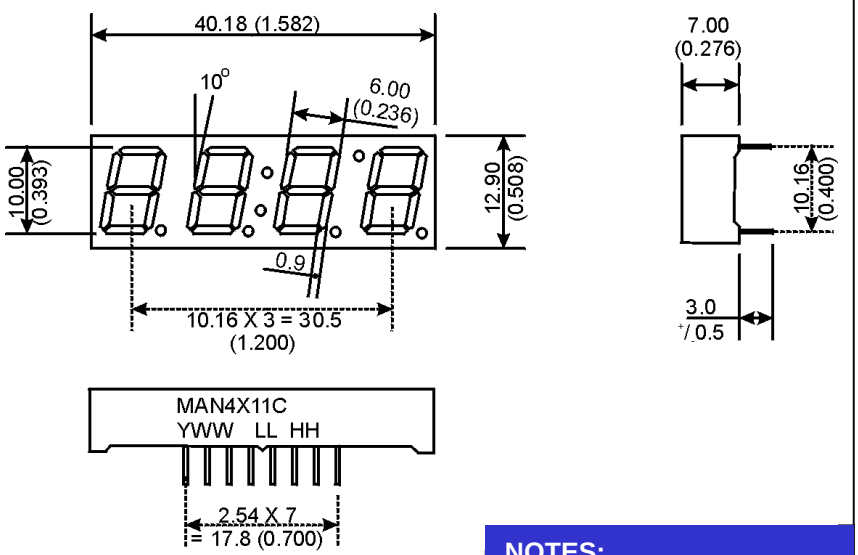
FAIRCHILD
SEMICONDUCTOR™

0.4 Inch (10.2mm) 4 Digit CLOCK STICK DISPLAY

Bright Red MSQC4111C
High Efficiency Red MSQC4911C
Green MSQC4411C

TR/QTS/030800-001

PACKAGE DIMENSIONS



NOTES:

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

FEATURES

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

APPLICATIONS

- Appliances
- Automotive
- Instrumentation
- Process Control

MODELS AVAILABLE

Part Number	Colour	Description
MSQC4111C	Bright Red	Four Digit, 12/24 hour Clock Display, CA
MSQC4411C	Green	Four Digit, 12/24 hour Clock Display, CA
MSQC4911C	High Efficiency Red	Four Digit, 12/24 hour Clock Display, CA

(For other colour/polarity 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	MSQC411C	MSQC4411C	MSQC4910C	Units
Continuous Forward Current (each segment)	15	25	25	mA
Peak Forward Current (F = 10KHz, D/F = 1/10)	60	100	90	mA
Power Dissipation (P_D)	40	75	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	MSQC4111C	MSQC4411C	MSQC4911C	Units	Test Condition
Luminous intensity[2] (I_V)					
Minimum (Standard Current)	300	800	800	ucd	I_F = 20mA
Typical (Standard Current)	700	2000	2000	ucd	I_F = 20mA
Minimum (Low Current)	Not Available				
Typical (Low Current)	Not Available				
Forward Voltage (V_F)					
Typical (Standard Current)	2.10	2.10	2.00	Volts	I_F = 20mA
Maximum (Standard Current)	2.80	2.80	2.80	Volts	I_F = 20mA
Typical (Low Current)	Not Available				
Maximum (Low Current)	Not Available				
Peak Wavelength	695	570	635	nm	I_F = 20mA
Dominant Wavelength	Not Available				
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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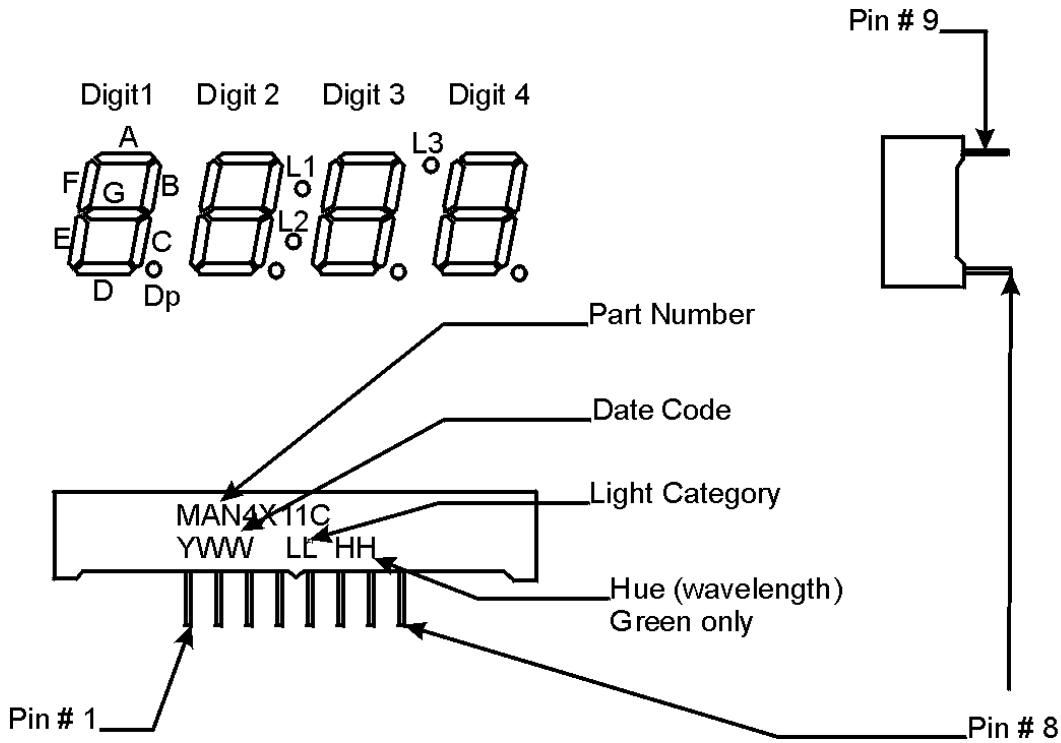
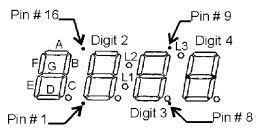
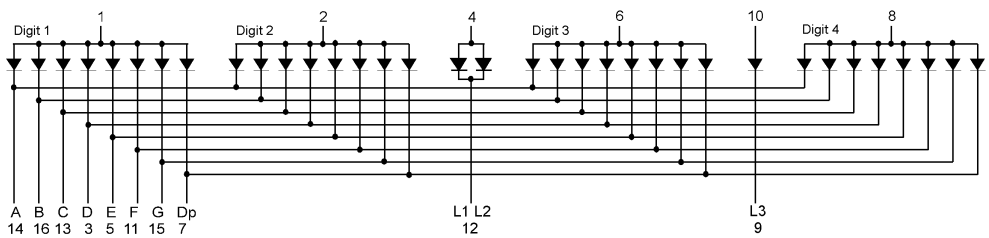
PIN ORIENTATION, SEGMENT IDENTIFICATION, AND PRODUCT MARKING



