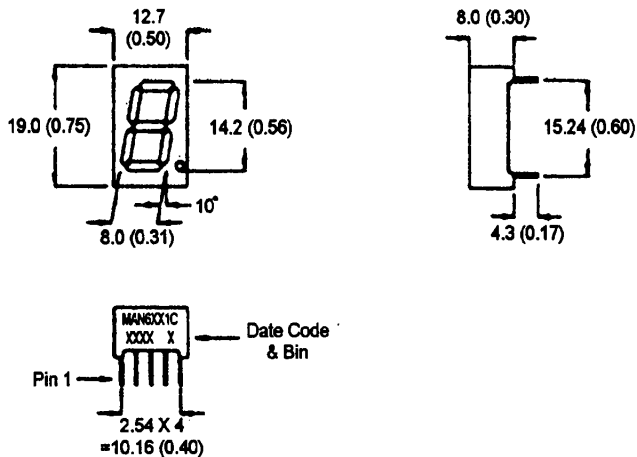


**BRIGHT RED MAN6161C, MAN6181C  
GREEN MAN6461C, MAN6481C  
HIGH EFF. RED MAN6961C, MAN6981C**

**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 digit
- Common anode or cathode
- Low power consumption
- Highly visible bold segments
- High brightness with high contrast
- White segments on a grey face for MAN64X1C and MAN61X1C.
- Red segments and red face for MAN69X1C
- 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>
MAN6161C	Bright Red	Common Anode; right hand decimal
MAN6181C	Bright Red	Common Cathode; right hand decimal
MAN6461C	Green	Common Anode; right hand decimal
MAN6481C	Green	Common Cathode; right hand decimal
MAN6961C	High efficiency red	Common Anode; right hand decimal
MAN6981C	High efficiency red	Common Cathode; right hand decimal

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

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

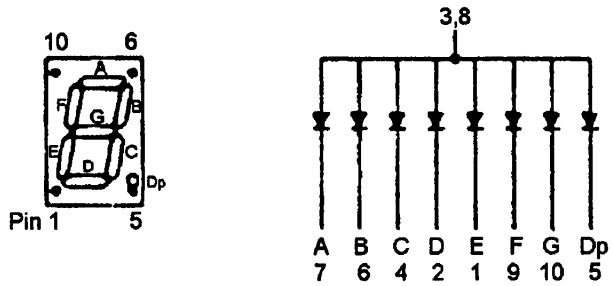
	<b>B.Red MAN 6161C 6181C</b>	<b>Green MAN 6461C 6481C</b>	<b>High Eff. Red MAN 6961C 6981C</b>	<b>Unit</b>
<b>Part number</b>				
<b>Continuous forward current (<math>I_f</math>) Per Segment</b>	<b>15</b>	<b>30</b>	<b>30</b>	<b>mA</b>
<b>Peak forward current per die (<math>I_r</math>) (at <math>f = 10.0</math> KHz, Duty factor = 1/10)</b>	<b>60</b>	<b>90</b>	<b>90</b>	<b>mA</b>
<b>Power dissipation (<math>P_D</math>)</b>	<b>40*</b>	<b>70*</b>	<b>70*</b>	<b>mW</b>
<b>*Derate Linearly from 25°C</b>	<b>0.17</b>	<b>0.33</b>	<b>0.33</b>	<b>mW/°C</b>
<b>Reverse voltage per dice.....</b>	<b>5V</b>			
<b>Operating and Storage temperature range.....</b>	<b>- 25°C to +85°C</b>			
<b>Lead soldering time (at 1/16 inch from the bottom of lamp).....</b>	<b>5 seconds @ 230°C</b>			

