

**AllnGaP Red (630nm) MAN3H10, MAN3H40**

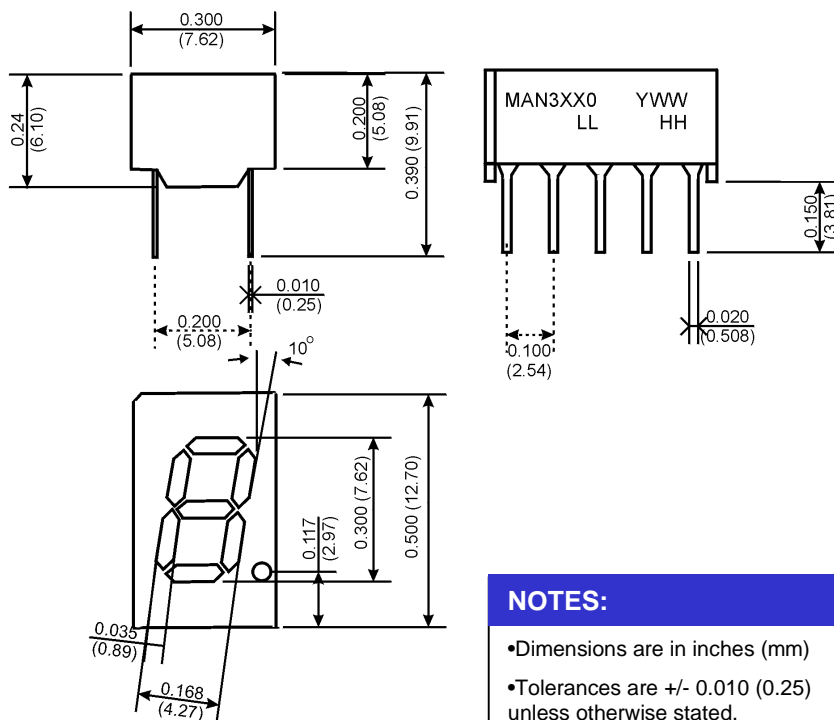
**AllnGaP Red (642nm) MAN3R10, MAN3R40**

**AllnGaP Yellow MAN3Y10, MAN3Y40**

**GaP Green MAN3G10, MAN3G40**

TR/QTS/030100-002

## PACKAGE DIMENSIONS



### NOTES:

- Dimensions are in inches (mm)
- Tolerances are  $\pm 0.010$  (0.25) 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	Recommended $I_F$ Levels
MAN3H10	AllnGaP 630nm	Single Digit, RHDP, Common Anode	Low Current (1mA - 5mA)
MAN3H40	AllnGaP 630nm	Single Digit, RHDP, Common Cathode	Low Current (1mA - 5mA)
MAN3R10	AllnGaP 642nm	Single Digit, RHDP, Common Anode	Low Current (1mA - 5mA)
MAN3R40	AllnGaP 642nm	Single Digit, RHDP, Common Cathode	Low Current (1mA - 5mA)
MAN3Y10	AllnGaP Yellow	Single Digit, RHDP, Common Anode	Low Current (1mA - 5mA)
MAN3Y40	AllnGaP Yellow	Single Digit, RHDP, Common Cathode	Low Current (1mA - 5mA)
MAN3G10	GaP Green	Single Digit, RHDP, Common Anode	Low Current (1mA - 5mA)
MAN3G40	GaP Green	Single Digit, RHDP, Common Cathode	Low Current (1mA - 5mA)

