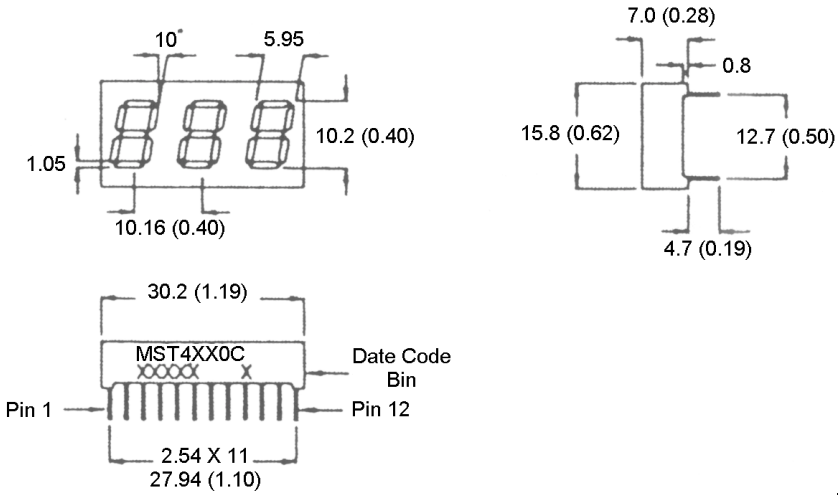
FAIRCHILD
SEMICONDUCTOR™

10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

Bright Red MST4110C, MST4140C
High Efficiency Red MST4910C, MST4940C
Green MST4410C, MST4440C

TR/QTS/030100-001

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
MST4110C	Bright Red	Three Digit, RHDP, Common Anode
MST4140C	Bright Red	Three Digit, RHDP, Common Cathode
MST4410C	Green	Three Digit, RHDP, Common Anode
MST4440C	Green	Three Digit, RHDP, Common Cathode
MST4910C	High Efficiency Red	Three Digit, RHDP, Common Anode
MST4Y40C	High Efficiency Red	Three Digit, RHDP, Common Cathode

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

FAIRCHILD
SEMICONDUCTOR™

10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

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

Part Number / Parameter	MST4110C MST4140C	MST4410C MST4440C	MST4910C MST4940C	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)

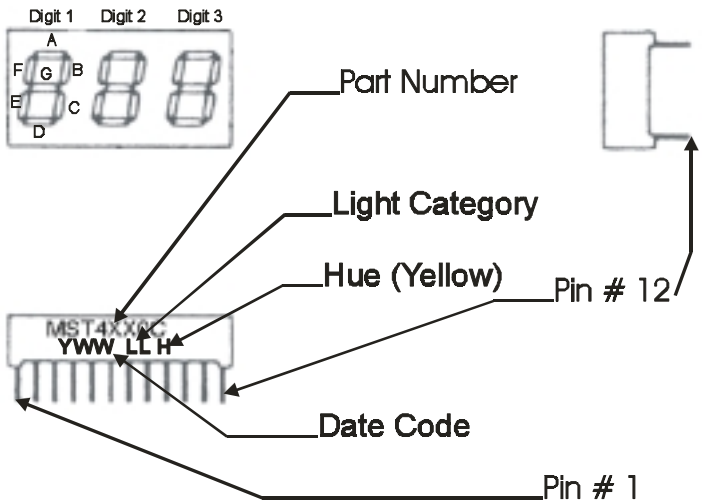
Part Number / Parameter	MST4110C MST4140C	MST4410C MST4440C	MST4910C MST4940C	Units	Test Condition
Luminous intensity[2] (I_V)					
Minimum (Standard Current)	320	850	800	ucd	I_F = 20mA
Typical (Standard Current)	800	2200	2200	ucd	I_F = 20mA
Minimum (Low Current)	Not Available				
Typical (Low Current)	Not Available				
Forward Voltage (V_F)					
Typical (Standard Current)	2.10	2.10	2.00	Volts	I_F = 20mA
Maximum (Standard Current)	2.60	2.80	2.80	Volts	I_F = 20mA
Typical (Low Current)	Not Available				
Maximum (Low Current)	Not Available				
Peak Wavelength	697	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

