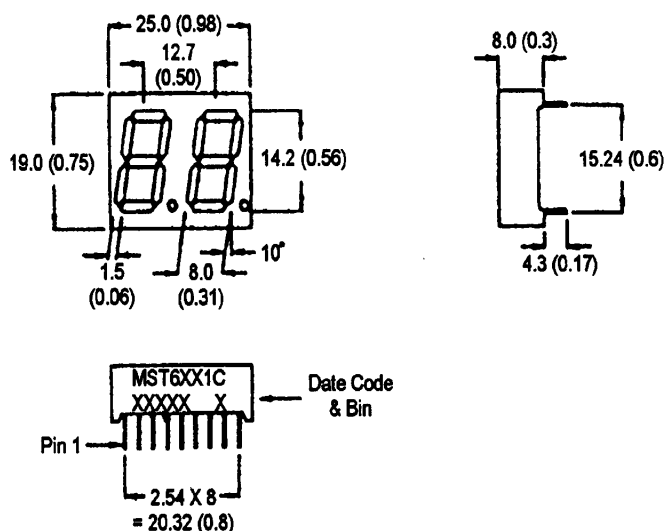


**BRIGHT RED MAN6111C, MAN6141C
GREEN MAN6411C, MAN6441C
HIGH EFF. RED MAN6911C, MAN6941C**

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>
MAN6111C	Bright Red	Common Anode; right hand decimal
MAN6141C	Bright Red	Common Cathode; right hand decimal
MAN6411C	Green	Common Anode; right hand decimal
MAN6441C	Green	Common Cathode; right hand decimal
MAN6911C	High efficiency red	Common Anode; right hand decimal
MAN6941C	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)

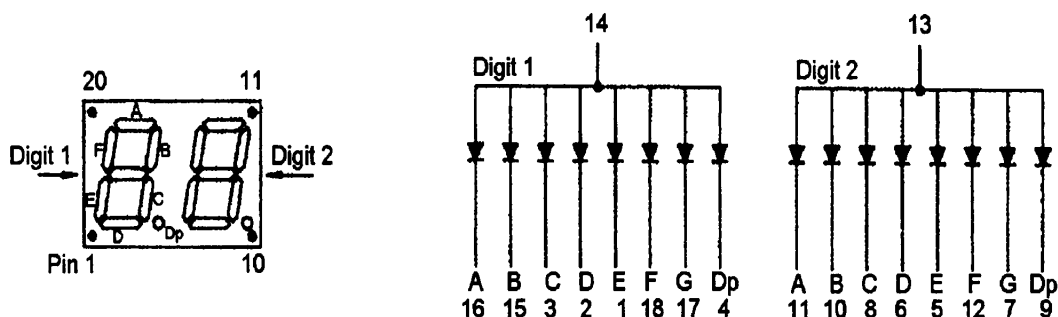
Part number	B.Red MAN 6111C 6141C	Green MAN 6411C 6441C	High Eff. Red MAN 6911C 6941C	Unit
Continuous forward current (I_f)				
Per Segment	15	30	30	mA
Peak forward current per die (I_f) (at $f = 1.0 \text{ KHz}$, Duty factor = 1/10)	50	90	90	mA
Power dissipation (P_D)	40*	70*	90*	mW
*Derate Linearly 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)

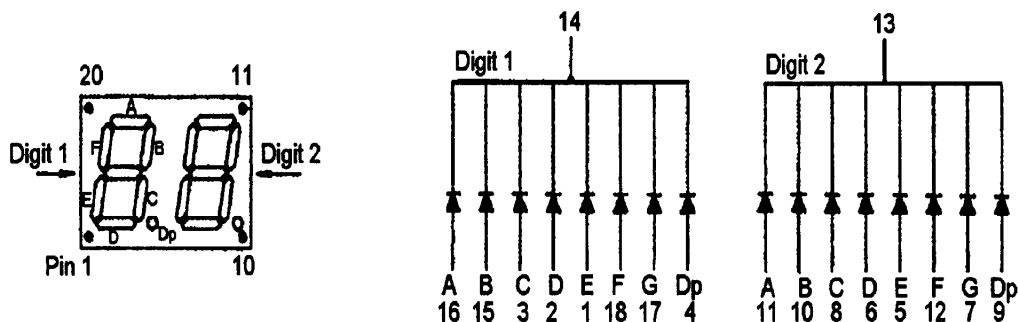
Part number	Bright Red MAN 6161C 6181C	Green MAN 6461C 6481C	High Eff. Red MAN 6961C 6981C	Test Condition
Luminous intensity (ucd)				
minimum	300	800	900	$I_f = 20\text{mA}$
typical	700	2200	2200	$I_f = 20\text{mA}$
Forward voltage (V_f)				
typical	2.1	2.1	2.0	$I_f = 20\text{mA}$
maximum	2.6	2.8	2.8	
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	$I_R = 100\mu\text{A}$

