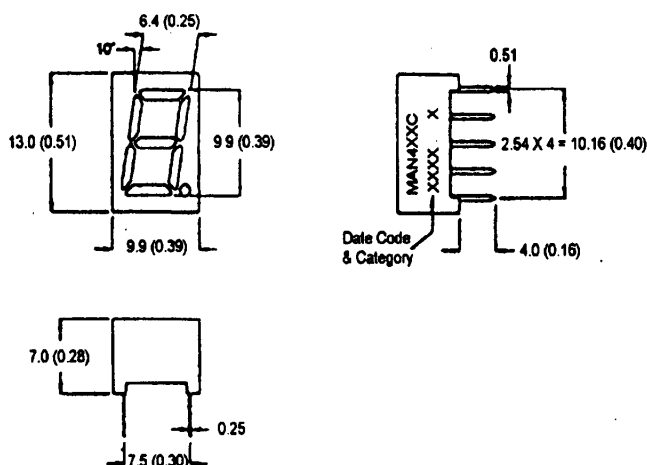




# 0.39 INCH (9.9MM) SINGLE DIGIT STICK DISPLAY

**BRIGHT RED MAN412C, MAN413C**  
**GREEN MAN442C, MAN443C**  
**HIGH EFF. RED MAN492C, MAN493C**

## PACKAGE DIMENSIONS



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

## FEATURES

Easy to read digits.  
 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>
MAN412C	Bright Red	1 Digit, Common Anode, Rt. Hand Decimal
MAN413C	Bright Red	1 Digit, Common Cathode, Rt Hand Decimal.
MAN442C	Green	1 Digit, Common Anode, Rt Hand Decimal.
MAN443C	Green	1 Digit, Common Cathode, Rt Hand Decimal.
MAN492C	High Eff. Red	1 Digit, Common Anode, Rt Hand Decimal.
MAN493C	High Eff. Red	1 Digit, Common Cathode, Rt Hand Decimal.

(For other color options, contact your local area Sales Office)



# 0.39 INCH (9.9MM) SINGLE DIGIT STICK DISPLAY

## ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C unless otherwise specified)

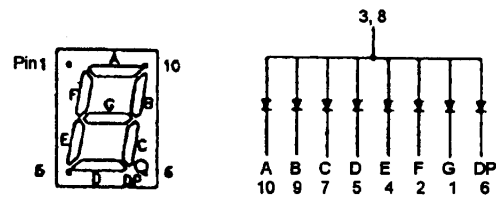
	B.Red MAN 412C 413C	Green MAN 442C 443C	High Eff. Red MAN 492C 493C	Units
Part number				
Continuous forward current (I <sub>F</sub> )				
Per Segment.....	15	25	25	mA
Peak forward current per die (I <sub>F</sub> )..... (at f = 10.0 KHz, Duty factor = 1/10)	60	90	90	mA
Power dissipation (P <sub>D</sub> ).....	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<sub>A</sub> = 25°C unless otherwise specified)

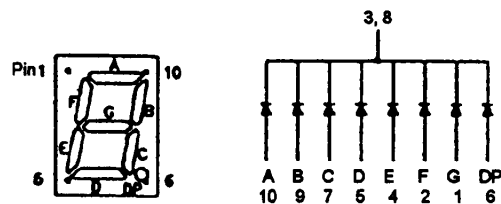
	B. Red MAN 412C 413C	Green MAN 442C 443C	High Eff. Red MAN 492C 493C	Test Condition
<u>Part number</u>				
Luminous intensity (ucd)				
minimum	300	800	900	I <sub>F</sub> = 20 mA
typical	700	2000	2200	I <sub>F</sub> = 20 mA
Forward voltage (V <sub>F</sub> )				
typical	2.1	2.1	2.0	I <sub>F</sub> = 20 mA
maximum	2.6	2.8	2.8	I <sub>F</sub> = 20 mA
Peak wavelength (nm)	697	570	635	I <sub>F</sub> = 20 mA
Spectral line half width (nm)	90	30	45	I <sub>F</sub> = 20 mA
Reverse breakdown voltage (V <sub>R</sub> )	5	5	5	I <sub>R</sub> = 100 uA

