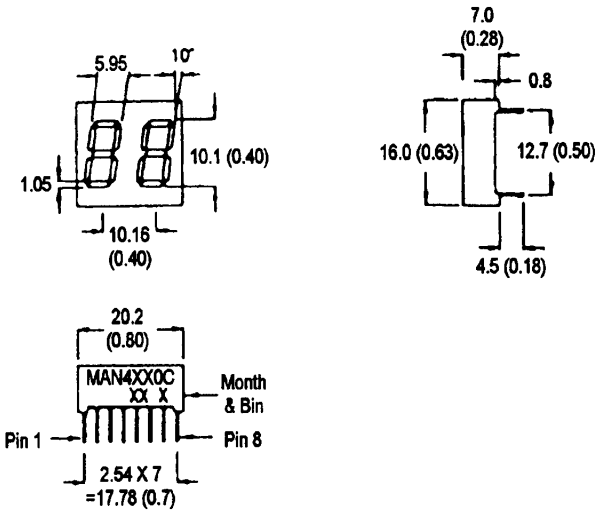
FAIRCHILD
SEMICONDUCTOR™

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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0.4 INCH (10.1MM) THREE DIGIT STICK DISPLAY

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)

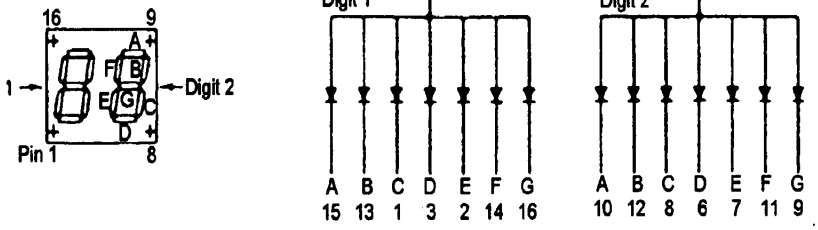
Part number	B. Red MST 4110C 4140C	Green MST 4410C 4440C	High Eff. Red MST 4910C 4940C	Test Condition
Luminous intensity (ucd)				
minimum	320	850	800	I_f = 20 mA
typical	800	2200	2200	I_f = 20 mA
Forward voltage (V_f)				
typical	2.1	2.1	2.0	I_f = 20 mA
maximum	2.6	2.8	2.8	I_f = 20 mA
Peak wavelength (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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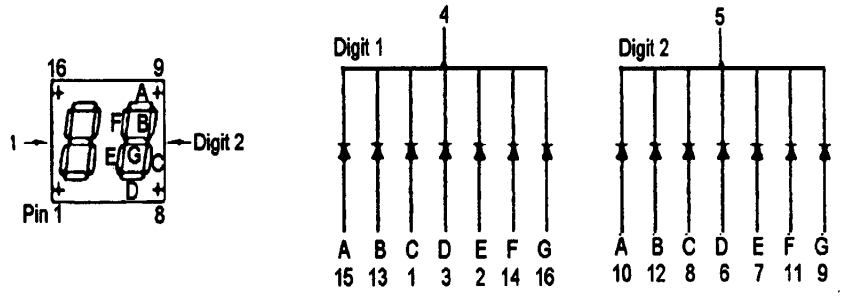
0.4 INCH (10.1MM)
TWO DIGIT STICK DISPLAY

PINOUT

MSD4X10C - Common Anode



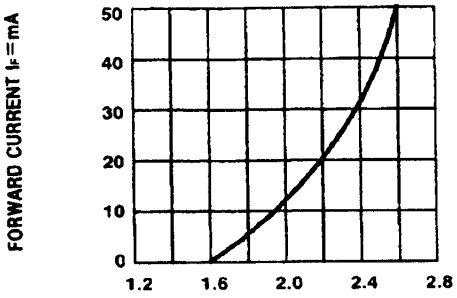
MSD4X40C - Common Cathode



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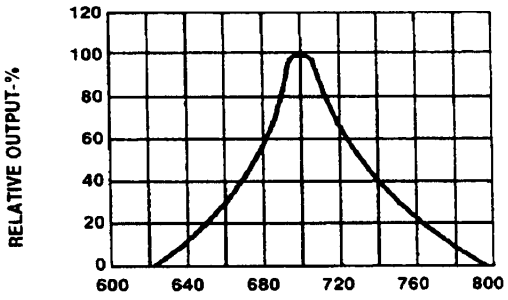
0.4 INCH (10.1MM) TWO DIGIT STICK DISPLAY