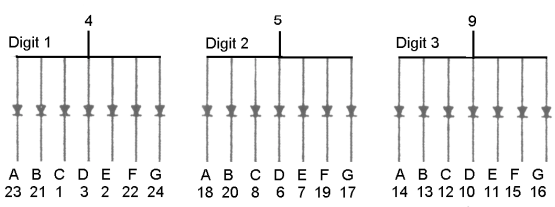
FAIRCHILD
SEMICONDUCTOR™

10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

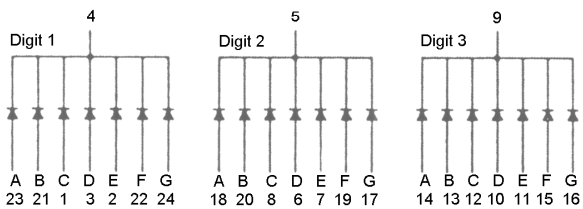
PIN ORIENTATION, SEGMENT IDENTIFICATION, AND PRODUCT MARKING



SCHEMATICS



MST4XX0C Common Anode

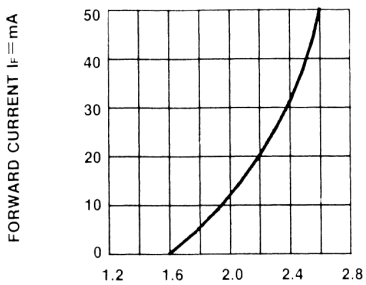


MST4XX0C Common Cathode

FAIRCHILD
SEMICONDUCTOR™

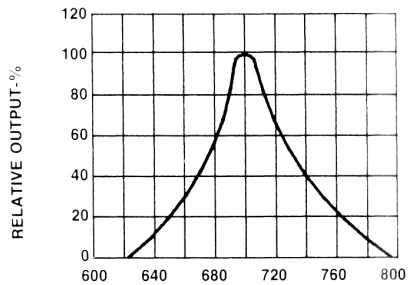
10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

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



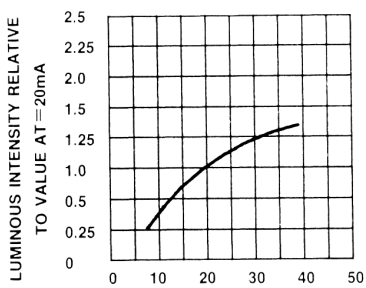
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



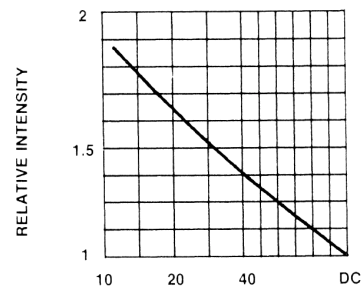
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



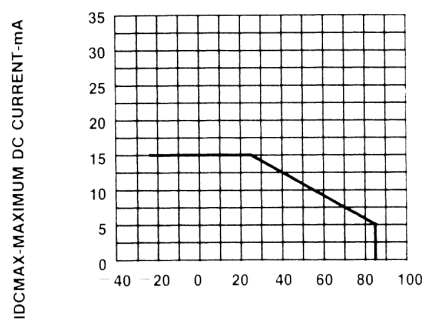
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



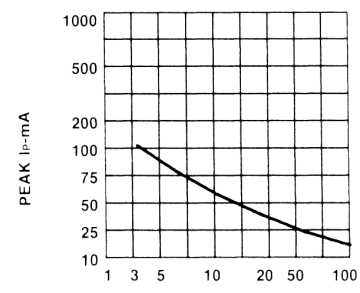
DUTY CYCLE % PER SEGMENT (AVERAGE I_F = 10mA)

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



T_A AMBIENT TEMPERATURE C

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



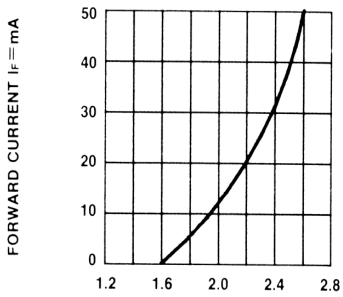
DUTY CYCLE %

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

FAIRCHILD
SEMICONDUCTOR™

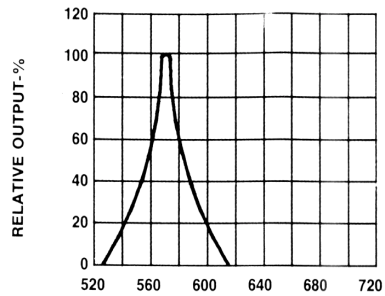
10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

