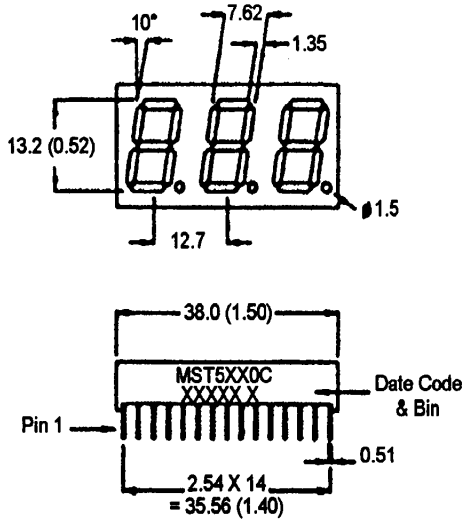
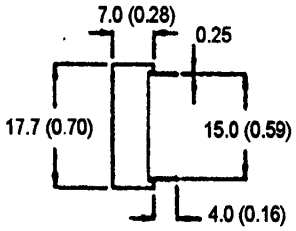
FAIRCHILD
SEMICONDUCTOR™

0.52 INCH (13.2MM) THREE DIGIT STICK DISPLAY

BRIGHT RED MST5150C, MST5160C
GREEN MST5450C, MST5460C
HIGH EFF. RED MST5950C, MST5960C

PACKAGE DIMENSIONS





FEATURES

- Easy to read digits.
- 3 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
MST5150C	Bright Red	3 Digit, Common Anode, RHDP.
MST5160C	Bright Red	3 Digit, Common Cathode, RHDP.
MST5450C	Green	3 Digit, Common Anode, RHDP.
MST5460C	Green	3 Digit, Common Cathode, RHDP.
MST5950C	High Eff. Red	3 Digit, Common Anode, RHDP.
MST5960C	High Eff. Red	3 Digit, Common Cathode, RHDP.

(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 5150C 5160C	Green MST 5450C 5460C	High Eff. Red MST 5950C 5960C	Unit
Continuous forward current (I_f)				
Per Segment.....	15	25	25	mA
Peak forward current per die (I_f)..... (at f = 10 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.....- 25°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 5150C 5160C	Green MST 5450C 5460C	High Eff. Red MST 5950C 5960C	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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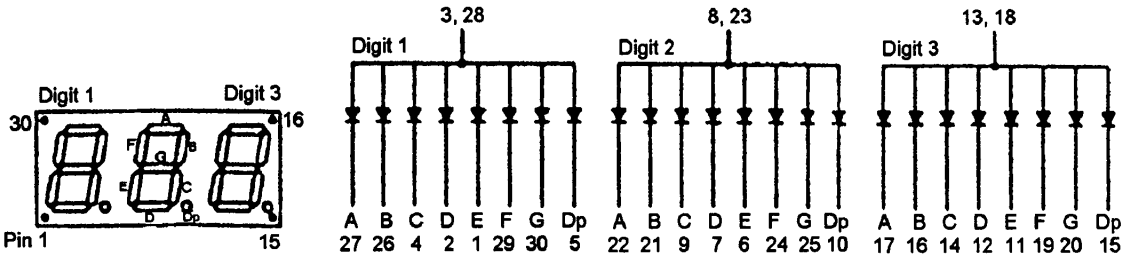
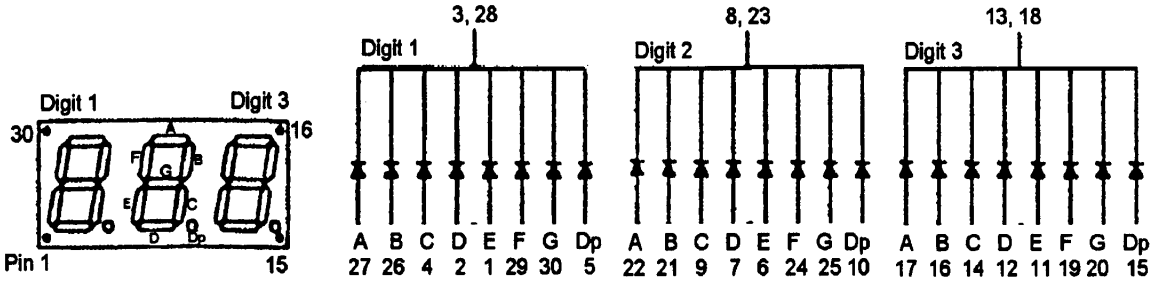
THREE DIGIT STICK DISPLAY