(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	MAN3H10	MAN3R10	MAN3Y10	MAN3G10	
Parameter	MAN3H40	MAN3R40	MAN3Y40	MAN3G40	Units
<b>Continuous Forward Current</b> (each segment)	25	25	25	25	mA
<b>Peak Forward Current</b> ( $F = 10\text{KHz}$ , $D/F = 1/10$ )	100	100	100	100	mA
<b>Power Dissipation (<math>P_D</math>)</b>	60	60	60	60	mW
<b>*Derate Linearly from <math>25^\circ\text{C}</math></b>	0.36	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	MAN3H10	MAN3R10	MAN3Y10	MAN3G10		
Parameter	MAN3H40	MAN3R40	MAN3Y40	MAN3G40	Units	Test Condition
<b>Luminous intensity<sup>(2)</sup> (<math>I_V</math>)</b>						
Minimum (Standard Current)	Note 4	Note 4	Note 4	1500	ucd	$I_F = 10\text{mA}$
Typical (Standard Current)	Note 4	Note 4	Note 4	2500	ucd	$I_F = 10\text{mA}$
Minimum (Low Current)	510	510	510	510	ucd	$I_F = 2\text{mA}$
Typical (Low Current)	1000	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	2.05	Volts	$I_F = 10\text{mA}$
Maximum (Standard Current)	2.45	2.45	2.45	2.45	Volts	$I_F = 10\text{mA}$
Typical (Low Current)	1.80	1.80	1.80	1.80	Volts	$I_F = 2\text{mA}$
Maximum (Low Current)	2.20	2.20	2.20	2.20	Volts	$I_F = 2\text{mA}$
<b>Peak Wavelength</b>	632	639	591	565	nm	$I_F = 10\text{mA}$
<b>Dominant Wavelength</b>	624	631	585	570	nm	$I_F = 10\text{mA}$
<b>Spectral Line 1/2 Width</b>	20	20	20	20	nm	$I_F = 10\text{mA}$
<b>Reverse B<sup>(3)</sup>.Voltage (<math>V_R</math>)</b>	5	5	5	5	Volts	$I_R = 100\mu\text{A}$

