

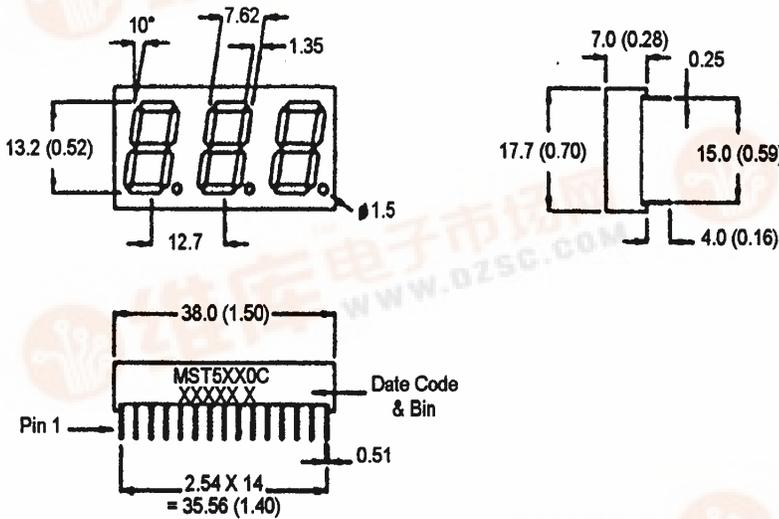
# FAIRCHILD

## 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).



**ABSOLUTE MAXIMUM RATING** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

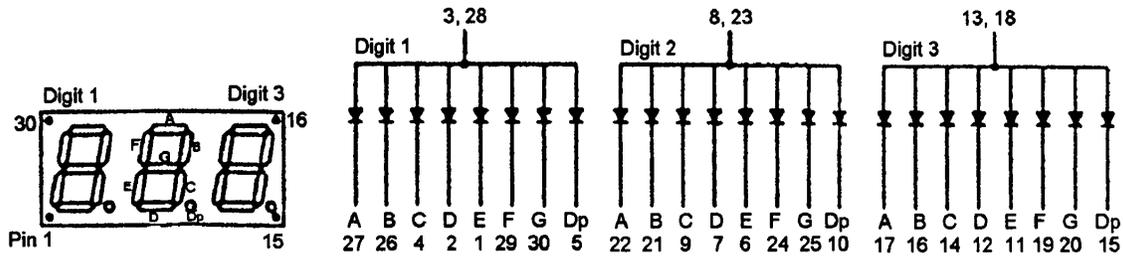
	B.Red MST 5150C 5160C	Green MST 5450C 5460C	High Eff. Red MST 5950C 5960C	Unit
Part number				
Continuous forward current ( $I_f$ )				
Per Segment.....	15	25	25	mA
Peak forward current per die ( $I_f$ ).....	60	90	90	mA
(at $f = 10$ KHz, Duty factor = 1/10)				
Power dissipation ( $P_D$ ).....	40*	70*	70*	mW
*Derate Linearly from $25^\circ\text{C}$ .....	0.17	0.33	0.33	mW/ $^\circ\text{C}$
Reverse voltage per dice.....				5V
Operating and Storage temperature range.....				- $25^\circ\text{C}$ to $+85^\circ\text{C}$
Lead soldering time (at 1/16 inch from the bottom of lamp).....				5 seconds @ $230^\circ\text{C}$

**ELECTRO - OPTICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

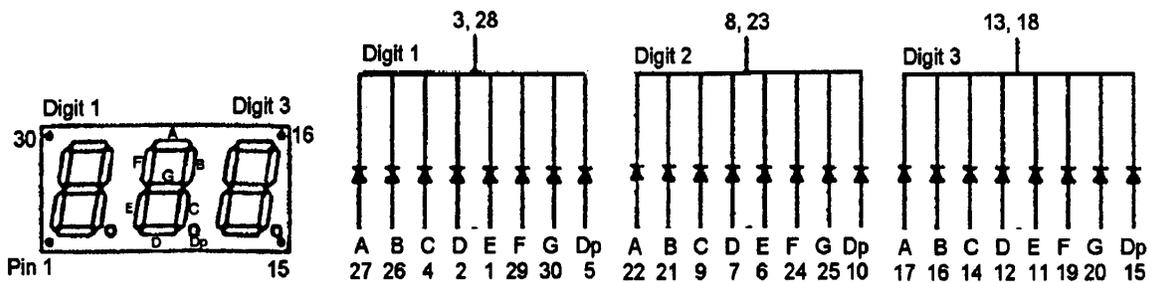
	B. Red MST 5150C 5160C	Green MST 5450C 5460C	High Eff. Red MST 5950C 5960C	Test Condition
Part number				
Luminous intensity (ucd)				
minimum	320	850	800	$I_f = 20$ mA
typical	800	2200	2200	$I_f = 20$ mA
Forward voltage ( $V_f$ )				
typical	2.1	2.1	2.0	$I_f = 20$ mA
maximum	2.6	2.8	2.8	$I_f = 20$ mA
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