## PINOUT

### MAN4X2C - Common Anode



### MAN4X3C - Common Cathode



# 0.39 INCH (9.9MM) SINGLE DIGIT STICK DISPLAY

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

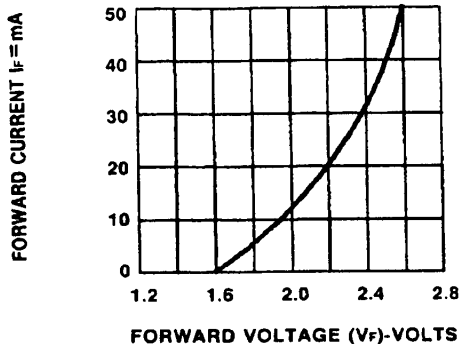


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

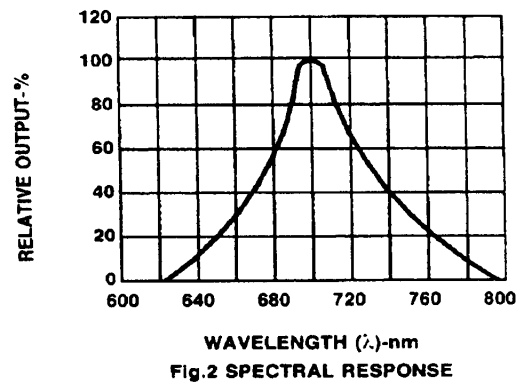


Fig.2 SPECTRAL RESPONSE

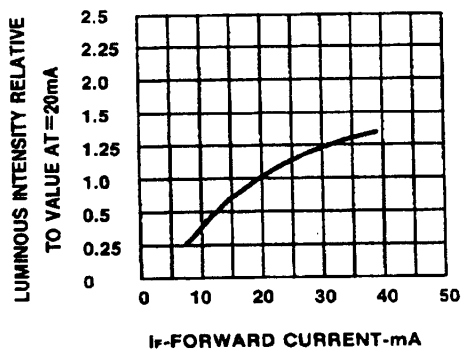


Fig.3 RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENT

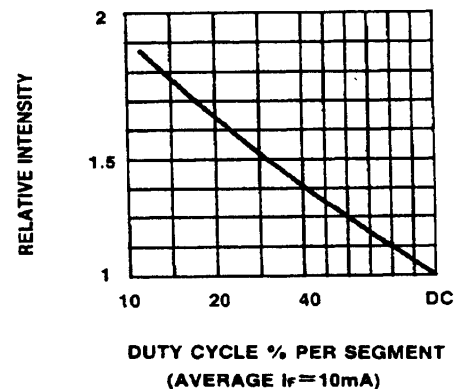


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

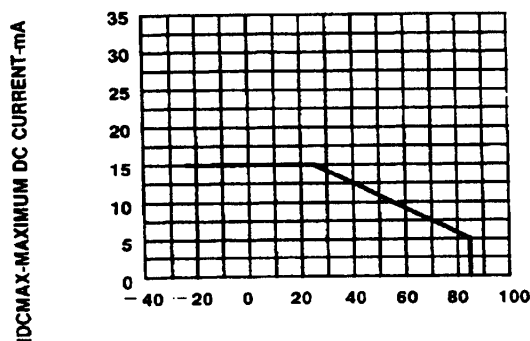


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER  
SEGMENT VS. A FUNCTION OF AMBIENT  
TEMPERATURE.

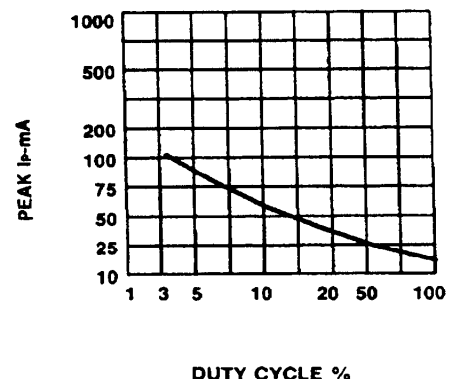


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1 \text{ KHz}$ )

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

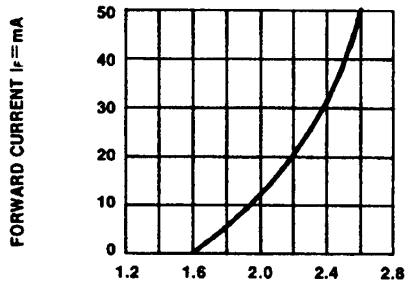


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

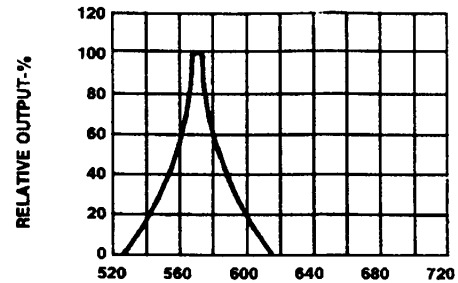


Fig.2 SPECTRAL RESPONSE

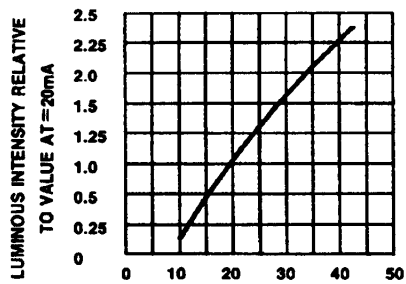


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

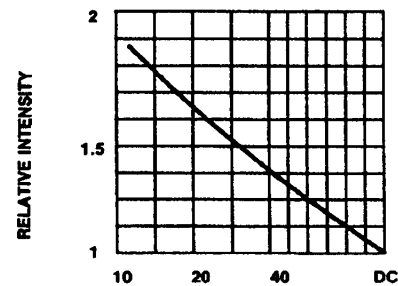


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE  
(AVERAGE  $I_F = 10\text{mA}$ )

