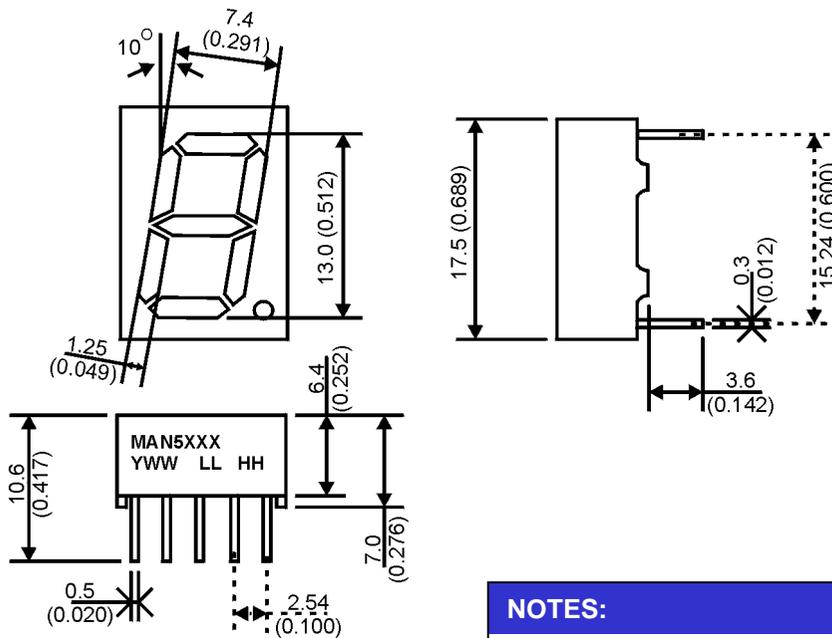


# 13mm (0.512 inch) One Digit NUMERIC FRAME DISPLAY

AllnGaP Red (632nm) MAN5H50, MAN5H60  
AllnGaP Red (639nm) MAN5R50, MAN5R60  
AllnGaP Yellow MAN5Y50, MAN5Y60

TR/QTS030100-001

## PACKAGE DIMENSIONS



### NOTES:

- Dimensions are in mm (inches)
- Tolerances are +/- 0.25 (0.010) unless otherwise stated.

## FEATURES

- Bright Bold Segments
- Common Anode/Cathode
- Low Power Consumption
- Low Current Capability
- Neutral Segments
- Grey Face
- Epoxy Encapsulated Frame
- High Performance
- High Reliability

## APPLICATIONS

- Appliances
- Automotive
- Instrumentation
- Process Control

## MODELS AVAILABLE

Part Number	Colour	Description	Special
MAN5H50	AllnGaP 632nm	Single Digit, RHDP, Common Anode	Low Current Capability
MAN5H60	AllnGaP 632nm	Single Digit, RHDP, Common Cathode	Low Current Capability
MAN5R50	AllnGaP 639nm	Single Digit, RHDP, Common Anode	Low Current Capability
MAN5R60	AllnGaP 639nm	Single Digit, RHDP, Common Cathode	Low Current Capability
MAN5Y50	AllnGaP Yellow	Single Digit, RHDP, Common Anode	Low Current Capability
MAN5Y60	AllnGaP Yellow	Single Digit, RHDP, Common Cathode	Low Current Capability

(For other colour options, contact your local area Sales Manager)

## ABSOLUTE MAXIMUM RATINGS<sup>(1)</sup> ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

Part Number	MAN5H50	MAN5R50	MAN5Y50	
Parameter	MAN5H60	MAN5R60	MAN5Y60	Units
<b>Continuous Forward Current</b> (each segment)	25	25	25	mA
<b>Peak Forward Current</b> ( $F = 10\text{KHz}$ , $D/F = 1/10$ )	100	100	100	mA
<b>Power Dissipation (<math>P_D</math>)</b>	60	60	60	mW
<b>*Derate Linearly from <math>25^\circ\text{C}</math></b>	0.36	0.36	0.36	mW
<b>Reverse Voltage per Die</b>	5 Volts			
<b>Operating and Storage Temperature Range</b>	$-40^\circ\text{C}$ to $+85^\circ\text{C}$			
<b>Lead soldering time (1/16 inch from standoffs)</b>	5 seconds @ $230^\circ\text{C}$			