PINOUT

MAN6X11C - Common Anode



MAN6X41C - Common Cathode



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

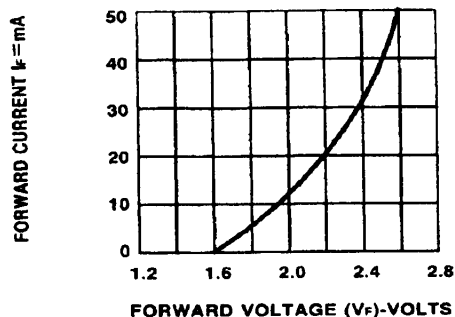


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

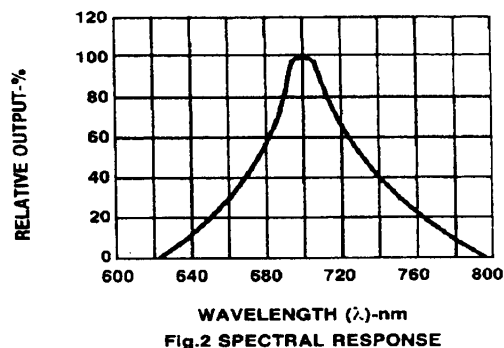


Fig.2 SPECTRAL RESPONSE

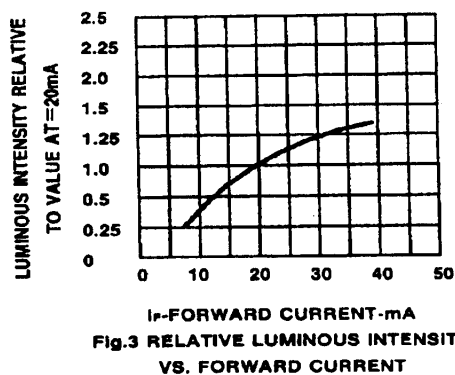


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

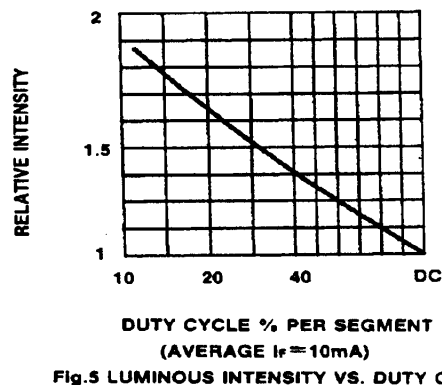


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

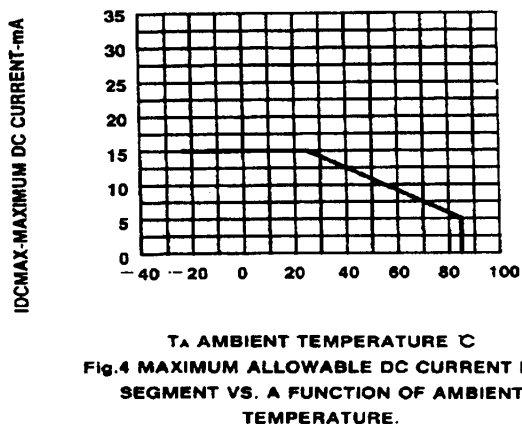


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

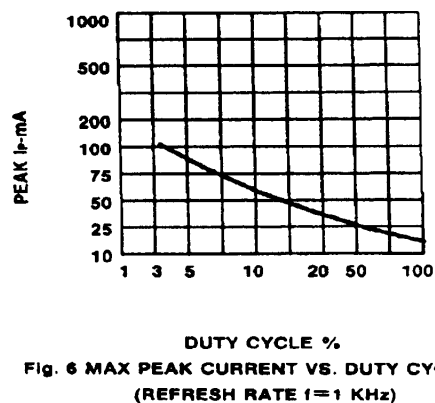


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f = 1 \text{ KHz}$)

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

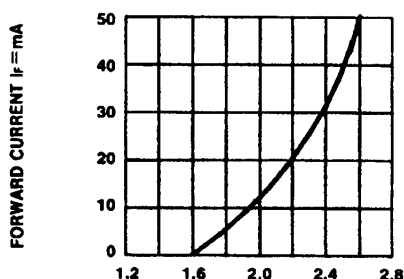


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

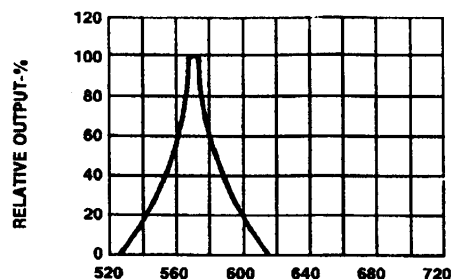
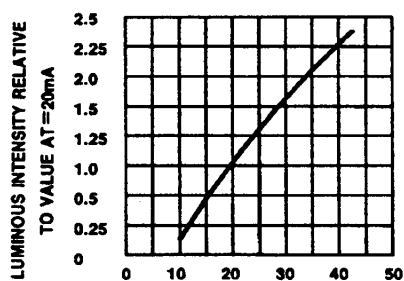