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



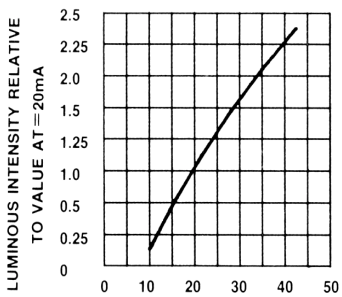
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



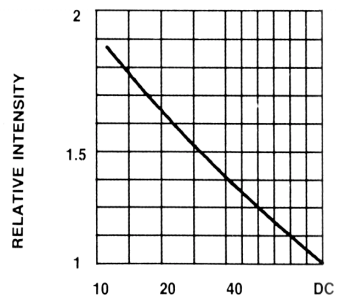
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



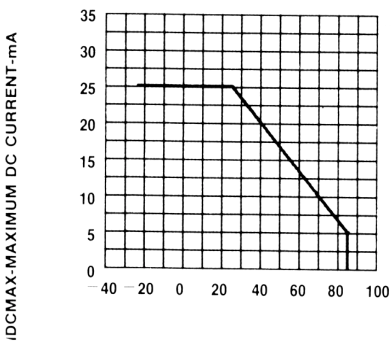
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



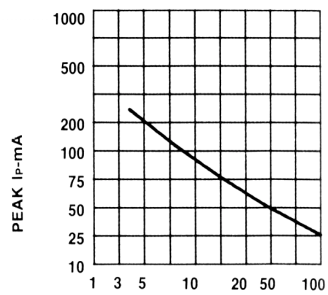
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

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.



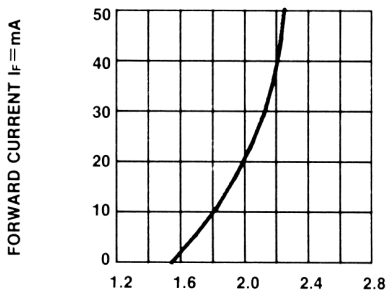
DUTY CYCLE %

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

FAIRCHILD
SEMICONDUCTOR™

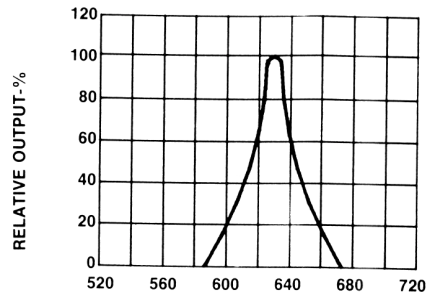
10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

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



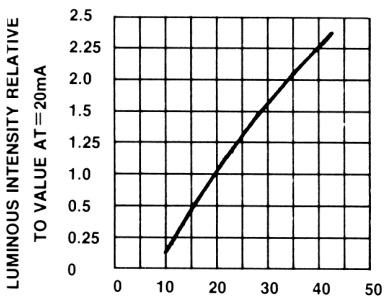
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



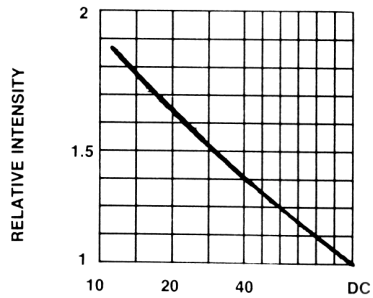
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



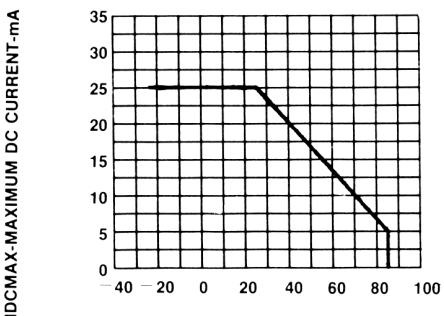
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



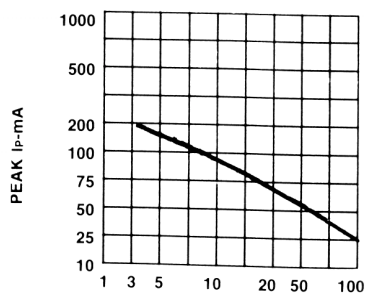
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

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)

FAIRCHILD
SEMICONDUCTOR™

10mm (0.400 inch) Three Digit NUMERIC STICK DISPLAY

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.