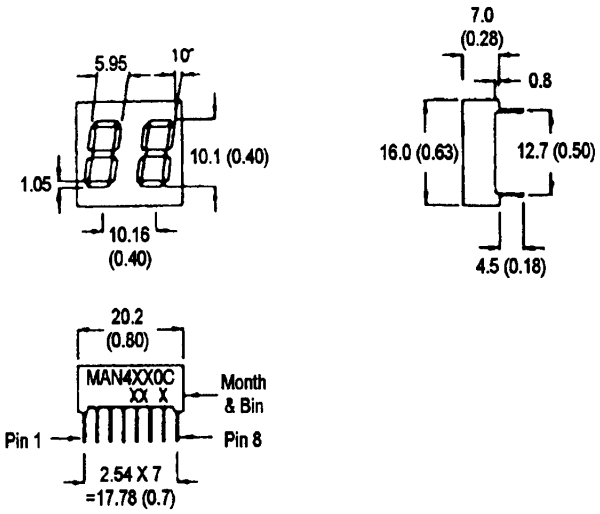
FAIRCHILD
SEMICONDUCTOR™

0.4 INCH (10.1MM) TWO DIGIT STICK DISPLAY

BRIGHT RED MSD4110C, MSD4140C
GREEN MSD4410C, MSD4440C
HIGH EFF. RED MSD4910C, MSD4940C

PACKAGE DIMENSIONS



FEATURES

Easy to read digits.
2 digit common anode or cathode.
Low power consumption.
Bold segments that are highly visible.
High brightness with high contrast
White segments on a grey face.
Directly compatible with integrated circuits.
Rugged plastic/epoxy construction.

APPLICATIONS

Digital readout displays.
Instrument panels.

NOTES: Dimensions are in mm (inch).
All pins are 0.5 (0.02) diameter
Tolerances are ± 0.25 (0.1) unless otherwise noted.

MODEL NUMBERS

Part number	Color	Description
MSD4110C	Bright Red	2 Digit, Common Anode.
MSD4140C	Bright Red	2 Digit, Common Cathode.
MSD4410C	Green	2 Digit, Common Anode.
MSD4440C	Green	2 Digit, Common Cathode.
MSD4910C	High Eff. Red	2 Digit, Common Anode.
MSD4940C	High Eff. Red	2 Digit, Common Cathode.

(For other color options, contact your local area Sales Office)

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ABSOLUTE MAXIMUM RATING (T_A=25°C unless otherwise specified)

Part number	B.Red MST 4110C 4140C	Green MST 4410C 4440C	High Eff. Red MST 4910C 4940C	Unit
Continuous forward current (I_f)				
Per Segment.....	15	25	25	mA
Peak forward current per die (I_f)..... (at f = 10.0 KHz, Duty factor = 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/°C

Reverse voltage per dice.....5V

Operating and Storage temperature range.....- 40°C to +85°C

Lead soldering time (at 1/16 inch from the bottom of lamp).....5 seconds @ 230°C

ELECTRO - OPTICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Part number	B. Red MST 4110C 4140C	Green MST 4410C 4440C	High Eff. Red MST 4910C 4940C	Test Condition
Luminous intensity (ucd)				
minimum	320	850	800	I_f = 20 mA
typical	800	2200	2200	I_f = 20 mA
Forward voltage (V_f)				
typical	2.1	2.1	2.0	I_f = 20 mA
maximum	2.6	2.8	2.8	I_f = 20 mA
Peak wavelength (nm)	697	570	635	I_f = 20 mA
Spectral line half width (nm)	90	30	45	I_f = 20 mA
Reverse breakdown voltage (V_R)	5	5	5	I_R = 100 uA

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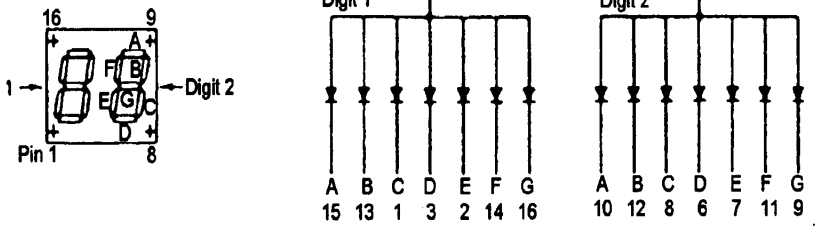
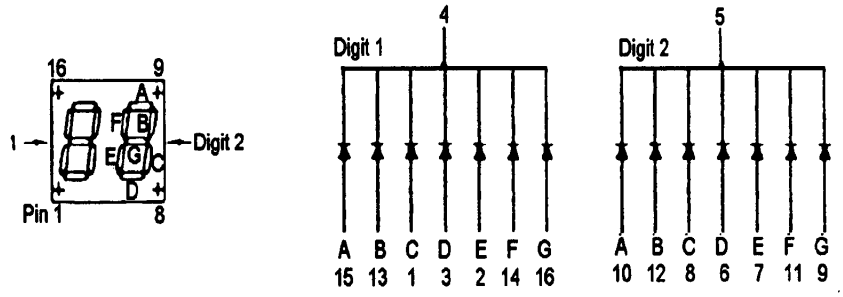
PINOUT

