



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

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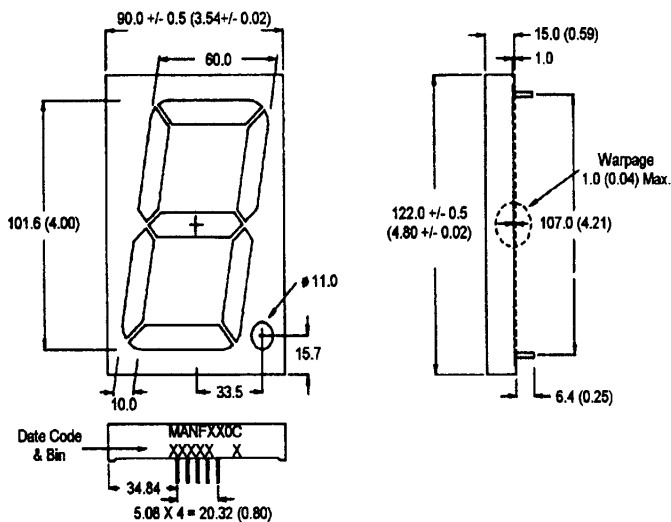
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**AlGaAs RED MANF260C, MANF280C  
GREEN MANF460C, MANF480C  
HIGH EFF. RED MANF960C, MANF980C**

**PACKAGE DIMENSIONS**



**NOTES: Dimensions are in mm (inch).  
All pins are 0.6 (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
- 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>
MANF260C	AlGaAs Red	Common Anode; right hand decimal
MANF280C	AlGaAs Red	Common Cathode; right hand decimal
MANF460C	Green	Common Anode; right hand decimal
MANF480C	Green	Common Cathode; right hand decimal
MANF960C	High efficiency red	Common Anode; right hand decimal
MANF980C	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)

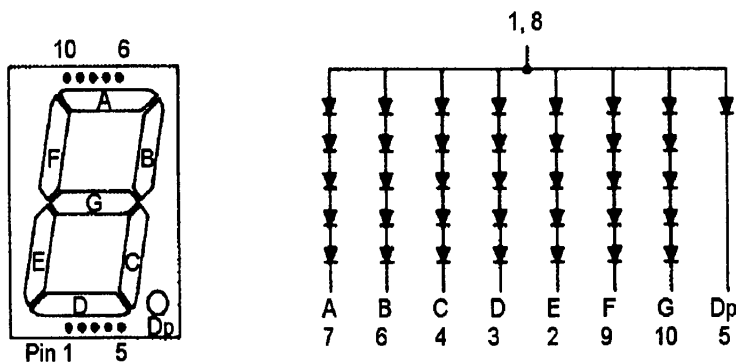
	AlGaAs Red	Green	High Eff. Red	
	MANF	MANF	MANF	
Part number	260C 280C	460C 480C	960C 980C	Unit
Continuous forward current ( $I_f$ )				
Per die	25	30	30	mA
Peak forward current per die ( $I_p$ ) (at $f = 10.0$ KHz, Duty factor = 1/10)	200	90	90	mA
Power dissipation ( $P_D$ ) per die	100*	70 *	70*	mW
*Derate linearly from $25^\circ\text{C}$	0.5	0.33	0.33	mW/ $^\circ\text{C}$
Reverse voltage per dice.....				5V
Operating and Storage temperature range.....				- $40^\circ\text{C}$ to $+85^\circ\text{C}$
Lead soldering time (at 1/16 inch from the bottom of lamp).....				5 seconds @ $230^\circ\text{C}$

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

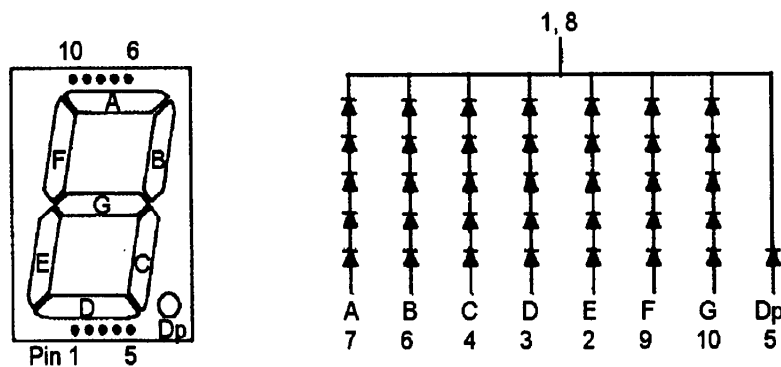
	AlGaAs Red	Green	High Eff. Red	
	MANF	MANF	MANF	
Part number	260C 280C	460C 480C	960C 980C	Test Condition
Luminous intensity (ucd)				
typical	9000	7900	6300	$I_f = 20$ mA
Forward voltage ( $V_F$ )				
typical	9.0	10.5	10.0	$I_f = 20$ mA
maximum	12.5	14.0	14.0	$I_f = 20$ mA
Peak wavelength (nm)	660	570	635	$I_f = 20$ mA
Spectral line half width (nm)	20	30	45	$I_f = 20$ mA
Reverse breakdown voltage ( $V_R$ )	10	10	10	$I_R = 100$ uA