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

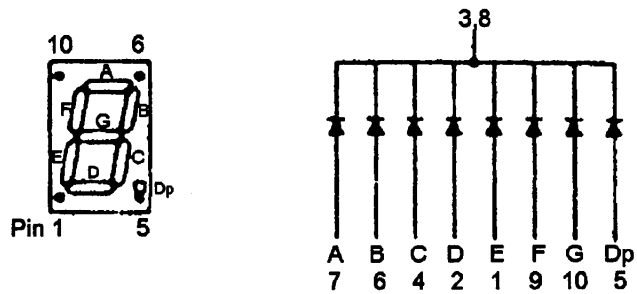
	<b>Bright Red MAN 6161C 6181C</b>	<b>Green MAN 6461C 6481C</b>	<b>High Eff. Red MAN 6961C 6981C</b>	<b>Test Condition</b>
<b>Part number</b>				
<b>Luminous intensity (ucd)</b>				
<b>minimum</b>	<b>300</b>	<b>800</b>	<b>900</b>	$I_f = 20\text{mA}$
<b>typical</b>	<b>700</b>	<b>2200</b>	<b>2200</b>	$I_f = 20\text{mA}$
<b>Forward voltage (<math>V_f</math>)</b>				
<b>typical</b>	<b>2.1</b>	<b>2.1</b>	<b>2.0</b>	$I_f = 20\text{mA}$
<b>maximum</b>	<b>2.6</b>	<b>2.8</b>	<b>2.8</b>	
<b>Peak wavelength (nm)</b>	<b>697</b>	<b>570</b>	<b>635</b>	$I_f = 20\text{mA}$
<b>Spectral line half width (nm)</b>	<b>90</b>	<b>30</b>	<b>45</b>	$I_f = 20\text{mA}$
<b>Reverse breakdown voltage (<math>V_R</math>)</b>	<b>5</b>	<b>5</b>	<b>5</b>	$I_r = 100\mu\text{A}$