**NOTES:**

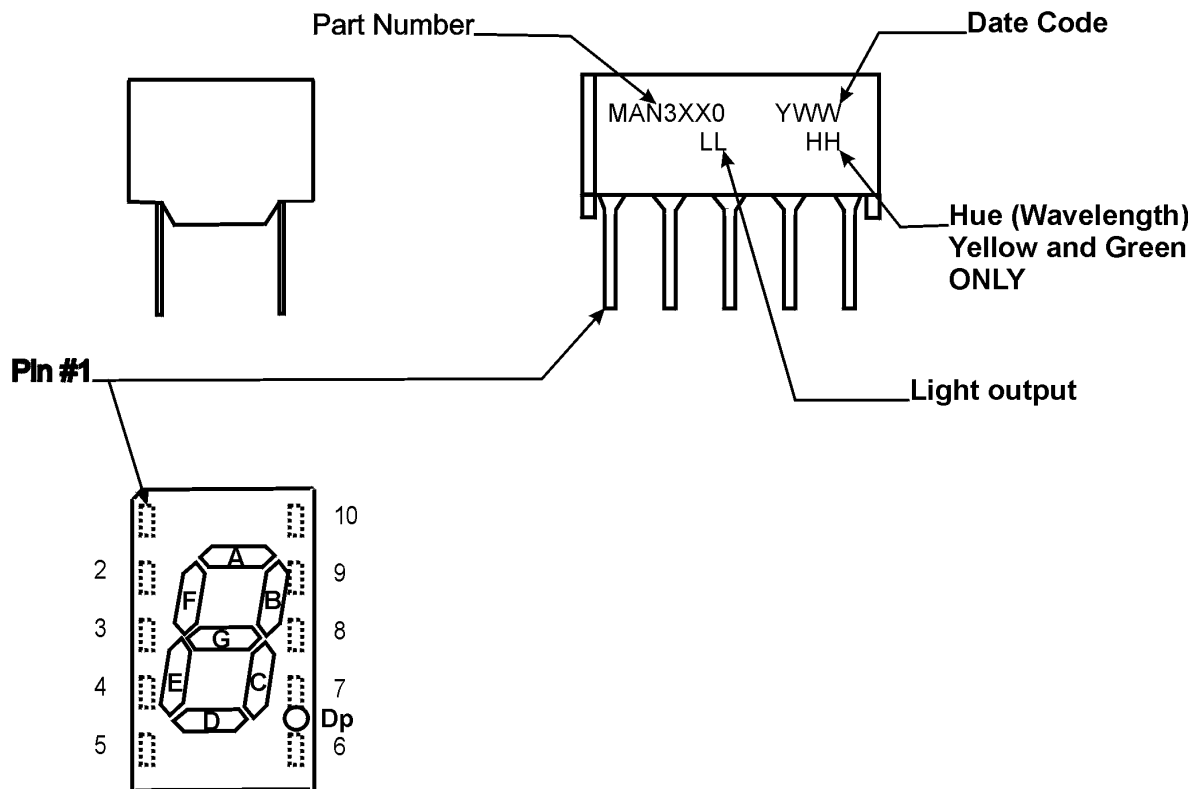
(1) Data per individual LED element

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

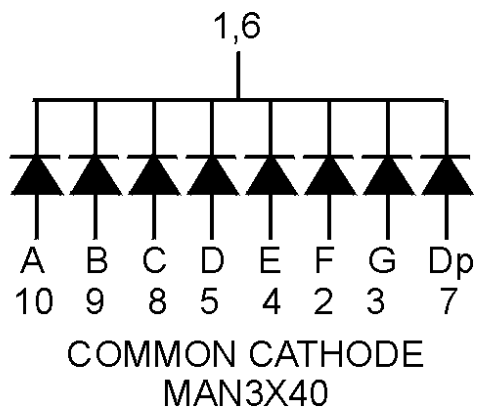
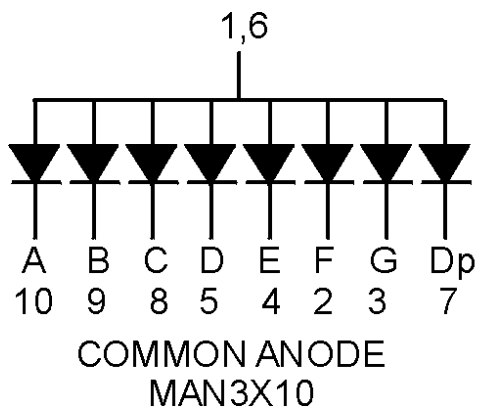
(3) B = breakdown

(4) High current operation of these Superbright Displays results in cross-talk (light bleed from a lit to a non lit segment) - maximum drive current recommended to contain cross-talk is 5mA

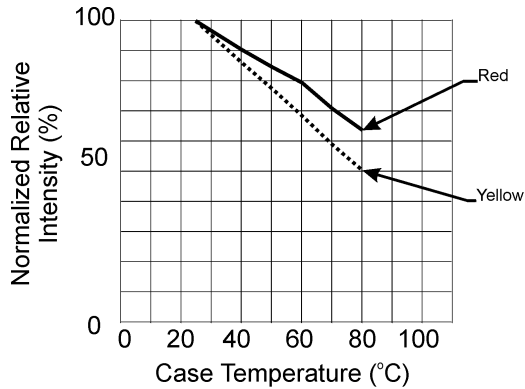
**PIN ORIENTATION, SEGMENT IDENTIFICATION, AND PRODUCT MARKING**



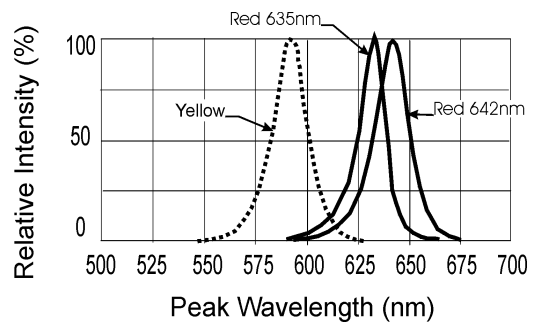
**SCHEMATICS**



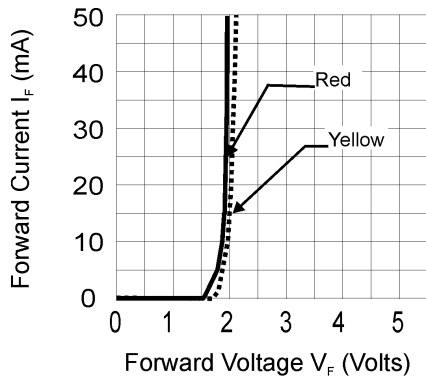
**GRAPHICAL DATA AlInGaP 630nm ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)**



