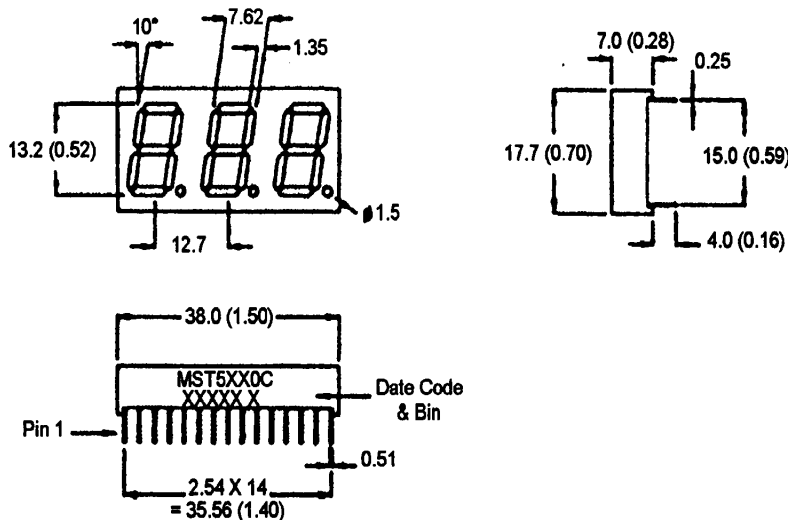


FAIRCHILD
SEMICONDUCTOR™

**0.52 INCH (13.2MM)
THREE DIGIT STICK DISPLAY**

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

PACKAGE DIMENSIONS



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

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.

MODEL NUMBERS

<u>Part number</u>	<u>Color</u>	<u>Description</u>
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)

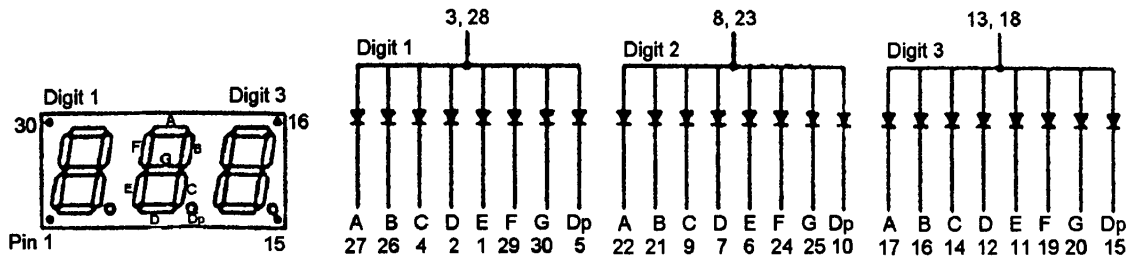
Part number	B.Red	Green	High Eff. Red	Unit
	MST	MST	MST	
	5150C	5450C	5950C	
	5160C	5460C	5960C	
Continuous forward current (I_f)				
Per Segment.....	15	25	25	mA
Peak forward current per die (I_p).....	60	90	90	mA
(at $f = 10$ KHz, Duty factor = 1/10)				
Power dissipation (P_D).....	40*	70*	70*	mW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

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

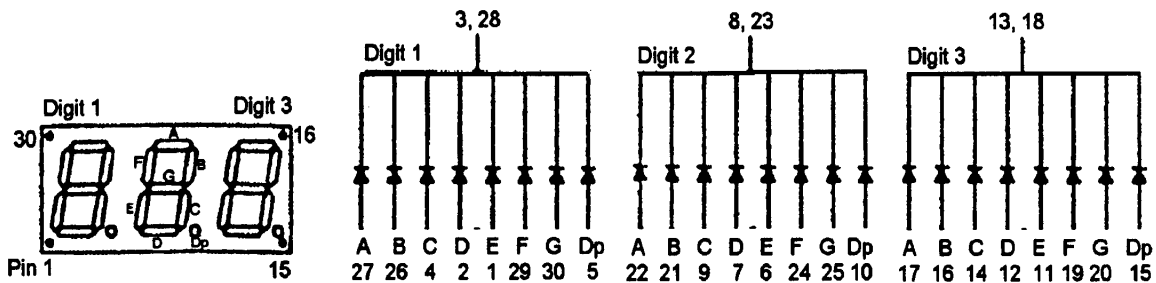
Part number	B. Red	Green	High Eff. Red	Test Condition
	MST	MST	MST	
	5150C	5450C	5950C	
	5160C	5460C	5960C	
Luminous intensity (ucd)				
minimum	320	850	800	$I_f = 20$ mA
typical	800	2200	2200	$I_f = 20$ mA
Forward voltage (V_f)				
typical	2.1	2.1	2.0	$I_f = 20$ mA
maximum	2.6	2.8	2.8	$I_f = 20$ mA
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	$I_r = 100$ μA