**PINOUT**

**MANFX60C - Common Anode**



**MANFX80C - Common Cathode**



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

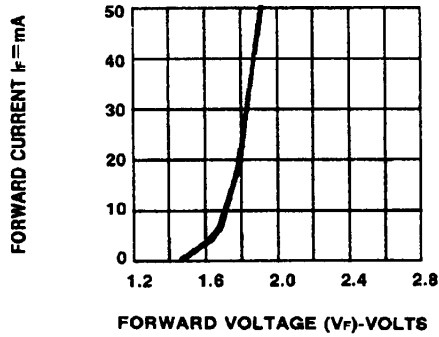


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

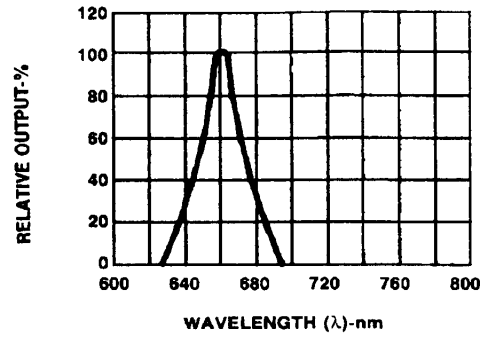


Fig.2 SPECTRAL RESPONSE

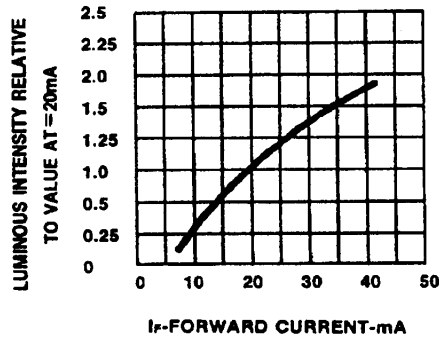


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

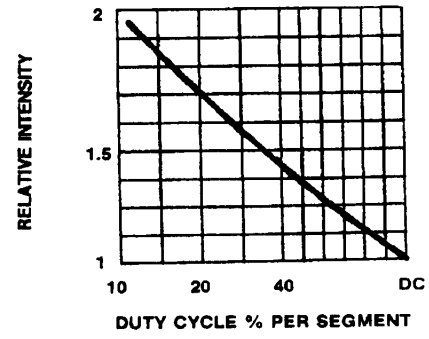


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

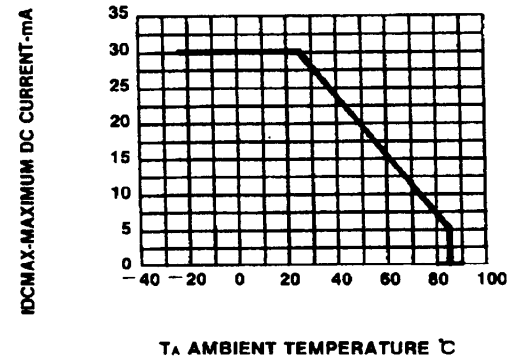


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

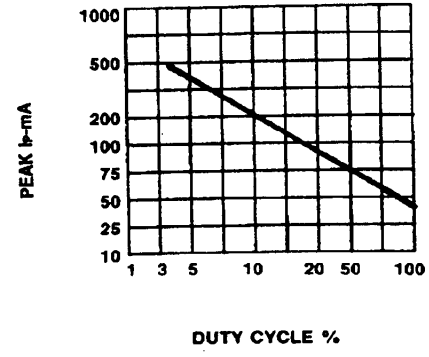


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f = 1$  KHz)