PINOUT

MST5X50C - Common Anode



MST5X60C - Common Cathode



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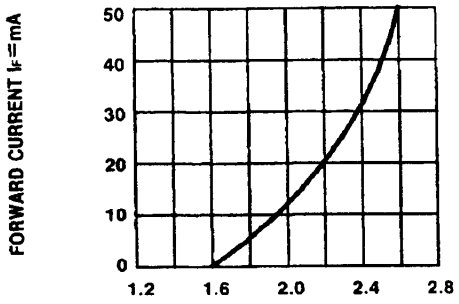
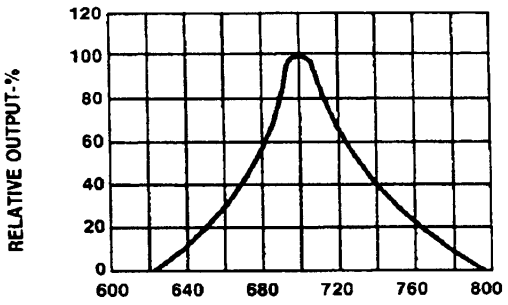
0.52 INCH (13.2MM) THREE DIGIT STICK DISPLAY

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



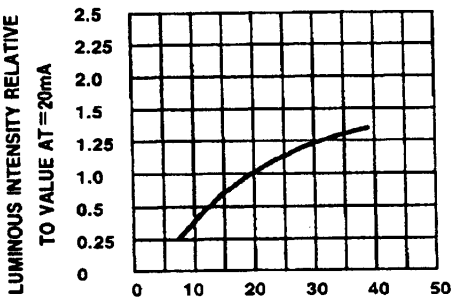
FORWARD VOLTAGE (V_F)-VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



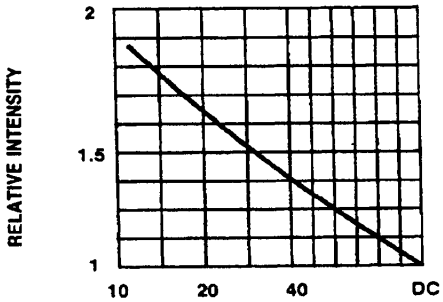
WAVELENGTH (λ)-nm

Fig.2 SPECTRAL RESPONSE



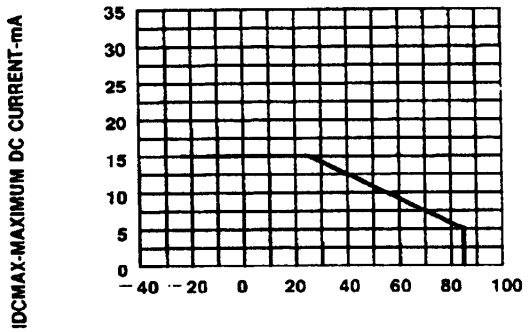
I_F-FORWARD CURRENT-mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



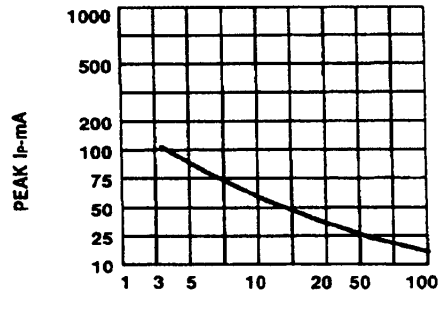
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

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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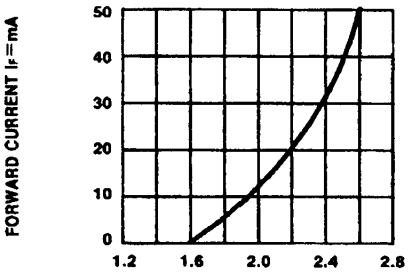
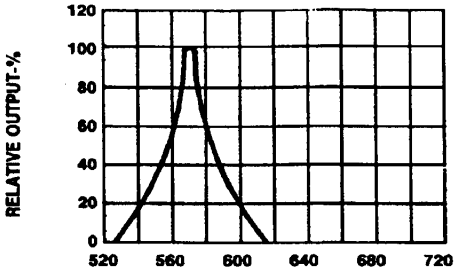
0.52 INCH (13.2MM) THREE DIGIT STICK DISPLAY

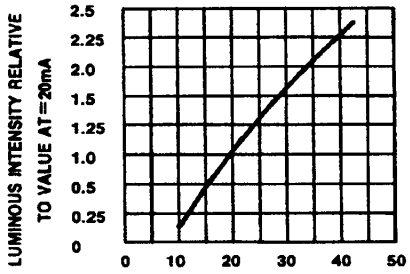
GRAPHICAL DETAIL: Green (T_A = 25°C unless otherwise specified)