PINOUT

MST5X50C - Common Anode



MST5X60C - Common Cathode



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

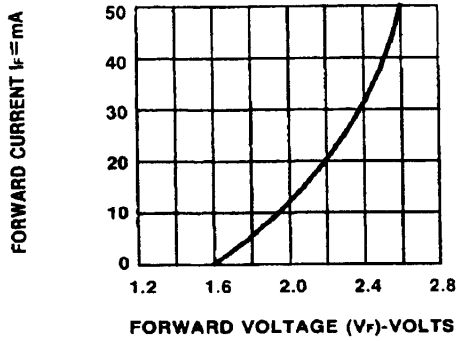


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

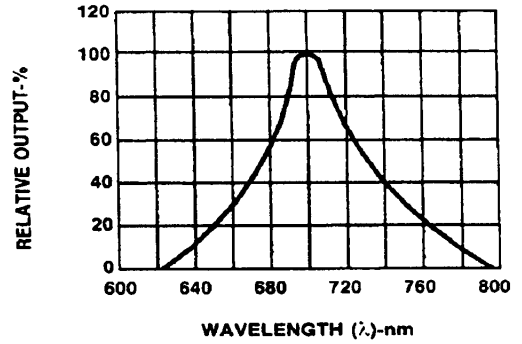


Fig.2 SPECTRAL RESPONSE

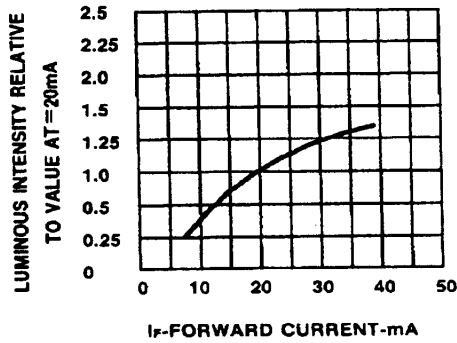


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

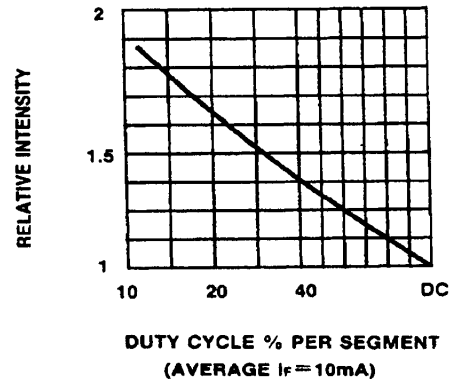


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

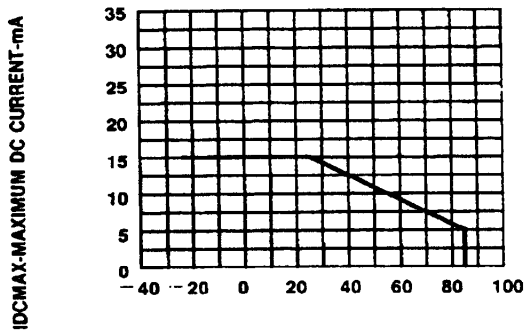


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

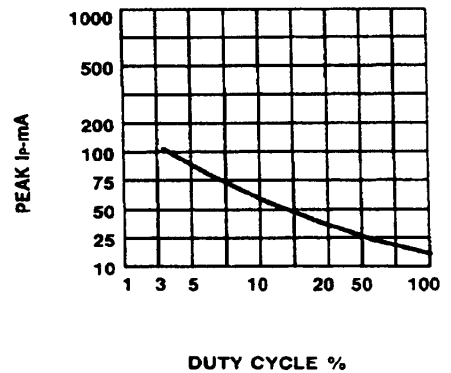


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f=1\text{ KHz}$)