## ELECTRO-OPTICAL CHARACTERISTICS<sup>(1)</sup> ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)

Part Number	MAN5H50	MAN5R50	MAN5Y50		
Parameter	MAN5H60	MAN5R60	MAN5Y60	Units	Test Condition
<b>Luminous intensity<sup>(2)</sup> (<math>I_V</math>)</b>					
Minimum (Standard Current)	6000	4000	8000	ucd	$I_F = 10\text{mA}$
Typical (Standard Current)	7800	5800	12800	ucd	$I_F = 10\text{mA}$
Minimum (Low Current)	510	510	510	ucd	$I_F = 2\text{mA}$
Typical (Low Current)	1000	1000	1000	ucd	$I_F = 2\text{mA}$
<b>Forward Voltage (<math>V_F</math>)</b>					
Typical (Standard Current)	2.05	2.05	2.05	Volts	$I_F = 20\text{mA}$
Maximum (Standard Current)	2.40	2.40	2.40	Volts	$I_F = 20\text{mA}$
Typical (Low Current)	1.80	1.80	1.80	Volts	$I_F = 2\text{mA}$
Maximum (Low Current)	2.20	2.20	2.20	Volts	$I_F = 2\text{mA}$
<b>Peak Wavelength</b>	632	639	591	nm	$I_F = 10\text{mA}$
<b>Dominant Wavelength</b>	624	631	585	nm	$I_F = 10\text{mA}$
<b>Spectral Line 1/2 Width</b>	20	20	20	nm	$I_F = 10\text{mA}$
<b>Reverse B<sup>(3)</sup>.Voltage (<math>V_R</math>)</b>	5	5	5	Volts	$I_R = 100\mu\text{A}$

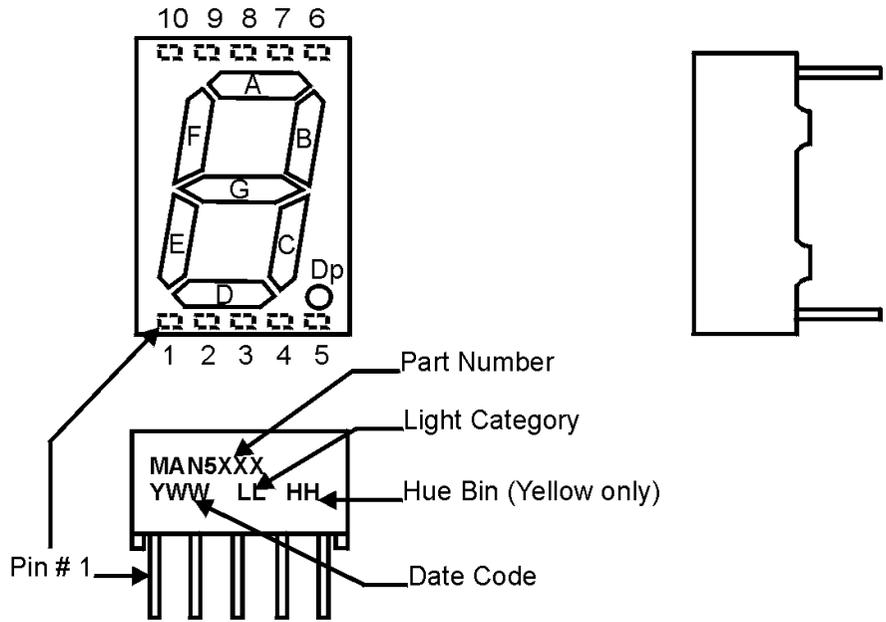
NOTES:

