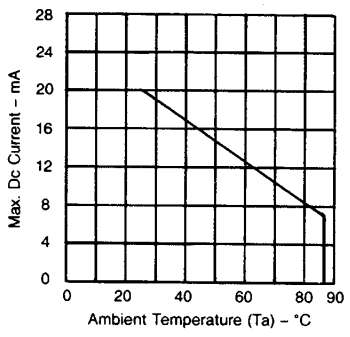


Fig. 4. Maximum Allowable DC Current Per Segment vs. A Function of Ambient Temperature

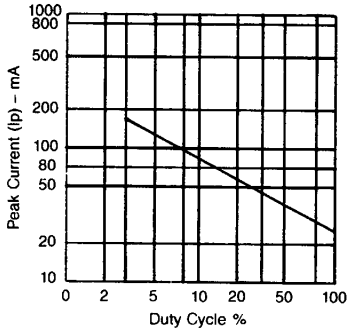


Fig. 5. Luminous Intensity vs. Duty Cycle

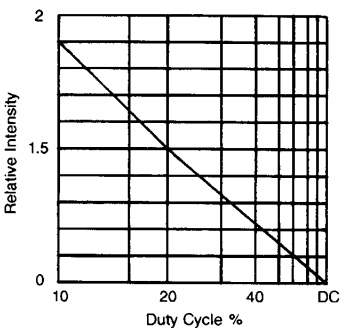


Fig. 6. Max Peak Current vs. Duty Cycle % (Refresh Rate f=1 KHz)

ELECTRICAL/OPTICAL CHARACTERISTICS (T_A = 25°C Unless otherwise specified)
GMX 2975C

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		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=5 V

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

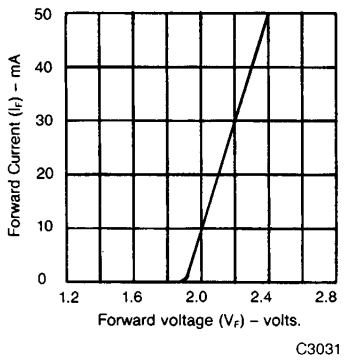


Fig. 1. Forward Current vs. Forward Voltage

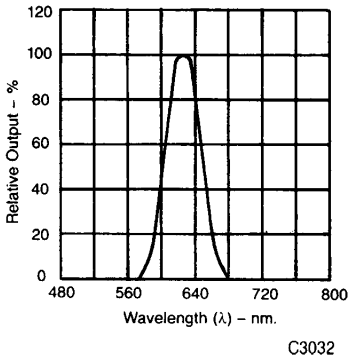


Fig. 2. Spectral Response

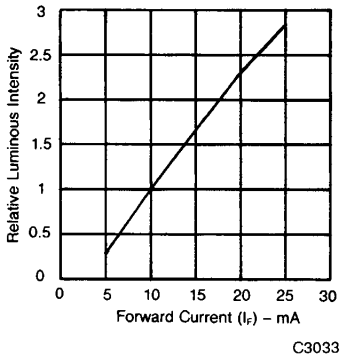


Fig. 3. Relative Luminous Intensity vs. Forward Current

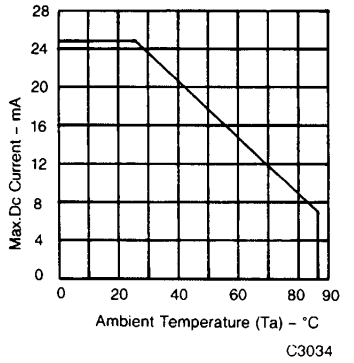


Fig. 4. Maximum Allowable DC Current Per Segment vs. A Function of Ambient Temperature

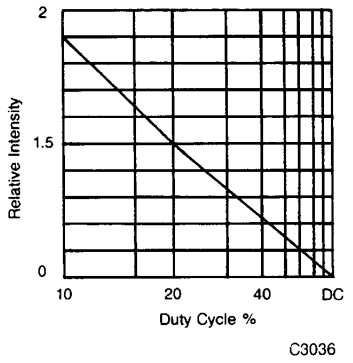


Fig. 5. Luminous Intensity vs. Duty Cycle

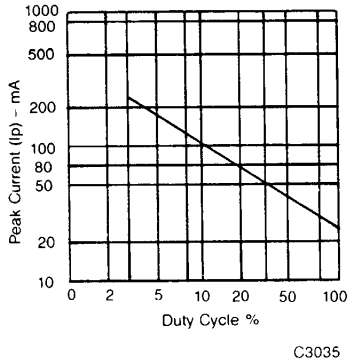


Fig. 6. Max. Peak Current vs. Duty Cycle % (Refresh Rate f=1 KHz)

ELECTRICAL/OPTICAL CHARACTERISTICS (T_A = 25°C Unless otherwise specified)
GMX 2475C