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

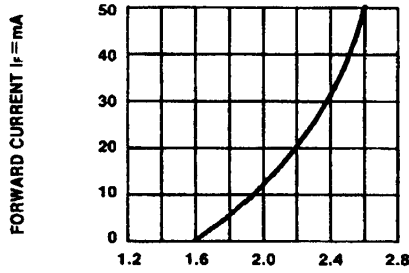


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

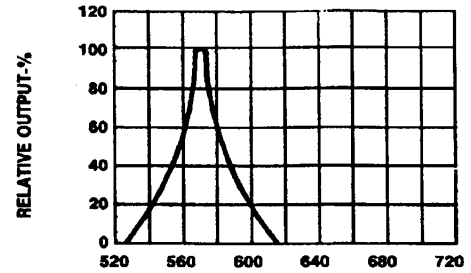


Fig.2 SPECTRAL RESPONSE

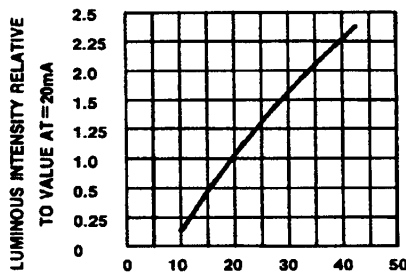


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

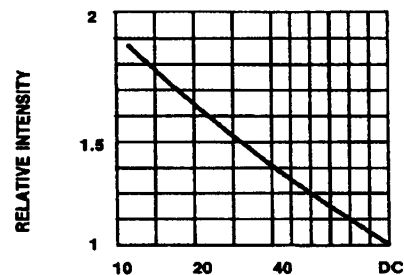


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

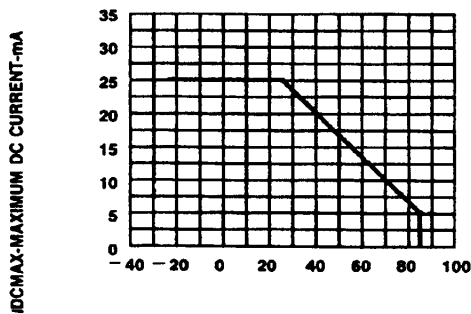


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

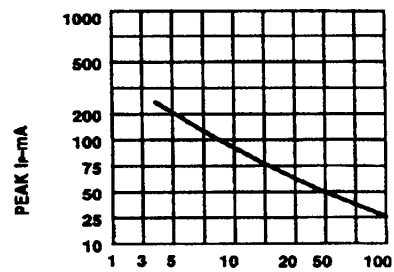


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f=1\text{ KHz}$)

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

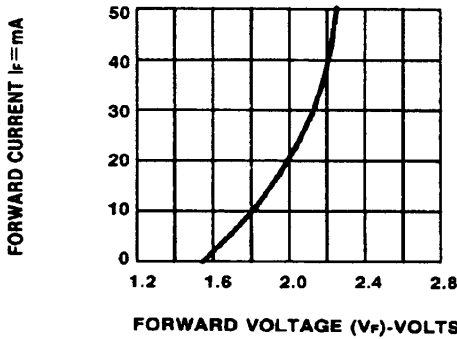


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

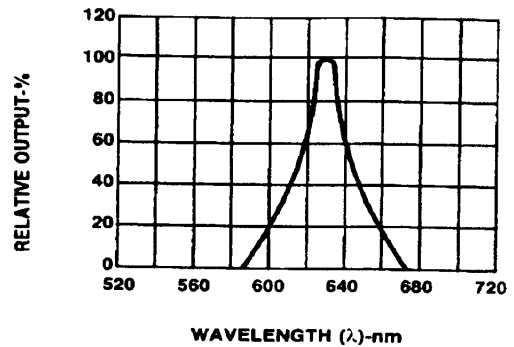


Fig.2 SPECTRAL RESPONSE

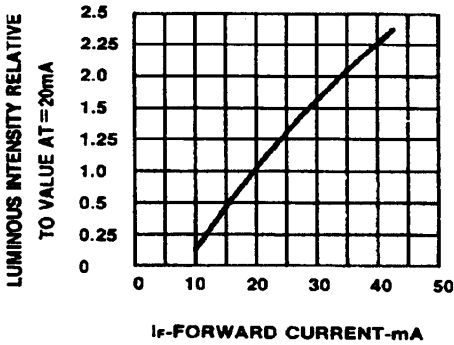


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

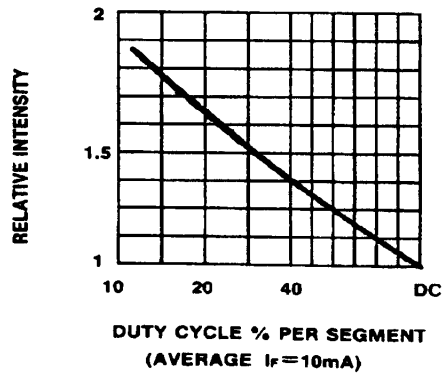


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

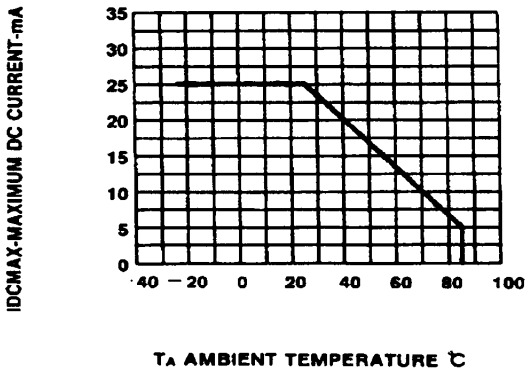


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

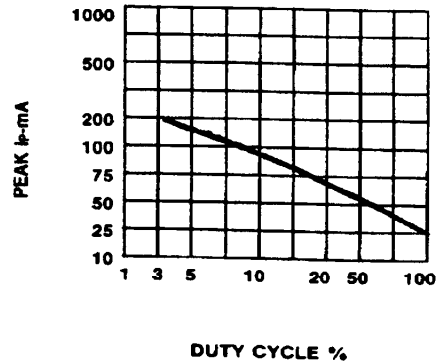


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f=1\text{ KHz}$)



0.52 INCH (13.2MM) THREE DIGIT STICK DISPLAY

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