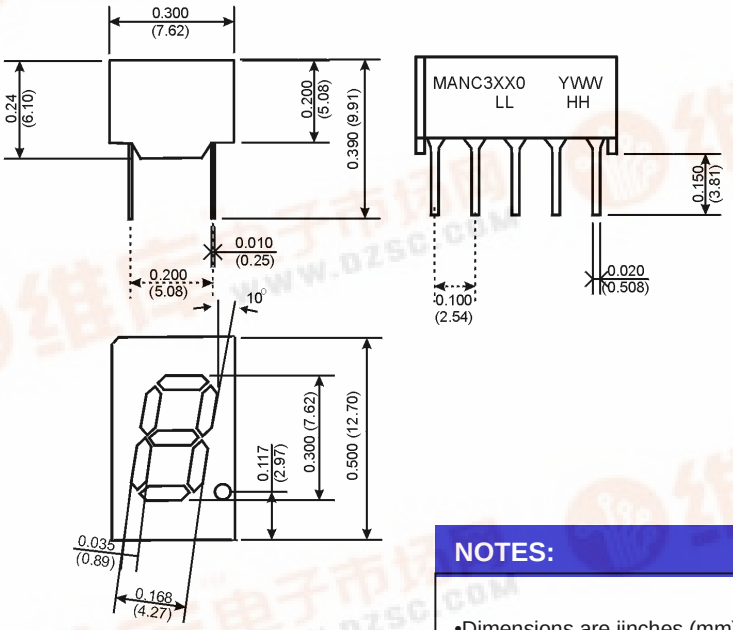
FAIRCHILD SEMICONDUCTOR™

7.6mm (0.3 inch) COMPACT NUMERIC FRAME DISPLAY

Bright Red MANC3110, MANC3140
High Efficiency Red MANC3910, MANC3940
Green MANC3410, MANC3440

TR/QTO/SV001

PACKAGE DIMENSIONS



NOTES:

- Dimensions are iinches (mm)
- Tolerances are +/- 0.010 (0.25mm) unless otherwise stated.

FEATURES

- Bright Bold Segments
- Common Anode/Cathode
- Low Power Consumption
- Low Current Capability
- Neutral Segments
- Grey Face
- Epoxy Encapsulated Frame
- High Performance
- High Reliability

APPLICATIONS

- Appliances
- Automotive
- Instrumentation
- Process Control

MODELS AVAILABLE

Part Number	Colour	Description	Recommended I_F Levels
MANC3110	Bright Red	Common Anode	Standard Current (5mA - 20mA)
MANC3140	Bright Red	Common Cathode	Standard Current (5mA - 20mA)
MANC3410	Green	Common Anode	Standard Current (5mA - 20mA)
MANC3440	Green	Common Cathode	Standard Current (5mA - 20mA)
MANC3910	High Efficiency Red	Common Anode	Standard Current (5mA - 20mA)
MANC3940	High Efficiency Red	Common Cathode	Standard Current (5mA - 20mA)

(For other colour options, contact your local area Sales Manager)

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ABSOLUTE MAXIMUM RATINGS[1] (T_A = 25°C, unless otherwise specified)

Part Number / Parameter	MANC3110 / MANC3140	MANC3410 / MANC3440	MANC3910 / MANC3940	Units
Continuous Forward Current (each segment)	15	25	25	mA
Peak Forward Current (F = 10KHz, D/F = 1/10)	60	90	90	mA
Power Dissipation (P_D)	40	70	70	mW
***Derate Linearly from 25°C**	0.17	0.33	0.33	mW
Reverse Voltage per Die				5 Volts
Operating and Storage Temperature Range				-40°C to +85°C
Lead soldering time (1/16 inch from standoffs)				5 seconds @ 230°C

ELECTRO-OPTICAL CHARACTERISTICS[1] (T_A = 25°C, unless otherwise specified)