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=5 V

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

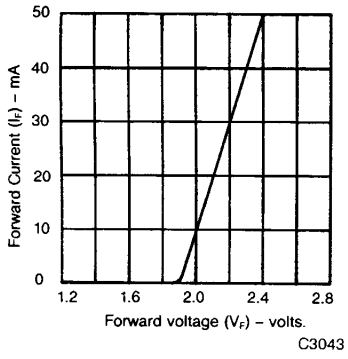


Fig. 1. Forward Current vs. Forward Voltage

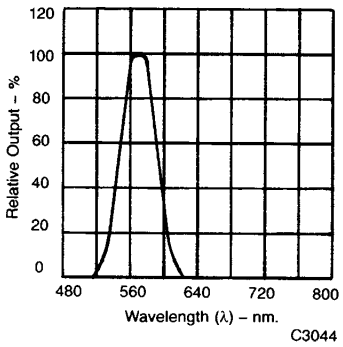


Fig. 2. Spectral Response

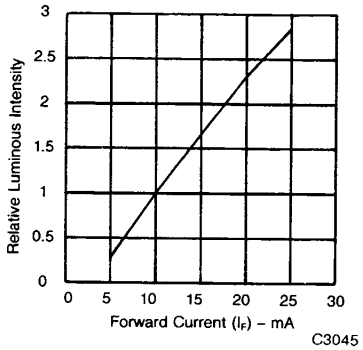


Fig. 3. Relative Luminous Intensity vs. Forward Current

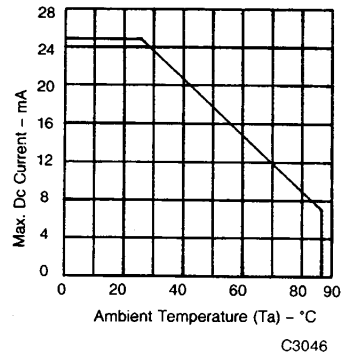


Fig. 4. Maximum Allowable DC Current Per Segment vs. A Function of Ambient Temperature

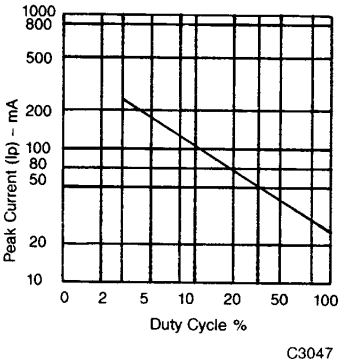


Fig. 5. Max Peak Current vs. Duty Cycle % (Refresh Rate f=1 KHz)

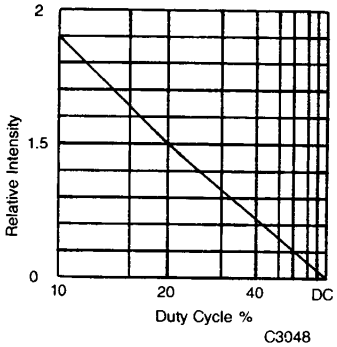


Fig. 6. Luminous Intensity vs. Duty Cycle (Average 1=10 mA Per Seg.)

QT OPTOELECTRONICS

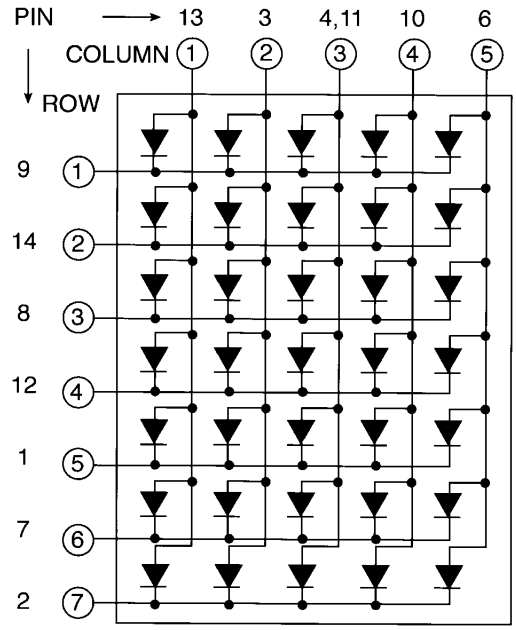
2.0" 5 × 7 DOT MATRIX DISPLAYS

PIN CONNECTION

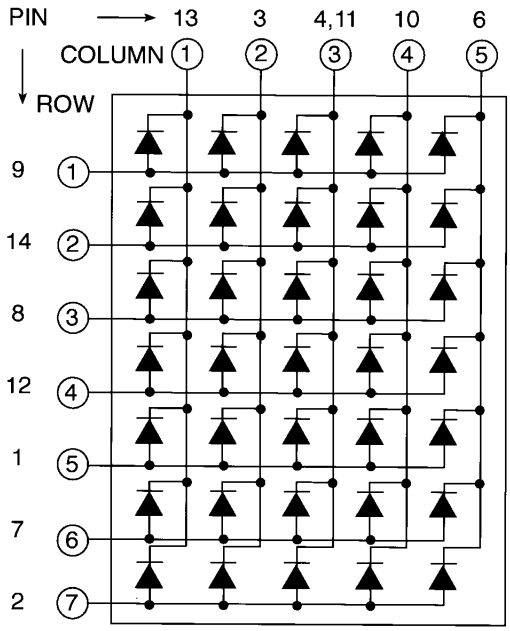
PIN NO.	GMC2X75C	GMA2X75C	GMA2675C
1	Cathode row 5	Anode row 5	Cathode column 1 green
2	Cathode row 7	Anode row 7	Cathode column 2 green
3	Anode column 2	Cathode column 2	Cathode column 2 HER
4	Anode column 3	Cathode column 3	Cathode column 3 HER
5	Cathode row 4	Anode row 4	Anode row 6
6	Anode column 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

