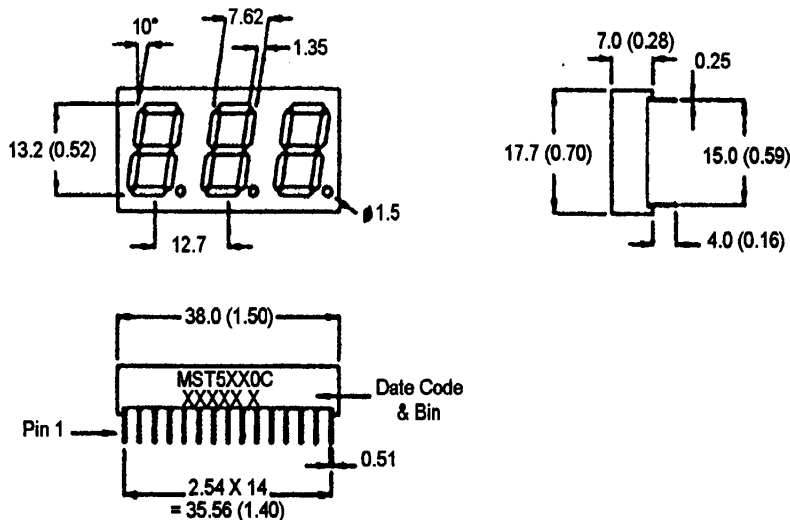


**0.52 INCH (13.2MM)
THREE DIGIT STICK DISPLAY**

**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)

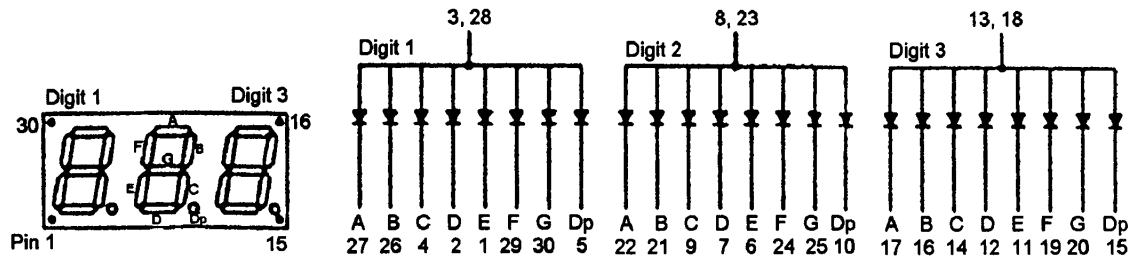
Part number	B.Red MST 5150C 5160C	Green MST 5450C 5460C	High Eff. Red MST 5950C 5960C	Unit
Continuous forward current (I_f)				
Per Segment.....	15	25	25	mA
Peak forward current per die (I_f)..... (at $f = 10\text{ KHz}$, Duty factor = 1/10)	60	90	90	mA
Power dissipation (P_D).....	40*	70*	70*	mW
*Derate Linearly from 25°C	0.17	0.33	0.33	mW/ $^{\circ}\text{C}$
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)

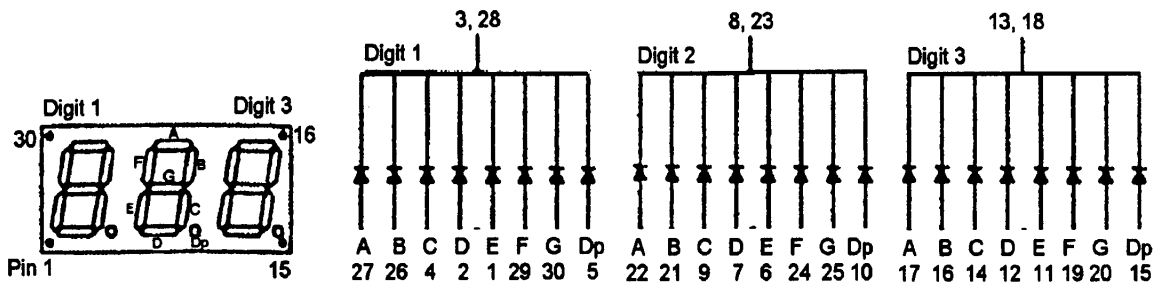
Part number	B. Red MST 5150C 5160C	Green MST 5450C 5460C	High Eff. Red MST 5950C 5960C	Test Condition
Luminous intensity (ucd)				
minimum	320	850	800	$I_f = 20\text{ mA}$
typical	800	2200	2200	$I_f = 20\text{ mA}$
Forward voltage (V_f)				
typical	2.1	2.1	2.0	$I_f = 20\text{ mA}$
maximum	2.6	2.8	2.8	$I_f = 20\text{ mA}$
Peak wavelength (nm)	697	570	635	$I_f = 20\text{ mA}$
Spectral line half width (nm)	90	30	45	$I_f = 20\text{ mA}$
Reverse breakdown voltage (V_R)	5	5	5	$I_R = 100\text{ uA}$