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



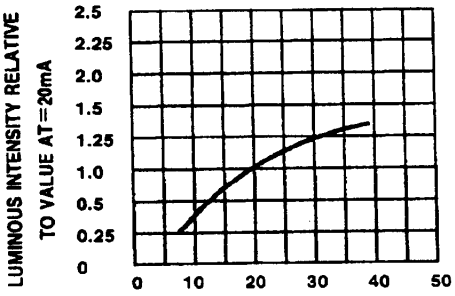
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



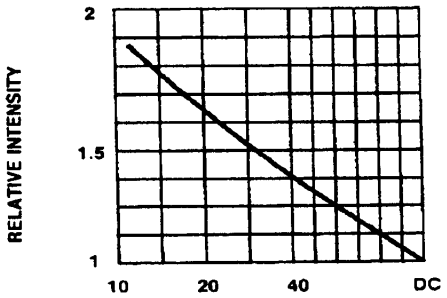
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



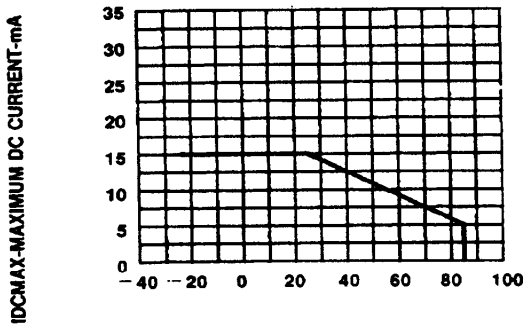
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



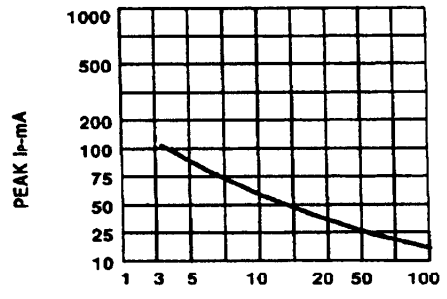
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

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.



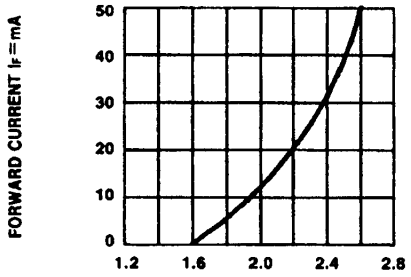
DUTY CYCLE %

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

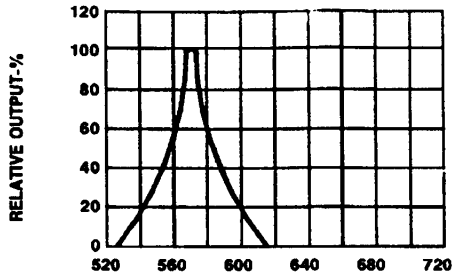
FAIRCHILD
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0.4 INCH (10.1MM) TWO DIGIT STICK DISPLAY

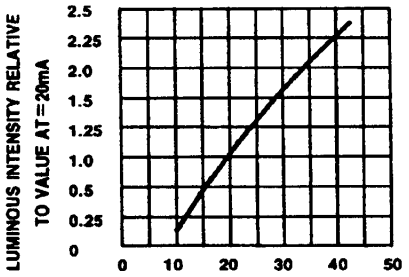
GRAPHICAL DETAIL - Green (T_A = 25°C unless otherwise specified)



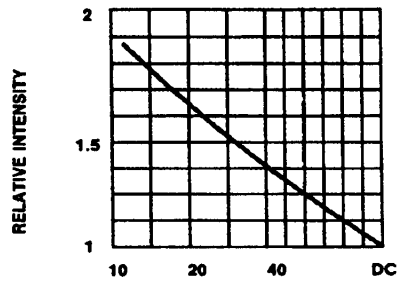
FORWARD VOLTAGE (VF)-VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