**PINOUT**

**MAN6X61C - Common Anode**



**MAN6X81C - Common Cathode**



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

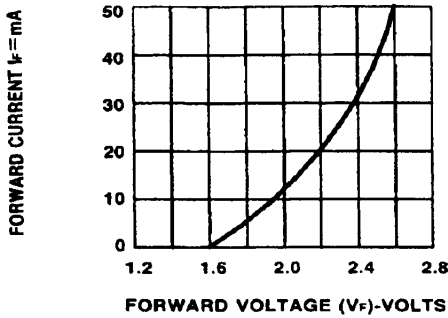


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

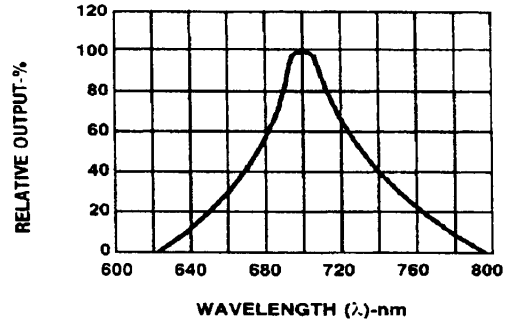


Fig.2 SPECTRAL RESPONSE

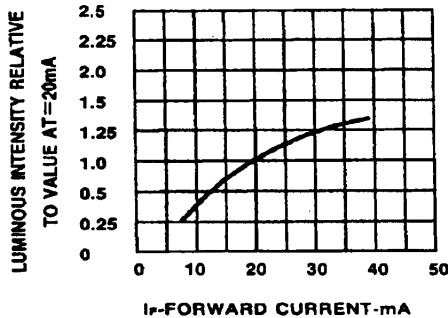


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

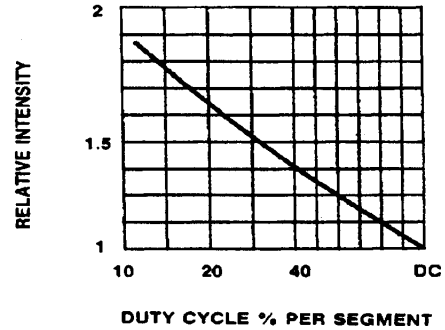


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

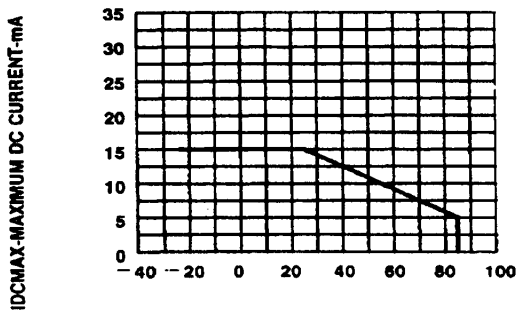


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

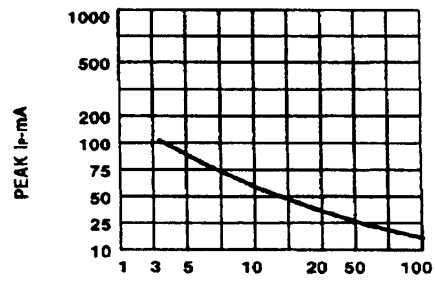


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f=1\text{ KHz}$ )

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

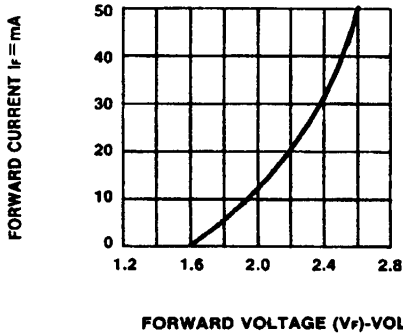


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

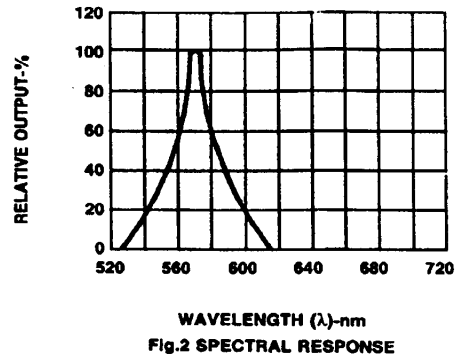


Fig.2 SPECTRAL RESPONSE

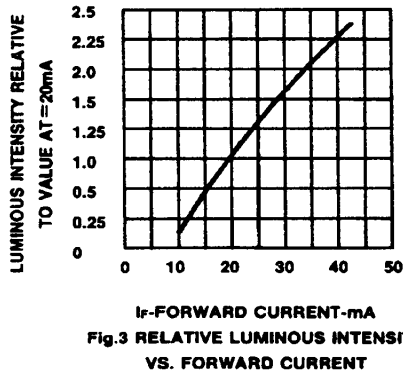


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

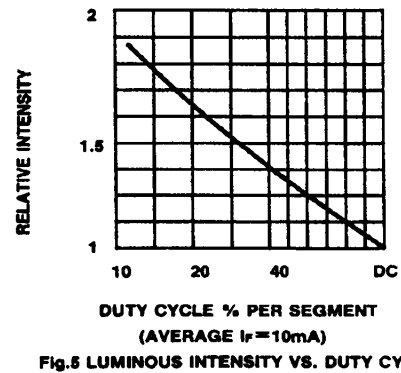


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

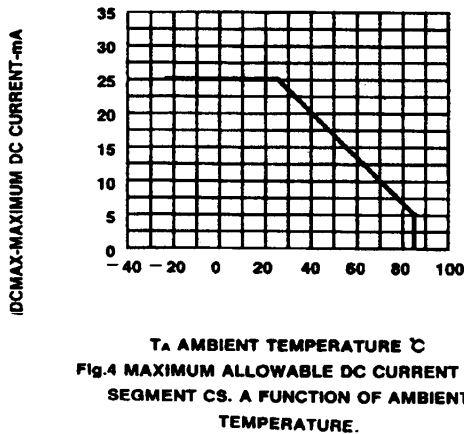


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

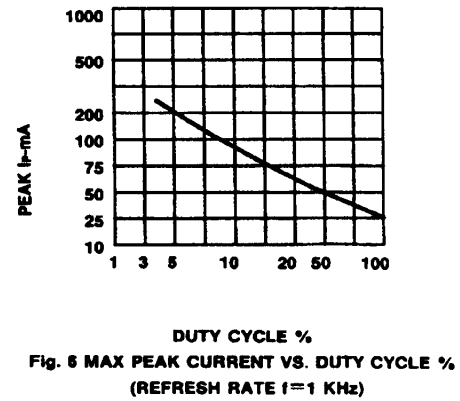


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f = 1 \text{ KHz}$ )

