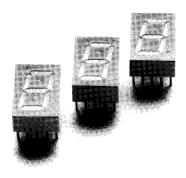


## YELLOW MAN5350/5360 GREEN MAN5450/5460

## RED MAN5750/5760 ORANGE-RED MAN5950/5960



### DESCRIPTION

This display series is a family of large digits 0.510 inches in height. All models have right hand decimal points and are available in common anode or common cathode configurations. All units are constructed with untinted segments on grey face to enhance ON/OFF contrast. Standard units are available in red, orange-red, green and yellow.

## **FEATURES**

- Large, easy to read, digits
- Common anode or common cathode models
- Fast switching excellent for multiplexing
- Low power consumption
- Bold solid segments that are highly legible
- Solid state reliability long operation life
- Rugged plastic construction
- Directly compatible with integrated circuits
- High brightness with high contrast
- Categorized for luminous intensity (see Note 5)
- Wide angle viewing . . . 150°
- Low forward voltage
- Untinted segments on grey face

#### APPLICATIONS

For industrial and consumer applications such as:

- Digital readout displays
- Instrument panels
- Point of sale equipment
- Digital clocks
- TV and radios

MODEL NUMBERS				
PART NUMBER	COLOR	DESCRIPTION	PIN OUT SPECIFICATION (See Page 5	
MAN5350	Yellow	Common Anode	Α	
MAN5360	Yellow	Common Cathode	В	
MAN5450	Green	Common Anode	Α	
MAN5460	Green	Common Cathode	В	
MAN5750	Red	Common Anode	A	
MAN5760	Red	Common Cathode	В	
MAN5950	Orange-Red	Common Anode	Α	
MAN5960	Orange-Red	Common Cathode	В	



	MIN.	TYP.	MAX.	UNITS	TEST CONDITION
YELLOW MAN5350/MAN5360					
Luminous Intensity, digit average (See Note 1)	820	1200 480		μcd μcd	$I_F=10 \text{ mA}$ $I_F=5 \text{ mA}$
Peak emission wavelength		585		nm	I <sub>F</sub> =10 mA
Dominant wavelength	582		593	nm	I <sub>F</sub> =10 mA
Spectral line half width		40		nm	
Forward voltage		2.4	3.0	٧	I <sub>F</sub> =20 mA
Dynamic resistance	-	26			I <sub>F</sub> =20 mA
Capacitance		35		pF	V <sub>R</sub> =0, f=1MHz
Reverse current			10	μΑ	V <sub>R</sub> =6.0 V
GREEN MAN5450/MAN5460	820	2000			
Luminous Intensity, digit average (See Note 1)	820	3000 1000		μcd μcd	$I_F=10 \text{ mA}$ $I_F=5 \text{ mA}$
Peak emission wavelength		562	,	nm	I <sub>F</sub> =10 mA
Dominant wavelength	564		574	nm	I <sub>F</sub> =10 mA
Spectral line half width		30		nm	
Forward voltage		2.4	3.0	V	I <sub>F</sub> =20 mA
Dynamic resistance		12			I <sub>F</sub> =20 mA
Capacitance		40		pF	V <sub>R</sub> =0, f=1MHz
Reverse current			10	μΑ	V <sub>R</sub> =6.0 V