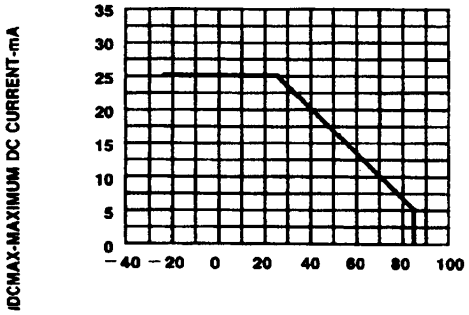
WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



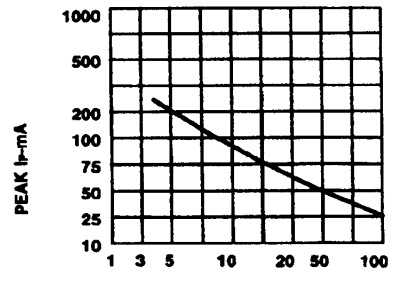
IF-FORWARD CURRENT-mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



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.

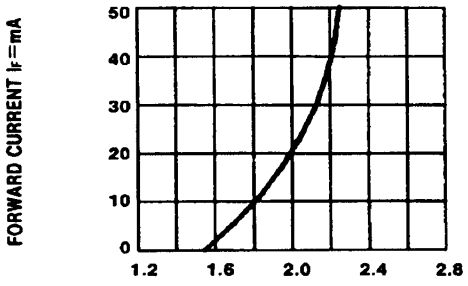


DUTY CYCLE %
Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE f=1 KHz)

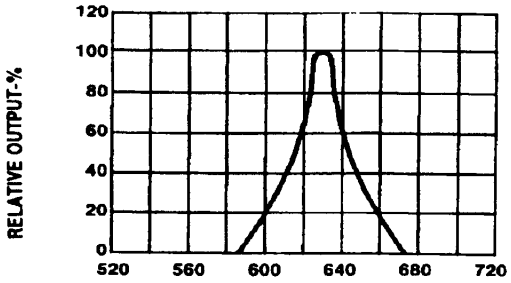
FAIRCHILD
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0.4 INCH (10.1MM) TWO DIGIT STICK DISPLAY

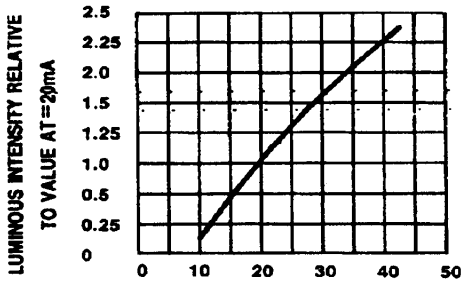
GRAPHICAL DETAIL - High Efficiency Red (T_A = 25°C unless otherwise specified)



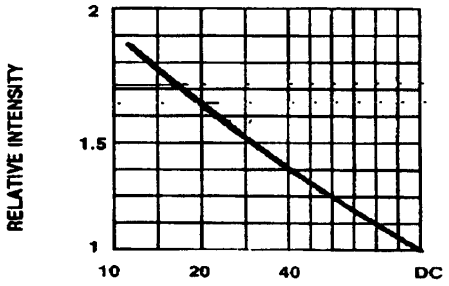
FORWARD VOLTAGE (V_F)-VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



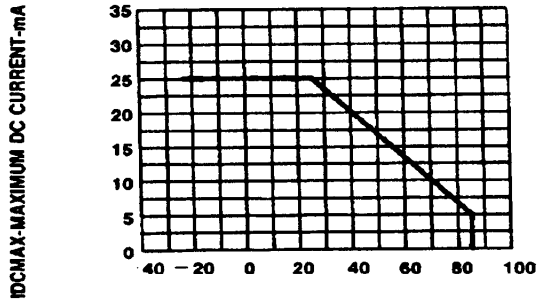
WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



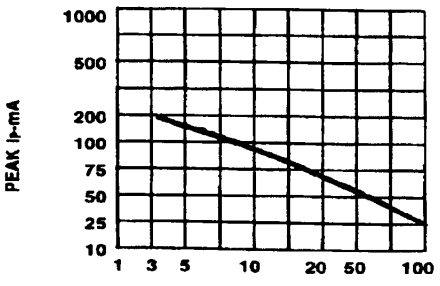
I_F-FORWARD CURRENT-mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



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)

FAIRCHILD
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0.4 INCH (10.1MM) TWO DIGIT STICK DISPLAY

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