Part Number / Parameter	MANC3110 / MANC3140	MANC3410 / MANC3440	MANC3910 / MANC3940	Units	Test Condition
Luminous intensity[2] (I_V)					
Minimum (Standard Current)		860	980	ucd	I_F = 5mA
Typical (Standard Current)	700	6800	5390	ucd	I_F = 20mA
For low current versions see	MAN3H10	MAN3G10	MAN3R10		
	MAN3H40	MAN3G40	MAN3R40		
Forward Voltage (V_F)					
Typical (Standard Current)	2.10	2.10	2.00	Volts	I_F = 20mA
Maximum (Standard Current)	2.80	2.80	2.50	Volts	I_F = 20mA
Peak Wavelength	700	568	643	nm	I_F = 20mA
Dominant Wavelength		573	632	nm	I_F = 20mA
Spectral Line 1/2 Width	90	30	45	nm	I_F = 10mA
Reverse B[3].Voltage (V_R)	5	5	5	Volts	I_R = 100uA

NOTES:
(1) Data per individual LED element
(2) Luminous intensity (ucd) = average light output per segment
(3) B = breakdown

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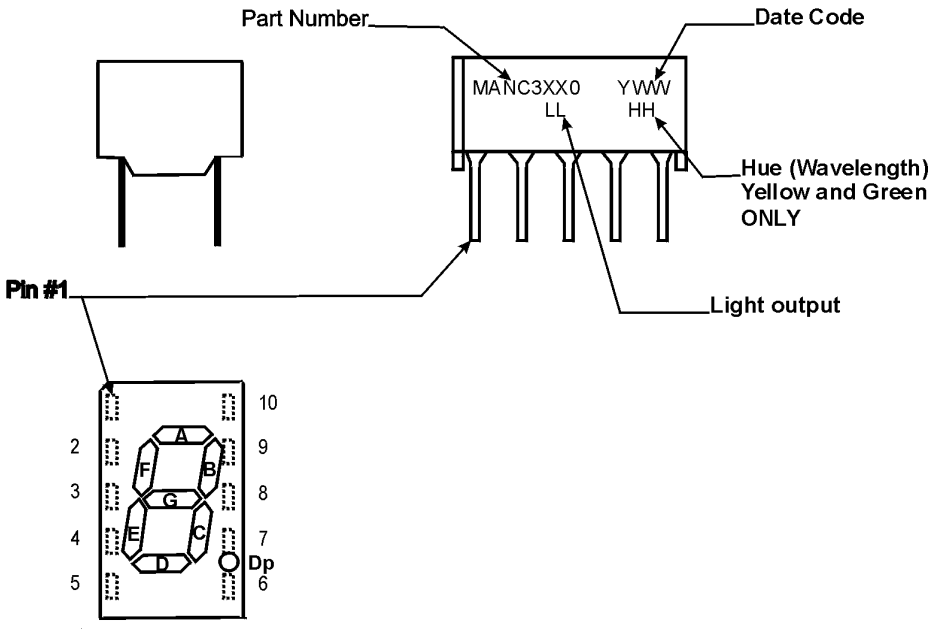
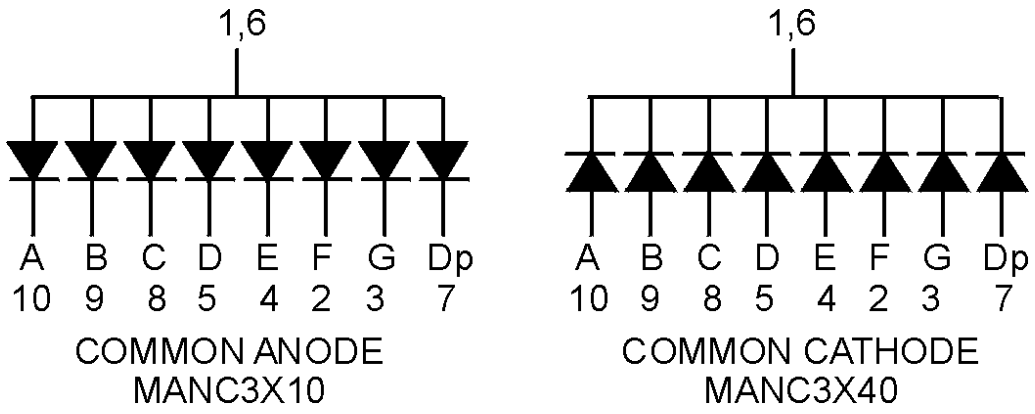
PIN ORIENTATION, SEGMENT IDENTIFICATION, AND PRODUCT MARKING