Fig.2 SPECTRAL RESPONSE



**Fig.3 RELATIVE LUMINOUS INTENSITY
VS. FORWARD CURRENT**

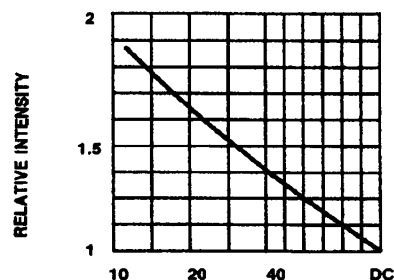
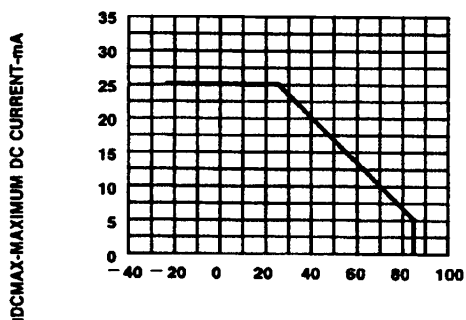
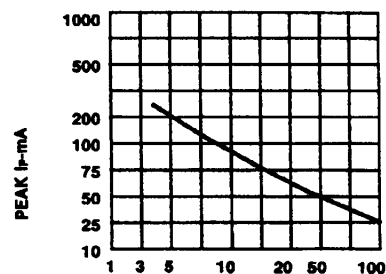


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



**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)

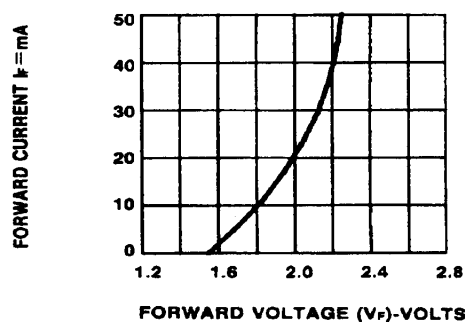


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

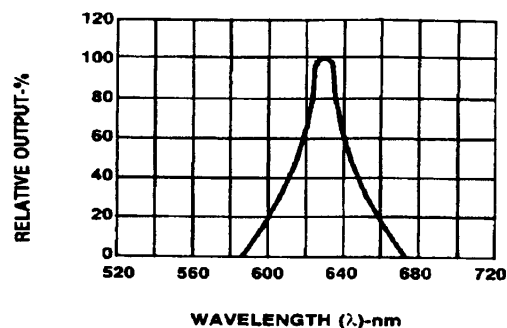


Fig.2 SPECTRAL RESPONSE

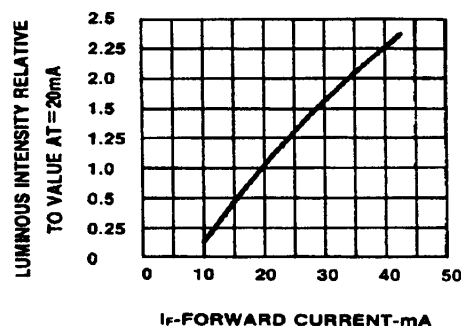


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

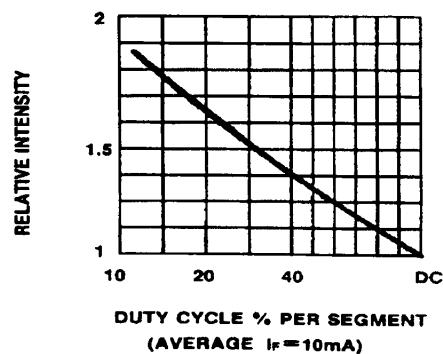


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

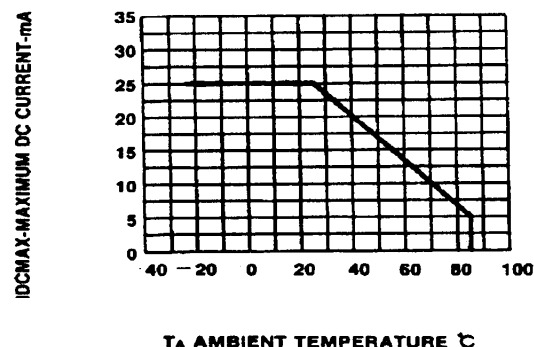


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

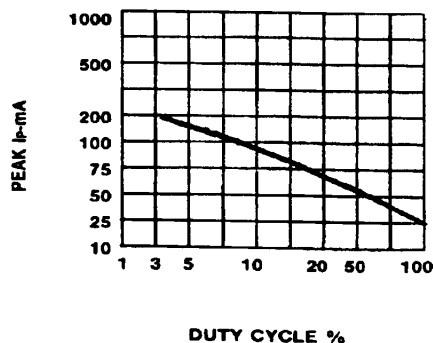


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE $f = 1 \text{ KHz}$)

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