MSD4X10C - Common Anode



MSD4X40C - Common Cathode



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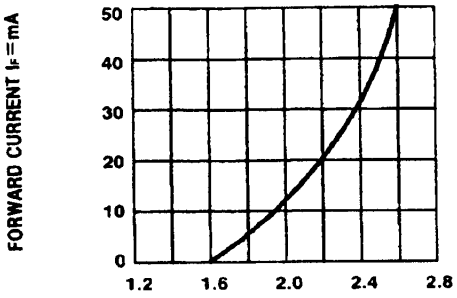
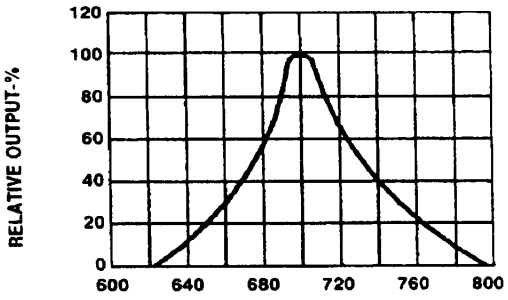
0.4 INCH (10.1MM) TWO DIGIT STICK DISPLAY

GRAPHICAL DETAIL - Bright Red (T_A = 25°C unless otherwise specified)



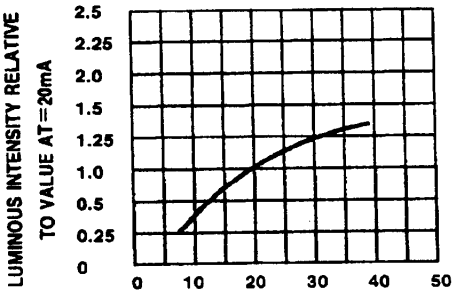
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



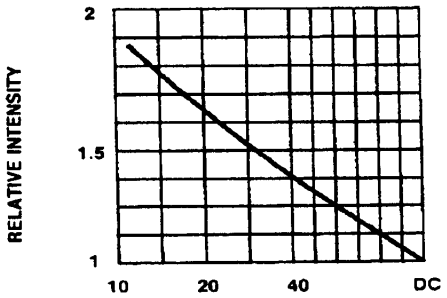
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



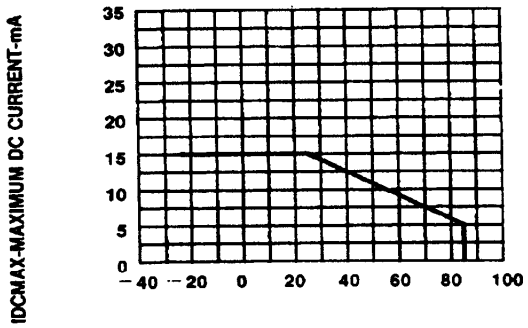
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



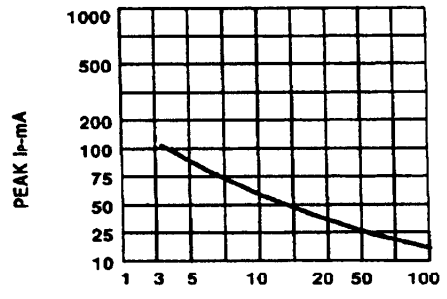
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



T_A 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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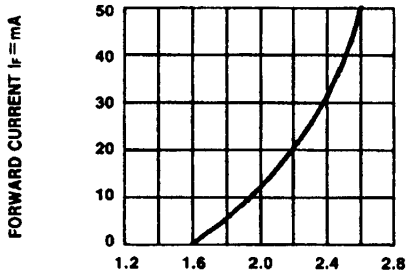
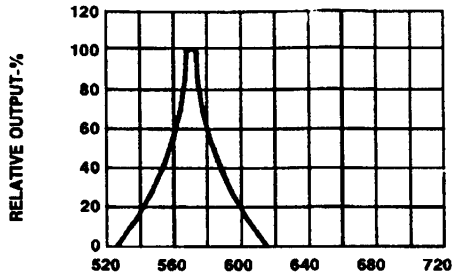
0.4 INCH (10.1MM) TWO DIGIT STICK DISPLAY

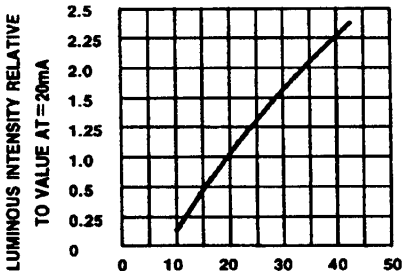
GRAPHICAL DETAIL - Green (T_A = 25°C unless otherwise specified)