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

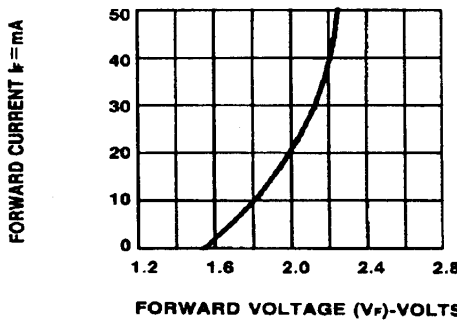


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

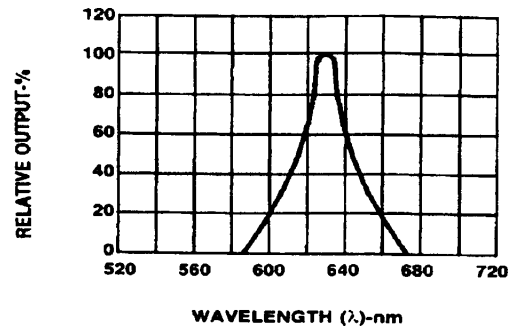


Fig.2 SPECTRAL RESPONSE

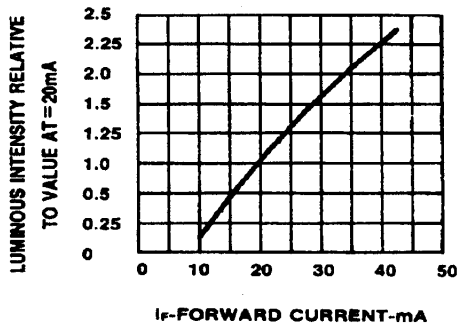


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

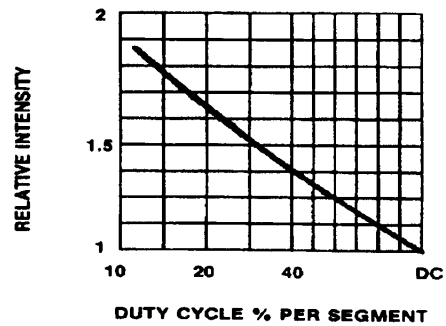


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

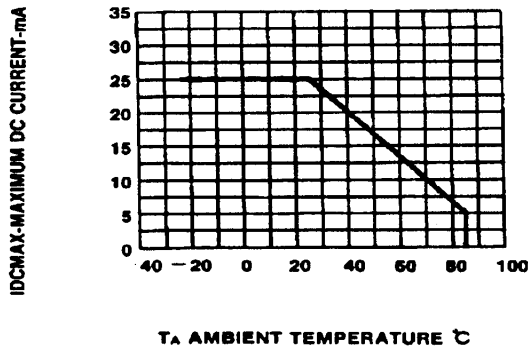


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

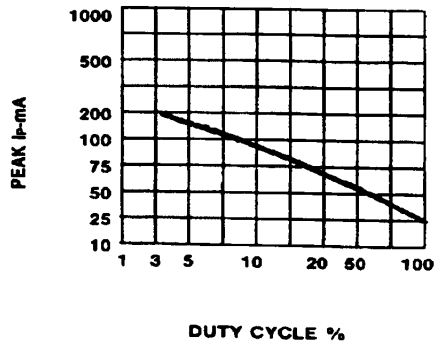


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f = 1\text{ KHz}$ )

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