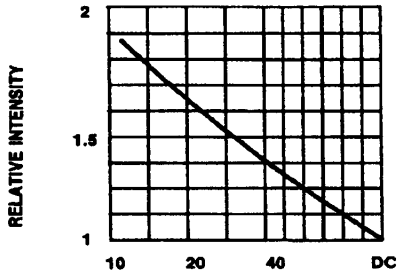
FORWARD VOLTAGE (VF)-VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



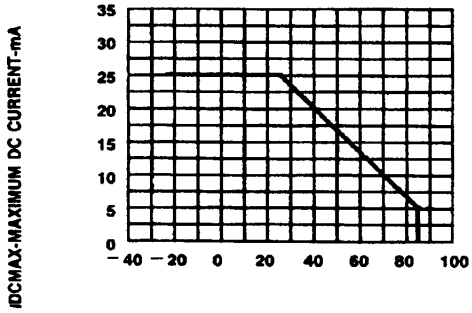
WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



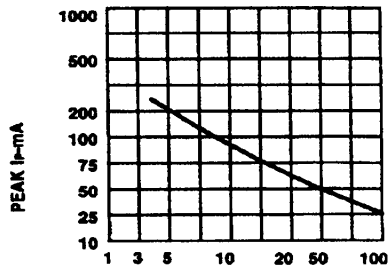
IF-FORWARD CURRENT-mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



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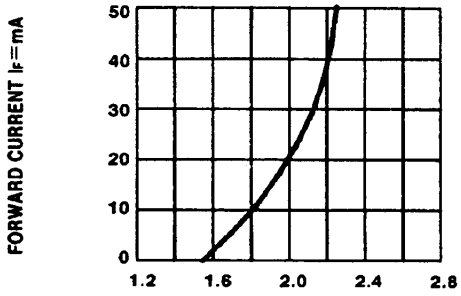
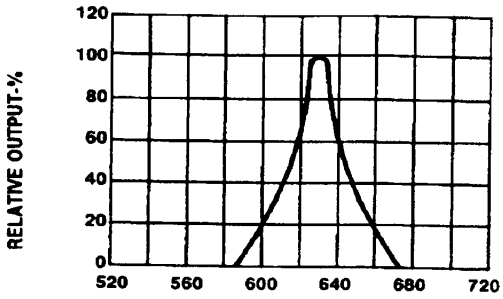
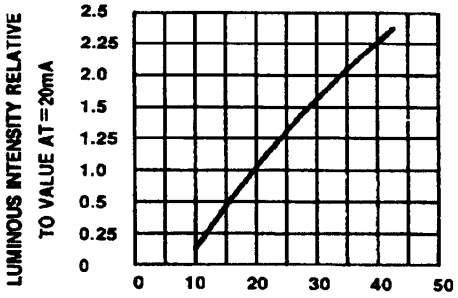
GRAPHICAL DETAIL: High Efficiency Red (T_A = 25°C unless otherwise specified)



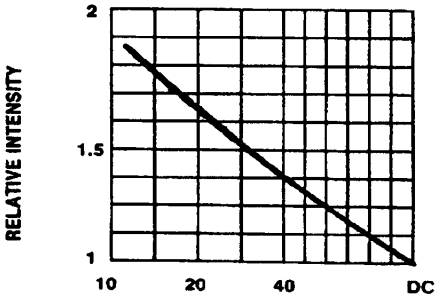
FORWARD VOLTAGE (V_F)-VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.



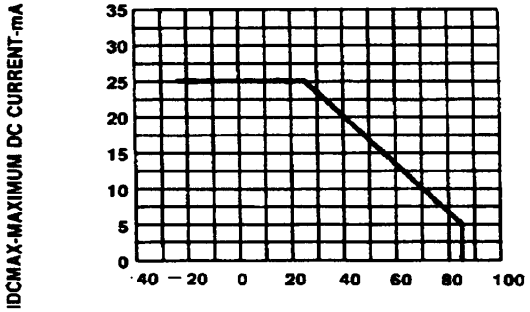
WAVELENGTH (λ)-nm
Fig.2 SPECTRAL RESPONSE



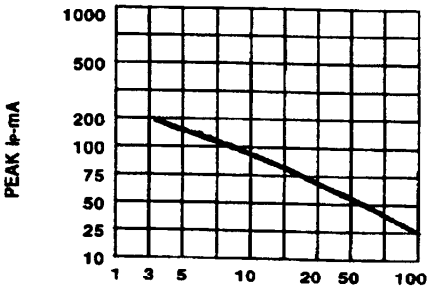
I_F-FORWARD CURRENT-mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



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.