SCHEMATICS



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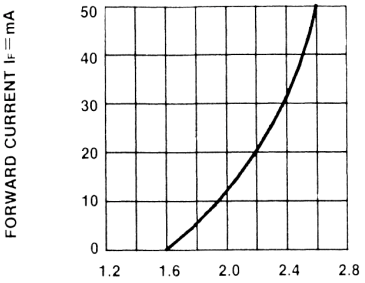
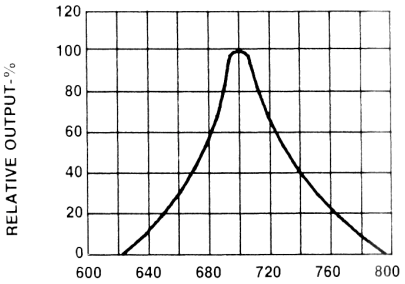
GRAPHICAL DATA Bright Red (T_A = 25ºC, unless otherwise specified)



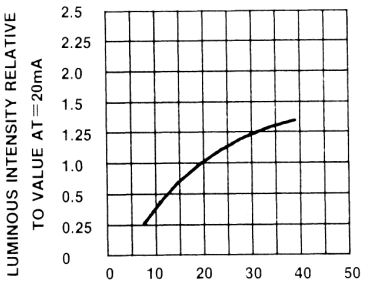
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



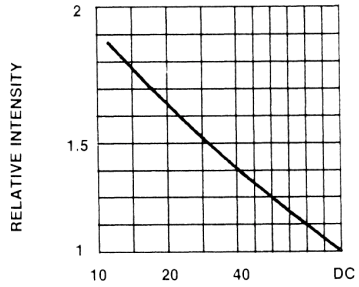
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



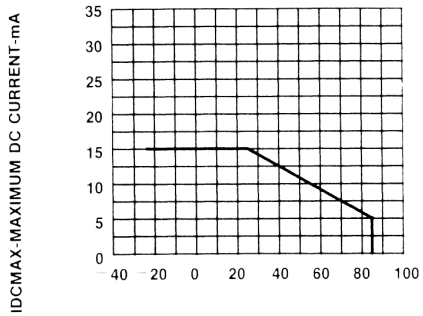
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



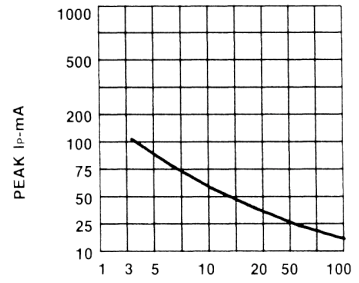
DUTY CYCLE % PER SEGMENT (AVERAGE IF=10mA)

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



TA 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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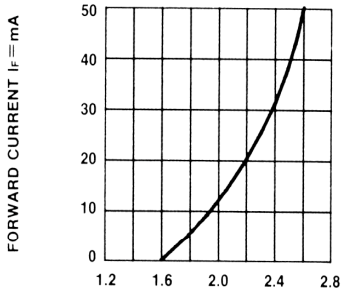
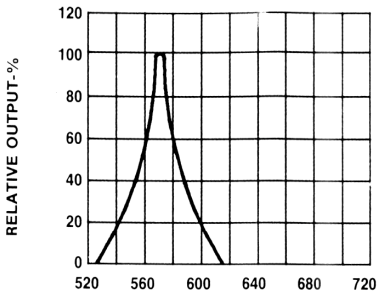
GRAPHICAL DATA Green (T_A = 25°C, unless otherwise specified)



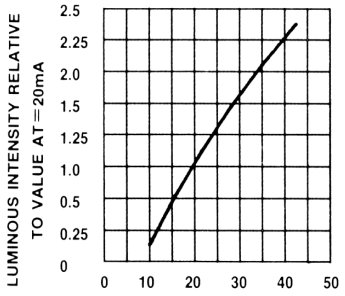
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