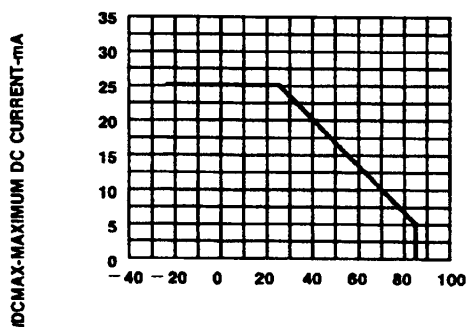


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

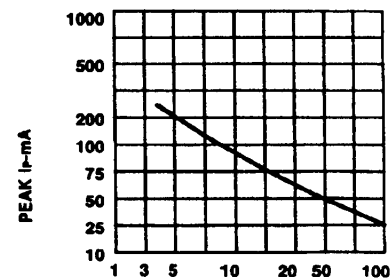


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1\text{ KHz}$ )

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

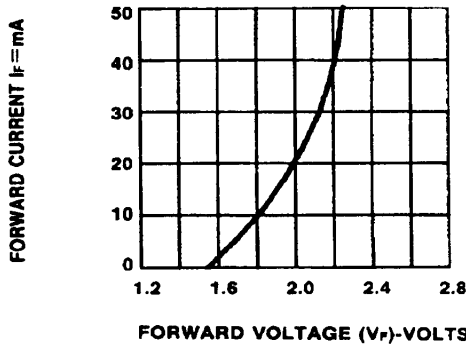


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

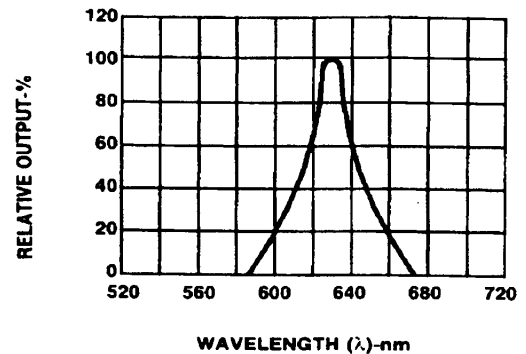


Fig.2 SPECTRAL RESPONSE

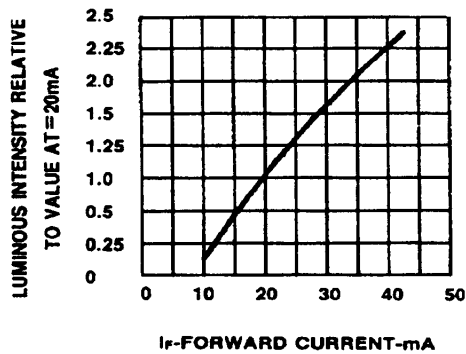


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

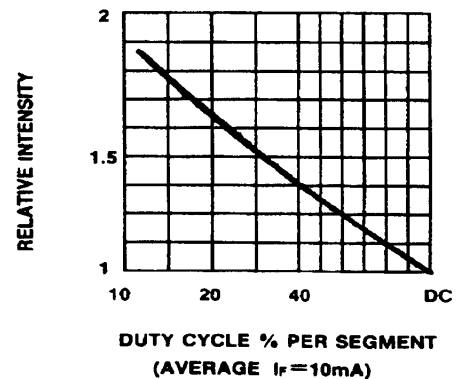


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

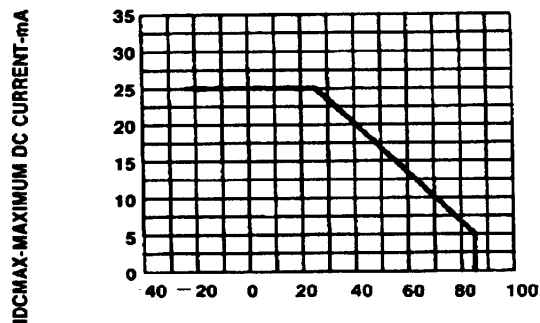


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

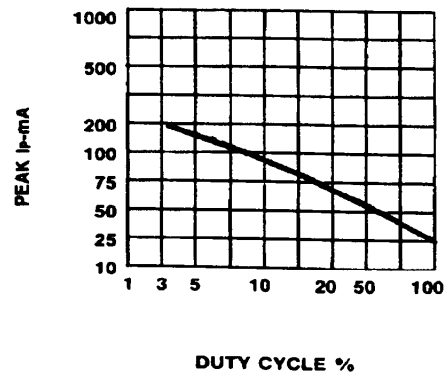


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE  $f = 1 \text{ KHz}$ )