	MIN.	TYP.	MAX.	UNITS	TEST CONDITION
RED MAN5750/MAN5760					
_uminous Intensity, digit average (See Note 1)	280	500 250		μcd μcd	l <sub>F</sub> =10 mA l <sub>F</sub> =5 mA
Peak emission wavelength		655		nm	I <sub>F</sub> =10 mA
Dominant wavelength		645		nm	I <sub>F</sub> =10 mA
Spectral line half width		20		nm	
Forward voltage		1.6	2.0	٧	I <sub>F</sub> =20 mA
Dynamic resistance		2			I <sub>F</sub> =20 mA
Capacitance		35		pF	V <sub>R</sub> =0, f=1MHz
Reverse current			10	μΑ	V <sub>R</sub> =6.0 V
ORANGE-RED MAN5950/MAN5960  Luminous Intensity, digit average (See Note 1)	820	2500 700		μcd μcd	l <sub>r</sub> =10 mA l₌=5 mA
Peak emission wavelength		635		nm	I <sub>E</sub> =10 mA
Dominant wavelength	615	000	630	nm	I <sub>F</sub> =10 mA
Spectral line half width		40		nm	
Forward voltage		2.0	3.0	V	I <sub>F</sub> =20 mA
Dynamic resistance		26			I <sub>F</sub> =20 mA
Capacitance		35		pF	V <sub>R</sub> =0, f=1MHz
Reverse current			10	μΑ	V <sub>R</sub> =6.0 V



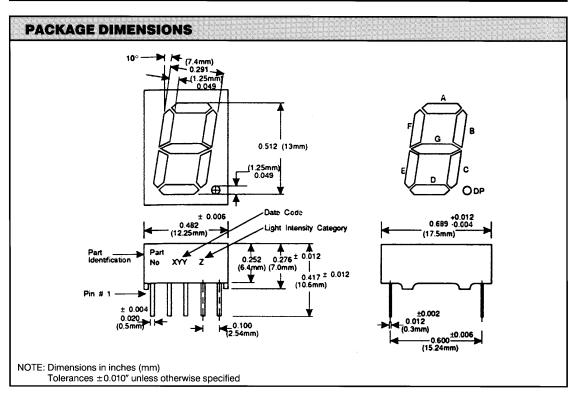
	MAN5350 MAN5360	MAN5450 MAN5460	MAN5750 MAN5760	MAN5950 MAN5960
Power Dissipation at 25°C Ambient	600 mW	570 mW	480 mW	600 mW
Derate linearly from 50°C	-10.3 mW/°C	-12 mW/°C	-6.9 mW/°C	-8.6 mW/°C
Storage and operating temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Continuous forward current Total Per segment Decimal point	200 mA 25 mA 25 mA	240 mA 30 mA 30 mA	240 mA 30 mA 30 mA	240 mA 30 mA 30 mA
Reverse voltage Per segment Decimal point	6.0 V 6.0 V	6.0 V 6.0 V	6.0 V 6.0 V	6.0 V 6.0 V
Soldering time at 260°C (See Notes 3 and 4)	5 sec.	5 sec.	5 sec.	5 sec.

#### NOTES

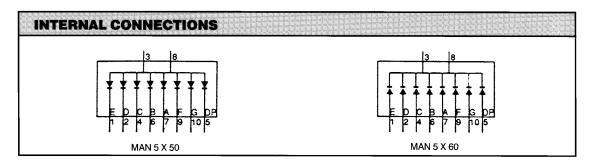
- The digit average Luminous Intensity is obtained by summing the Luminous Intensity of each segment and dividing by the total number of segments. Intensity will not vary more than ±33.3% between all segments within a digit.
- 2. The relative luminous intensity in this curve is normalized to the brightness at 25°C to indicate the relative efficiency over the operating temperature range.
- 3. Leads of the device immersed to 1/16 inch from the body. Maximum device surface temperature is 140°C.
- 4. For flux removal, Freon TF, Freon TE, Isoproponal or water may be used up to their boiling points.
- All displays are categorized for Luminous Intensity. The intensity category is marked on each part as a suffix letter to the part number.