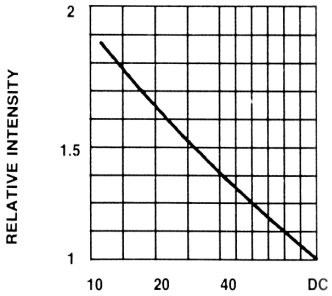
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



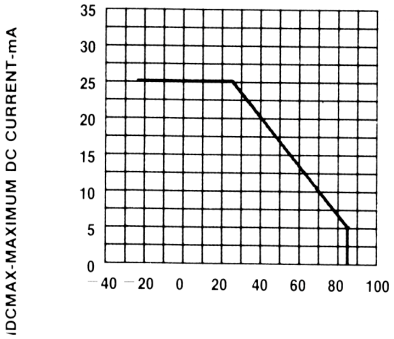
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



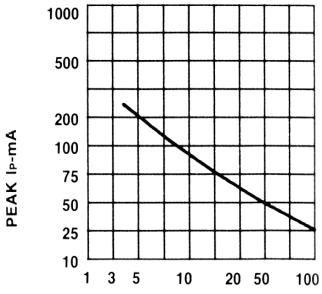
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



T_A AMBIENT TEMPERATURE C

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



DUTY CYCLE %

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

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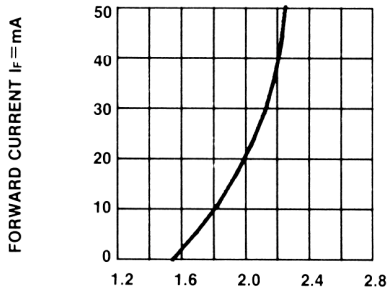
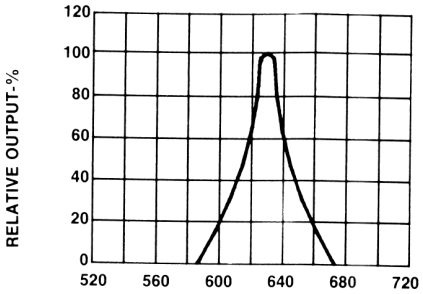
GRAPHICAL DATA High Efficiency Red(T_A = 25°C, unless otherwise specified)



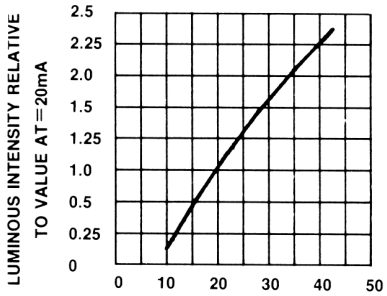
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



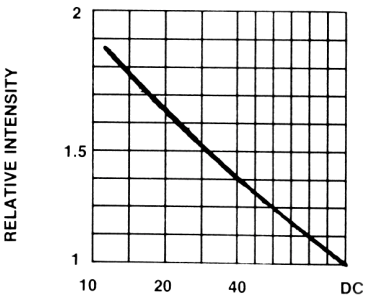
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



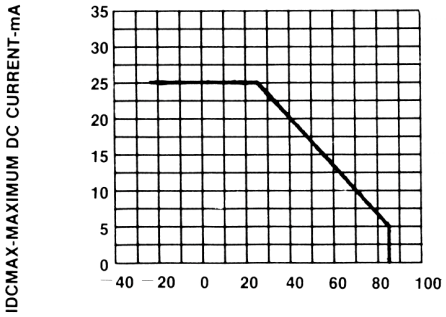
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



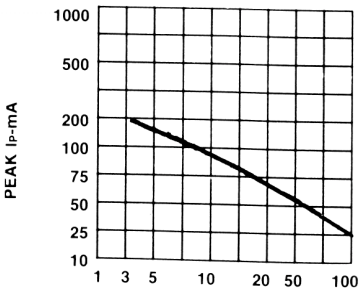
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



T_A AMBIT 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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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.