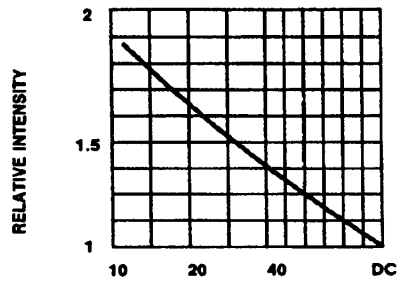
FORWARD VOLTAGE (VF)-VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



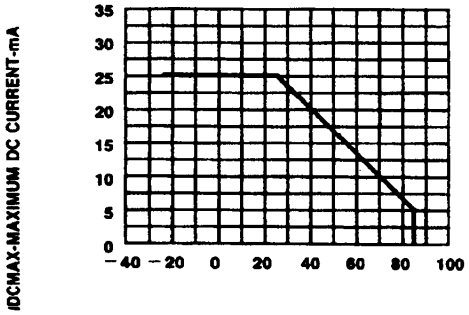
WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



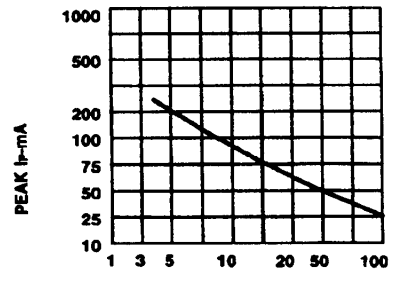
IF-FORWARD CURRENT-mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



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 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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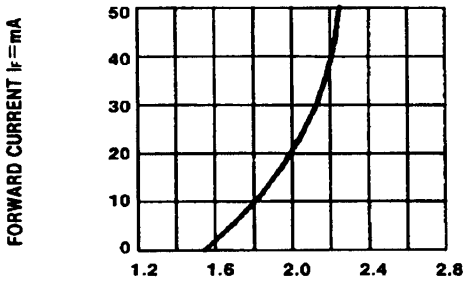
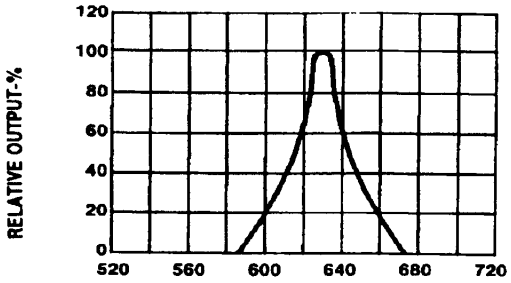
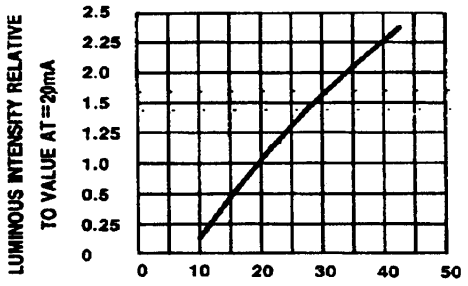
GRAPHICAL DETAIL - High Efficiency Red (T_A = 25°C unless otherwise specified)



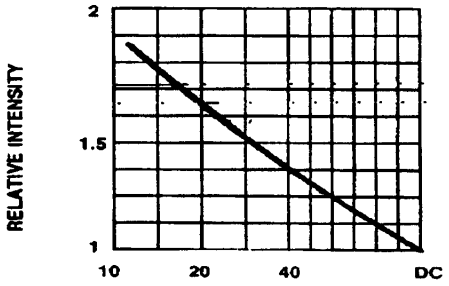
FORWARD VOLTAGE (V_F)-VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



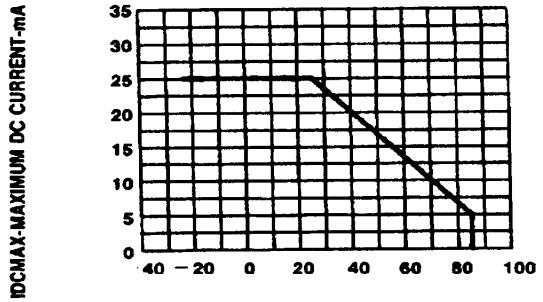
WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



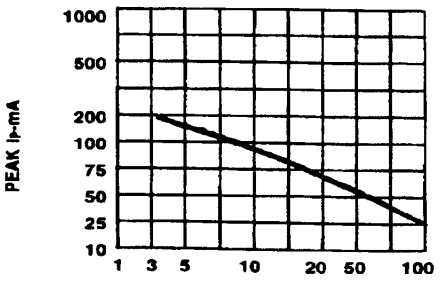
I_F-FORWARD CURRENT-mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)
Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



T_A 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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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.