(1) Data per individual LED element

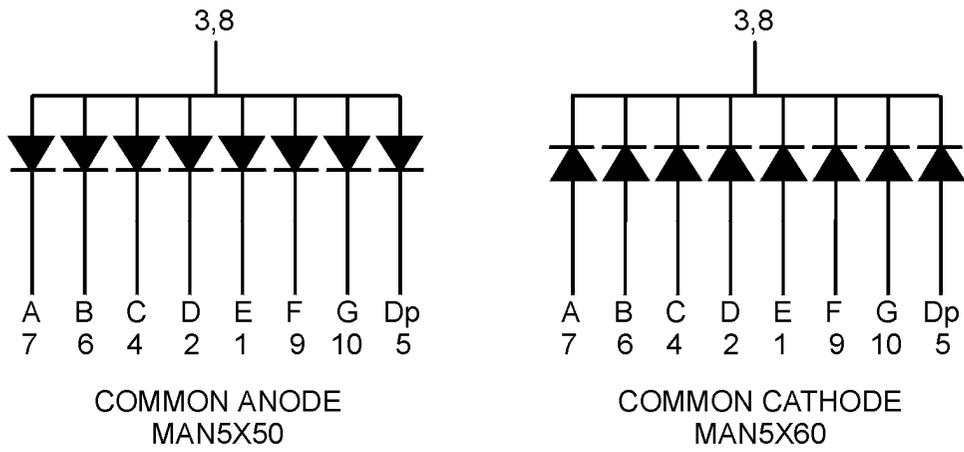
(2) Luminous intensity (ucd) = average light output per segment

(3) B = breakdown

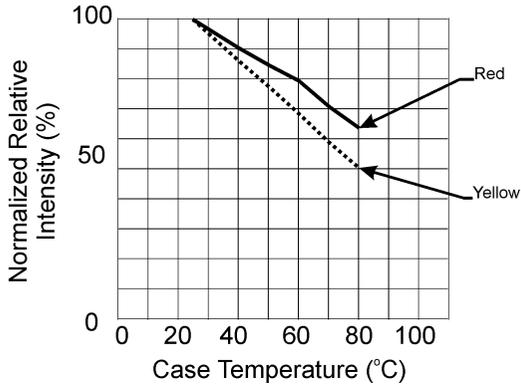
**PIN ORIENTATION, SEGMENT IDENTIFICATION, AND PRODUCT MARKING**



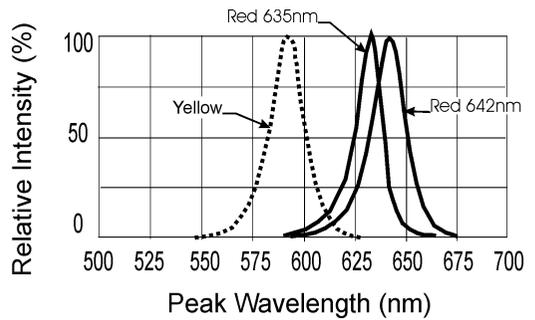
**SCHEMATICS**



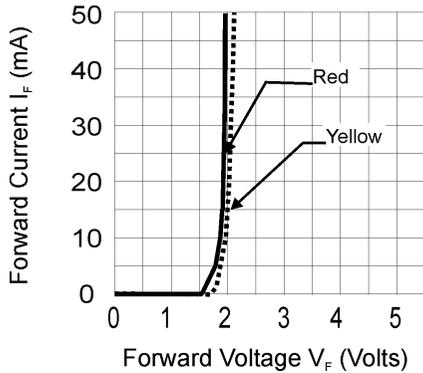
**GRAPHICAL DATA AllnGaP ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)**



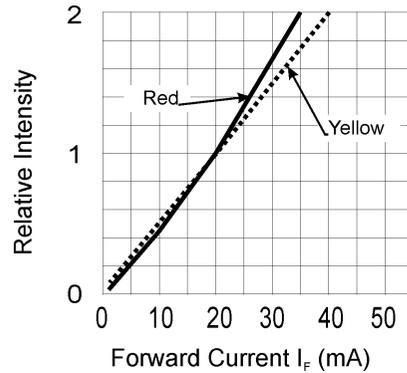
Relative Intensity vs Case Temp.



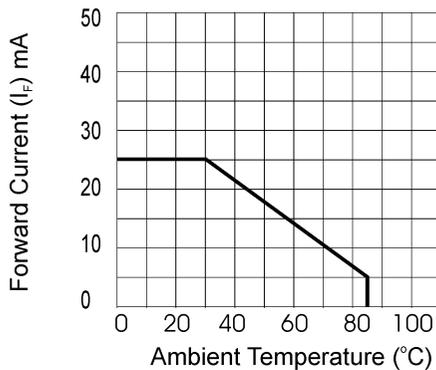
Spectral Response



Forward Current vs Forward Voltage



Luminous Intensity vs Forward Current



Maximum Forward Current vs Ambient Temperature



Maximum Peak Current vs Duty Cycle

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.