PINOUT

MST5X50C - Common Anode



MST5X60C - Common Cathode



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

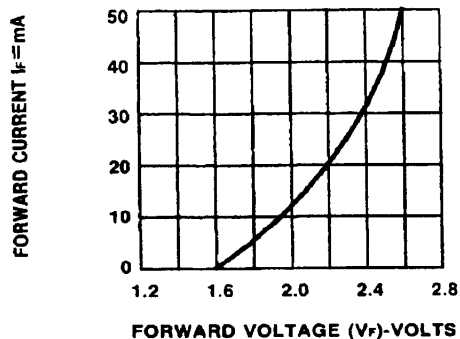


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

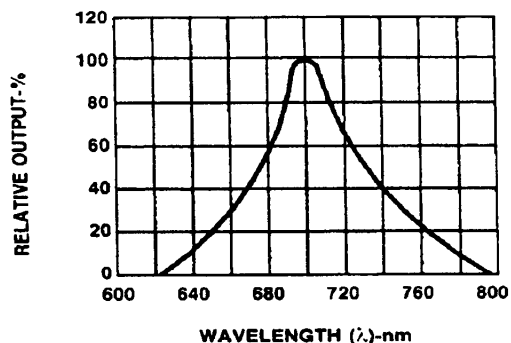


Fig.2 SPECTRAL RESPONSE

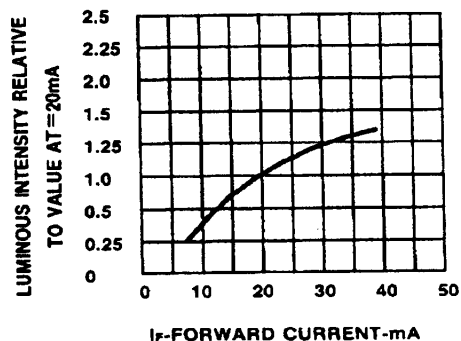


Fig.3 RELATIVE LUMINOUS INTENSITY
VS. FORWARD CURRENT

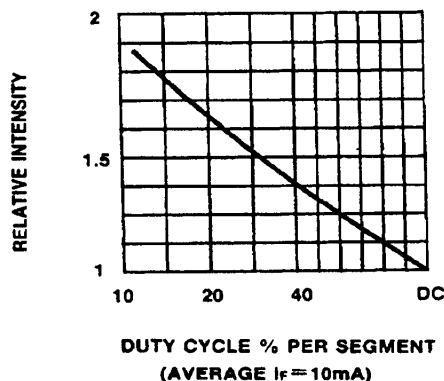


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

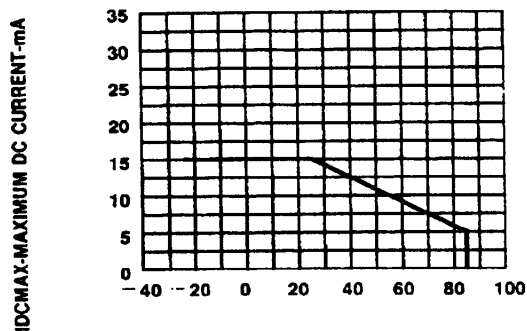


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER
SEGMENT VS. A FUNCTION OF AMBIENT
TEMPERATURE.

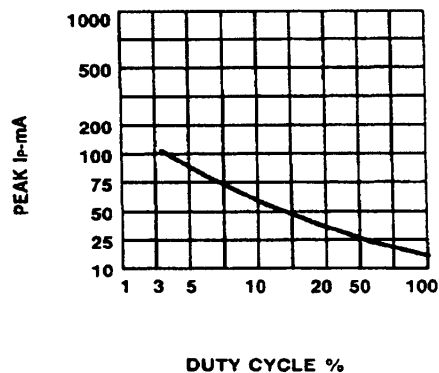


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE $f = 1 \text{ KHz}$)