SCHEMATICS





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

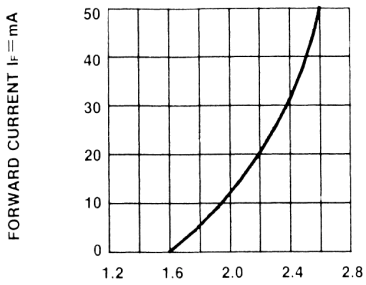


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

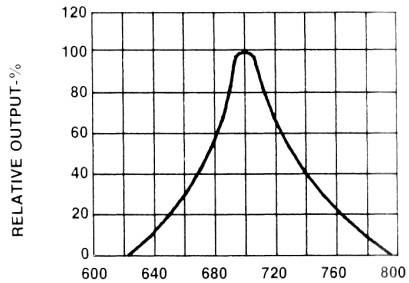


Fig.2 SPECTRAL RESPONSE

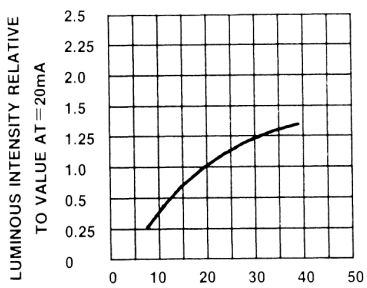


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

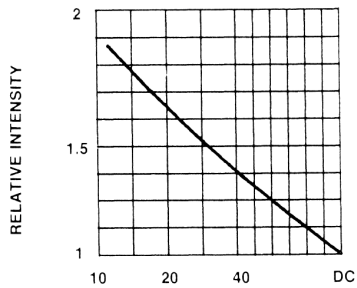


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

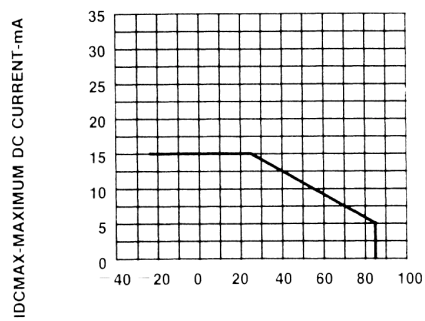


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

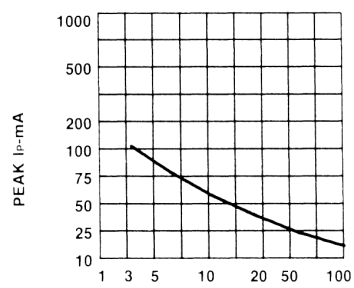


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f = 1 KHz)