RECOMMEND	ED OPTICAL FILTERS		
or optimum ON and	OFF contrast, one of the following filters o	r equivalents should	be used over the display:
DEVICE TYPE	FILTER	DEVICE TYPE	FILTER
MAN5350 MAN5360	Panelgraphic Yellow 25 or Amber 23 Homalite 100-1720 or 100-1726 Panelgraphic Grey 10 Homalite 100-1266 Grey	MAN5450 MAN5460	Panelgraphic Green 48 Homalite 100-1440 Green Panelgraphic Grey 10 Homalite 100-1266 Grey
MAN5750 MAN5760	Panelgraphic Red 60 Homalite 100-1605	MAN5950 MAN5960	Panelgraphic Scarlet 65 Homalite 100-1670

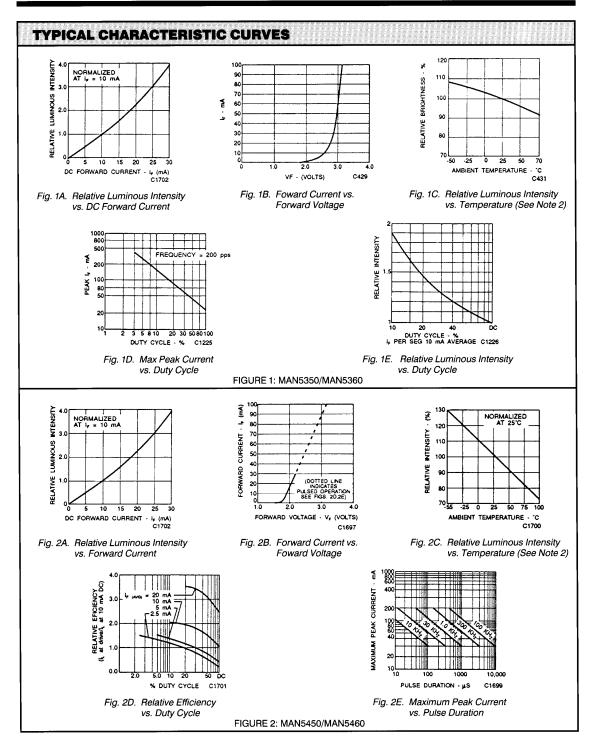




ELECTRICAL CONNECTIONS				
PIN NO.	A MAN 5 X 50	B MAN 5 X 60		
1	Cathode E	Anode E		
2	Cathode D	Anode D		
3	Com. Anode	Com. Cathode		
4	Cathode C	Anode C		
5	Cathode D.P.	Anode D.P.		
6	Cathode B	Anode B		
7	Cathode A	Anode A		
8	Com. Anode	Com. Cathode		
9	Cathode F	Anode F		
10	Cathode G	Anode G		

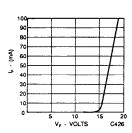








# TYPICAL CHARACTERISTIC CURVES NORMALIZED DC FORWARD CURRENT - I<sub>F</sub> (mA) C1702 vs. DC Forward Current



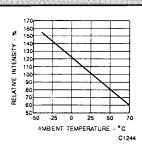


Fig. 3A. Relative Luminous Intensity

Fig. 3B. Foward Current vs. Forward Voltage

Fig. 3C. Relative Luminous Intensity vs. Temperature (See Note 2)



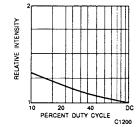
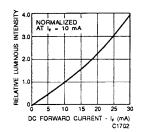
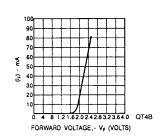


Fig. 3D. Max Peak Current vs. Duty Cycle

Fig. 3E. Relative Luminous Intensity vs. Duty Cycle

FIGURE 3: MAN5750/MAN5760





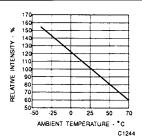
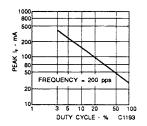


Fig. 4A. Relative Luminous Intensity vs. Forward Current

Fig. 4B. Forward Current vs. Foward Voltage

Fig. 4C. Relative Luminous Intensity vs. Temperature (See Note 2)



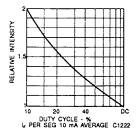


Fig. 4D. Maximum Peak Current vs. Duty Cycle

Fig. 4E. Relative Luminous Intensity vs. Duty Cycle

FIGURE 4: MAN5950/MAN5960



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