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

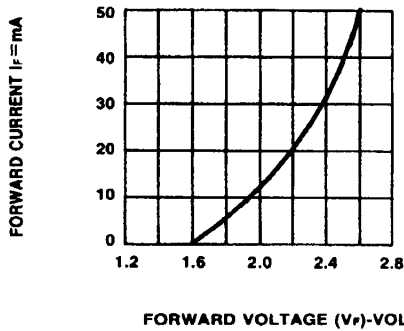


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

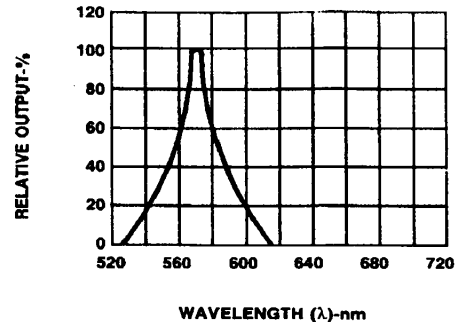


Fig.2 SPECTRAL RESPONSE

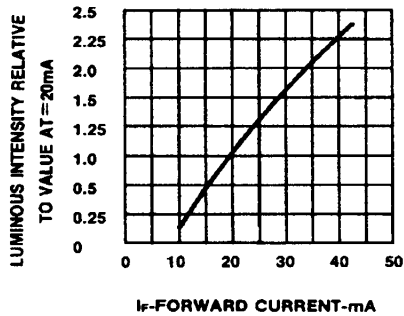


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

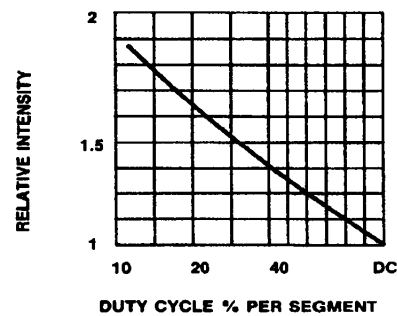


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

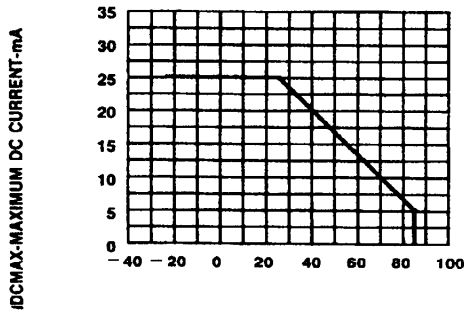


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT CS. A FUNCTION OF AMBIENT TEMPERATURE.

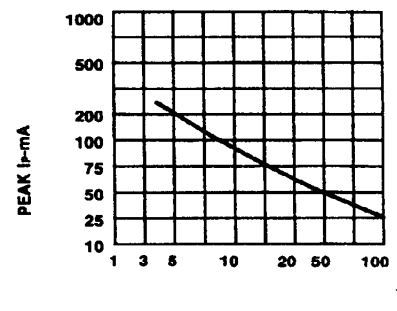


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f = 1 \text{ KHz}$ )

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

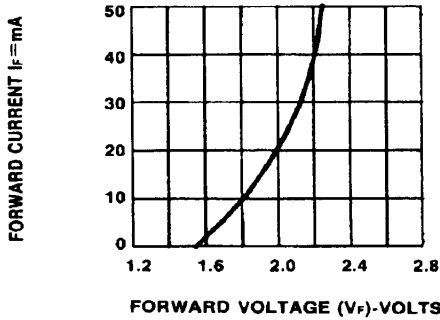


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

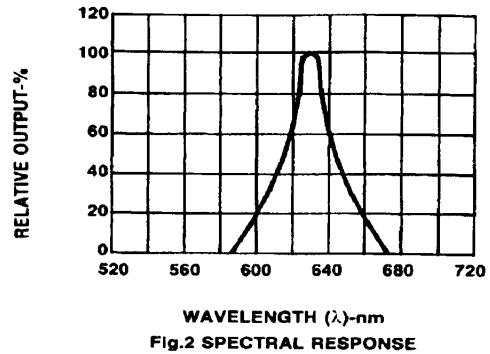


Fig.2 SPECTRAL RESPONSE

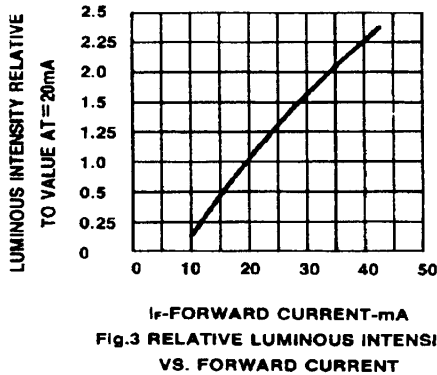


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

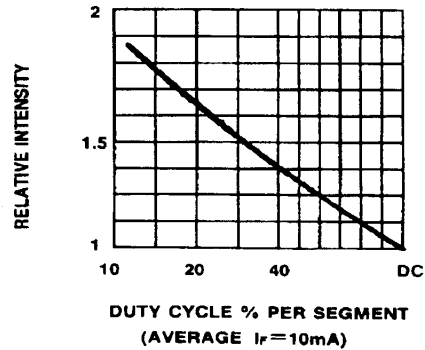


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

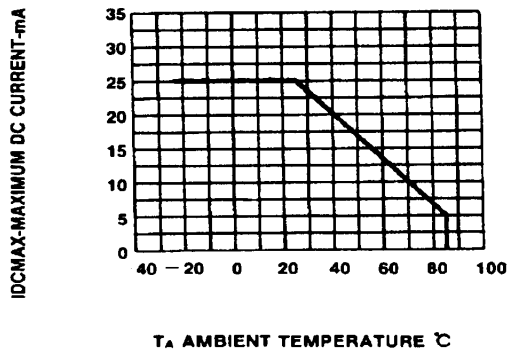


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE.

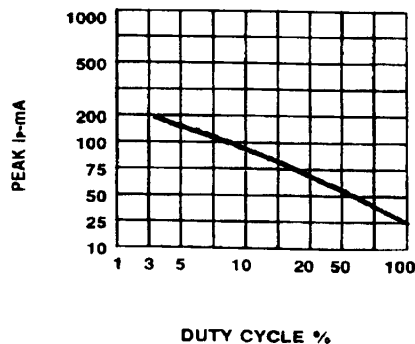


Fig. 6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE  $f=1\text{ KHz}$ )

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