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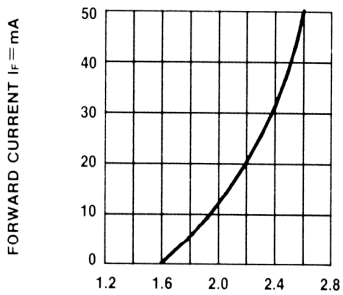
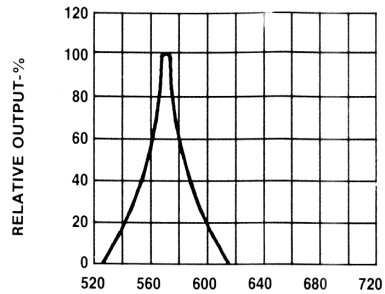
GRAPHICAL DATA Green (T_A = 25°C, unless otherwise specified)



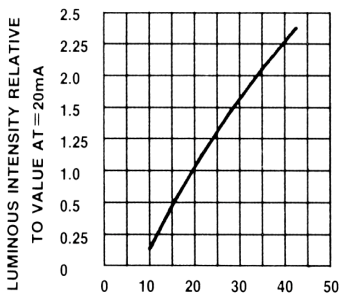
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



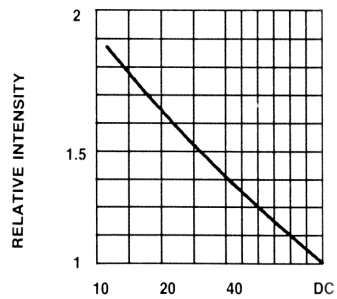
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



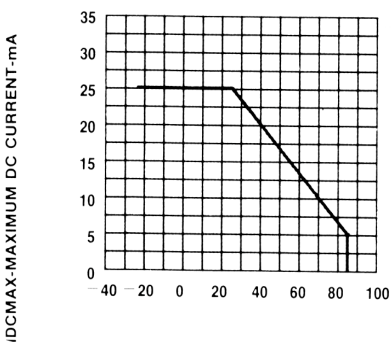
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



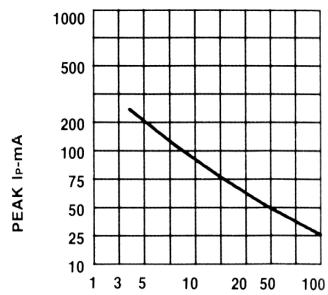
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

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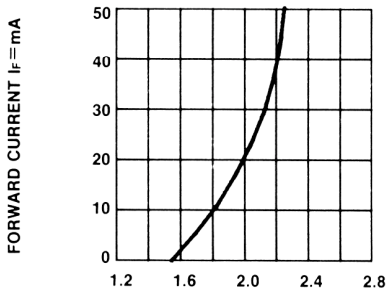
GRAPHICAL DATA High Efficiency Red(T_A = 25°C, unless otherwise specified)



FORWARD VOLTAGE (V_F)-VOLTS

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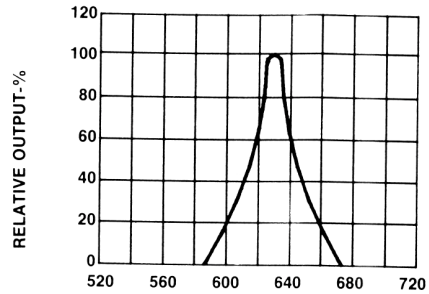
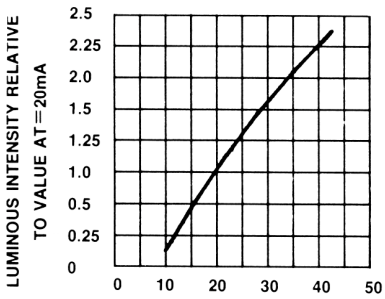


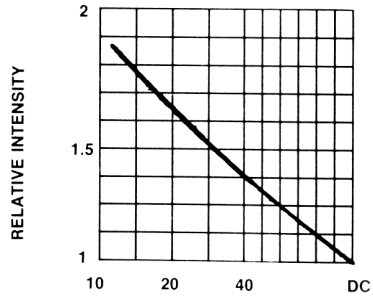
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



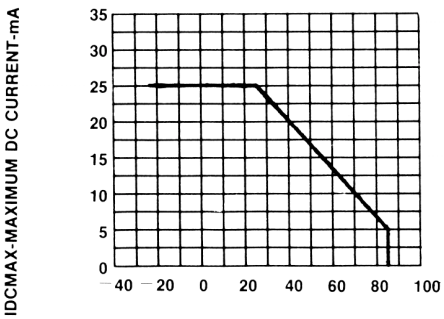
I_F-FORWARD CURRENT-mA

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

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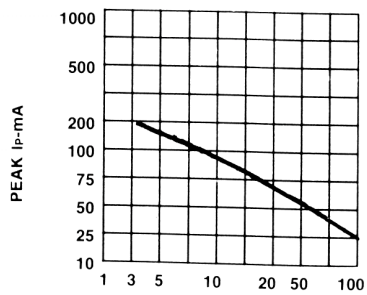

DUTY CYCLE %

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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.