**PINOUT**

**MST5X50C - Common Anode**



**MST5X60C - Common Cathode**



**GRAPHICAL DETAIL: Bright Red** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

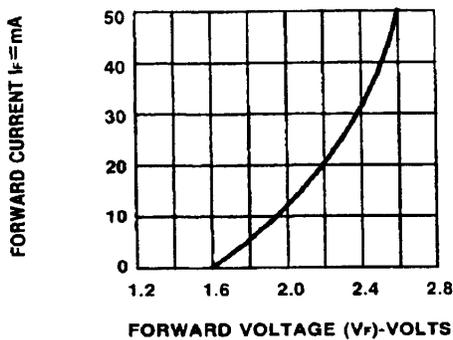


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

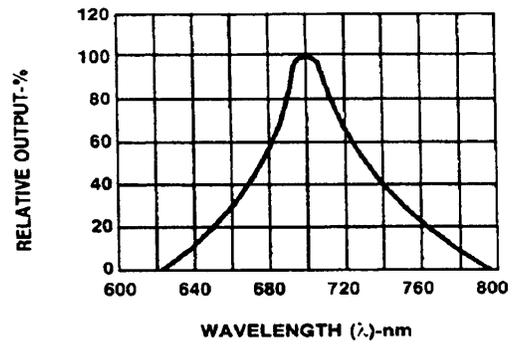


Fig.2 SPECTRAL RESPONSE

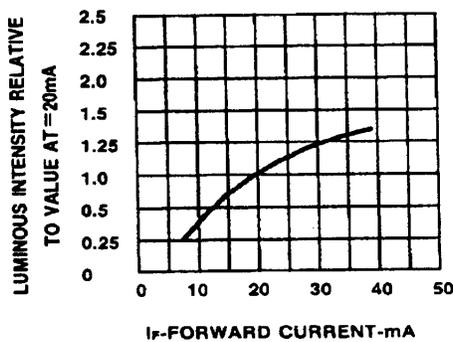


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

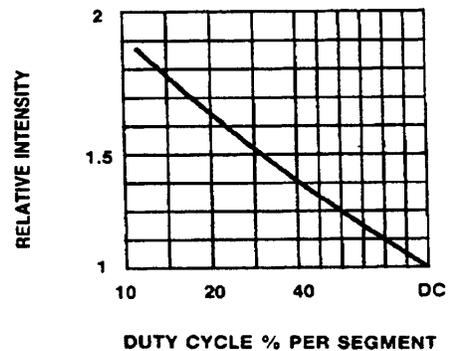


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

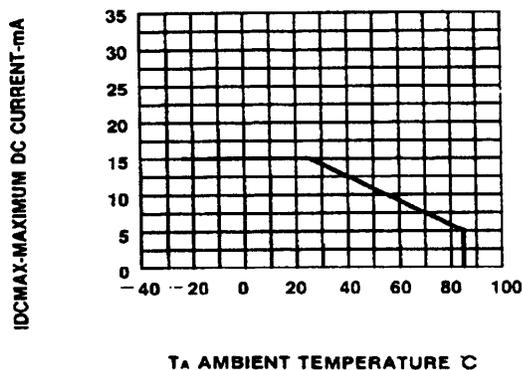


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

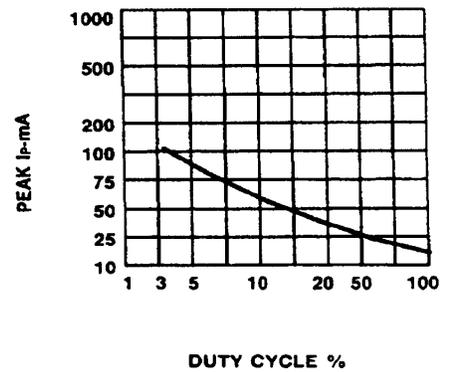


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f = 1\text{ KHz}$ )