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

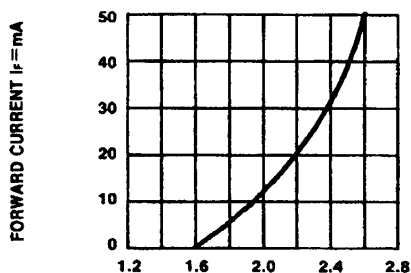


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

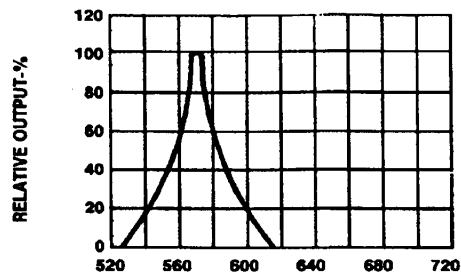


Fig.2 SPECTRAL RESPONSE

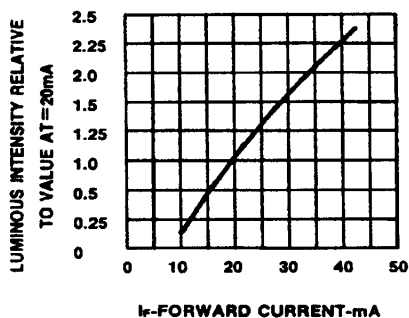


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

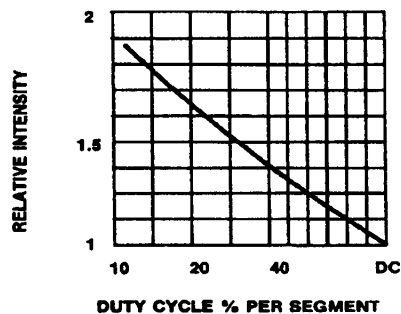


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

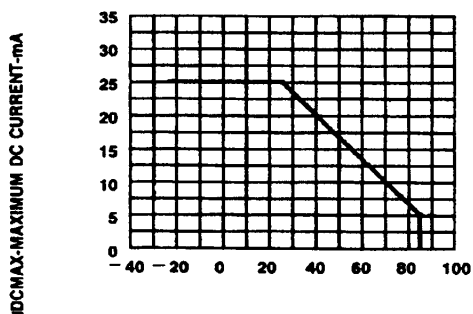


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

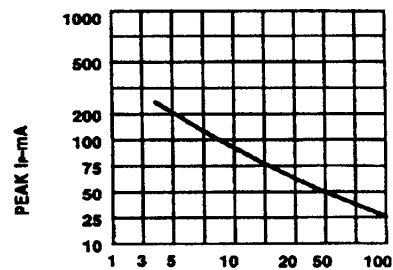


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE $f = 1 \text{ KHz}$)

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

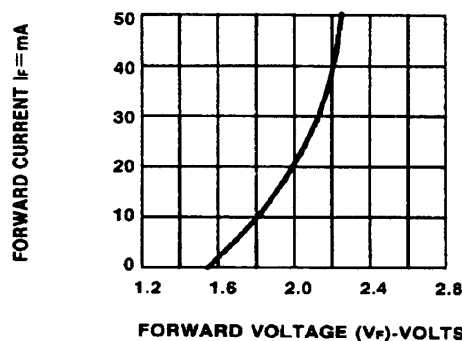


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

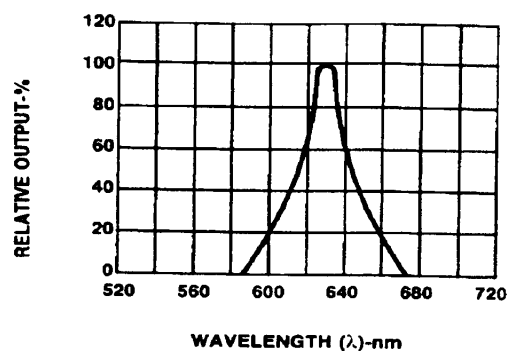


Fig.2 SPECTRAL RESPONSE

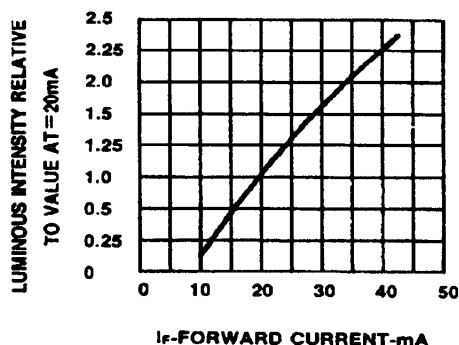


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

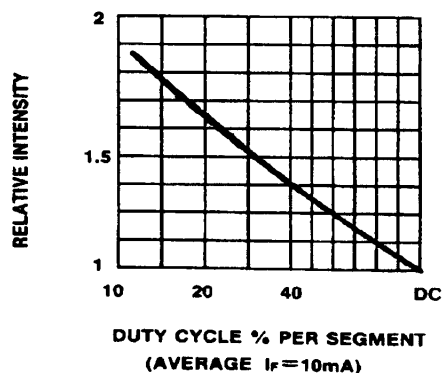


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

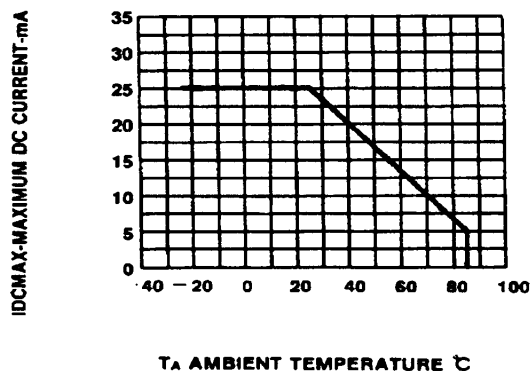


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

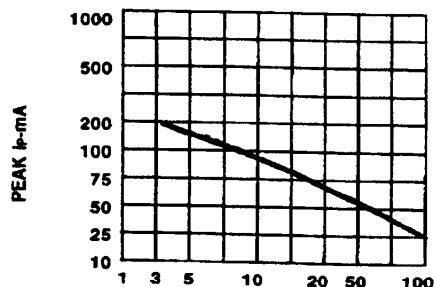


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE $f = 1 \text{ KHz}$)

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
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.