**GRAPHICAL DETAIL: Green** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

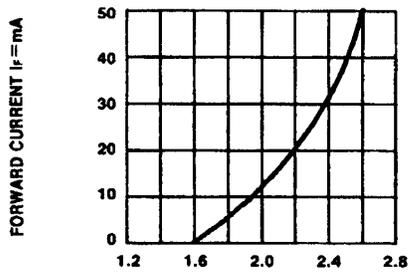


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

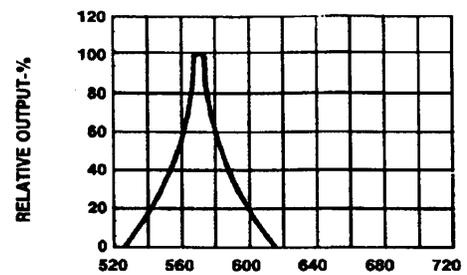


Fig.2 SPECTRAL RESPONSE

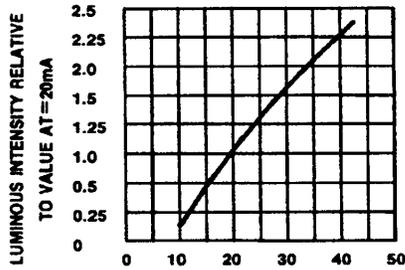


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

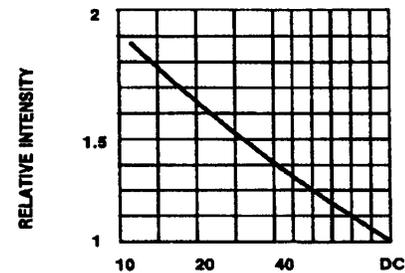


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

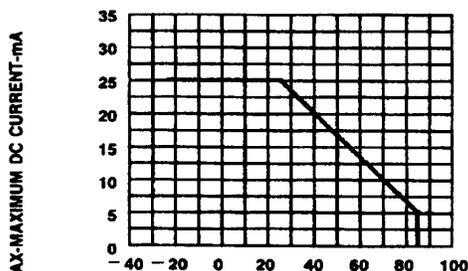


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

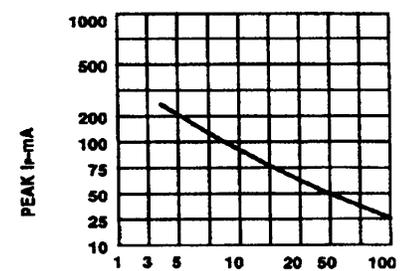


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f=1$  KHz)

**GRAPHICAL DETAIL: High Efficiency Red** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

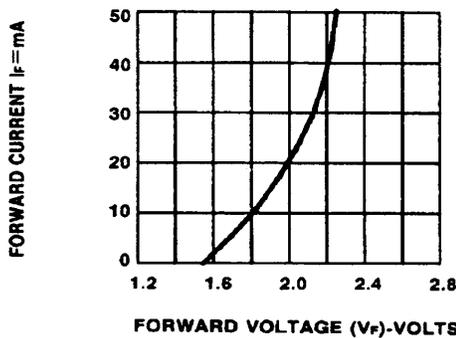


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

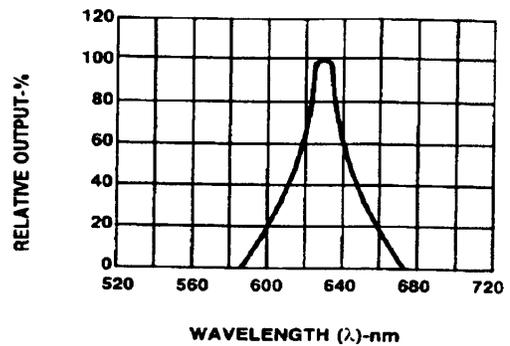


Fig.2 SPECTRAL RESPONSE

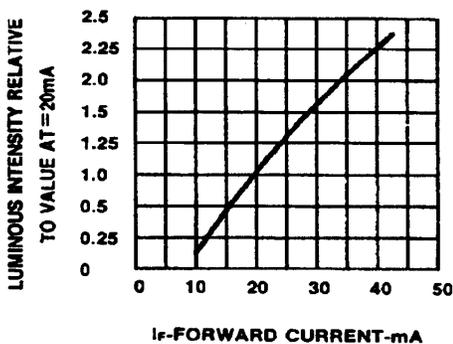


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

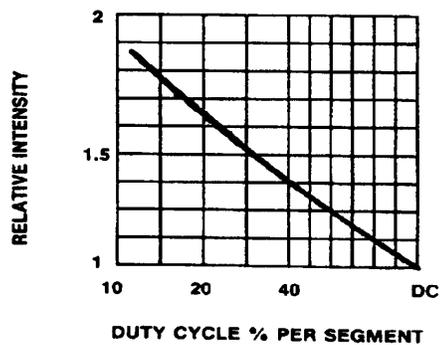


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



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

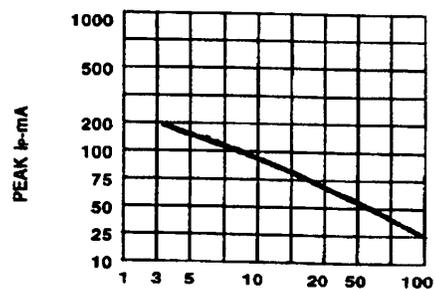


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f = 1\text{ KHz}$ )

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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.