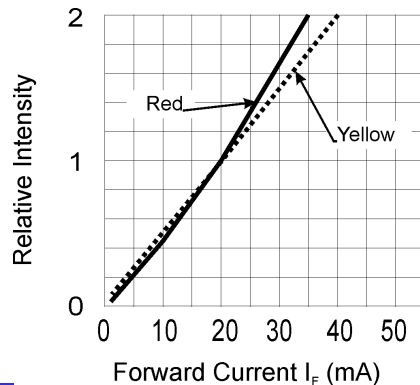
**Relative Intensity vs Case Temp.**



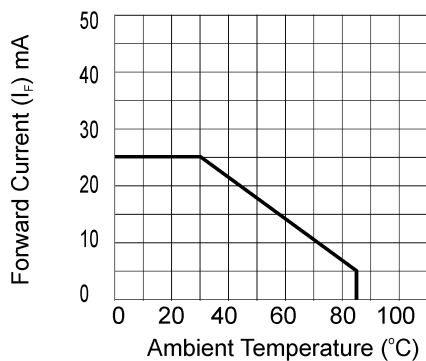
**Spectral Response**



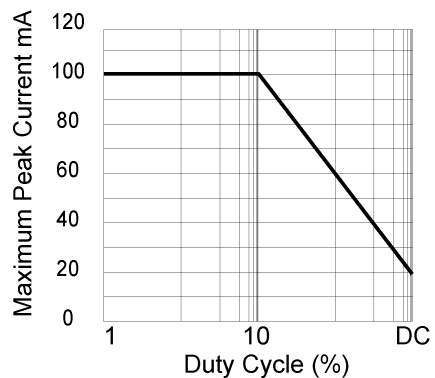
**Forward Current vs Forward Voltage**



**Luminous Intensity vs Duty Cycle**

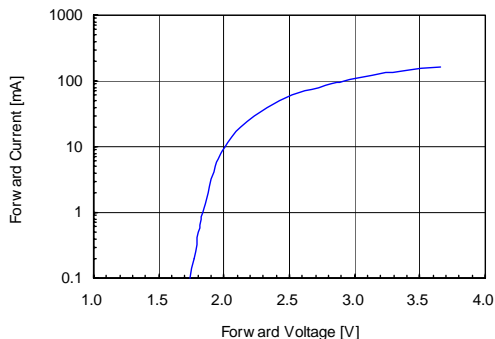


**Maximum Forward Current vs Ambient Temperature**

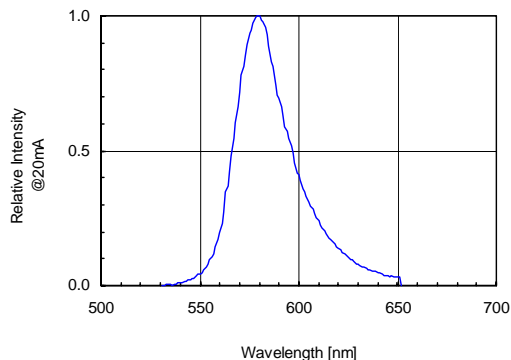


**Maximum Peak Current vs Duty Cycle**

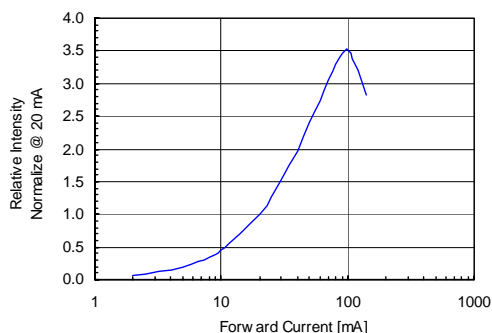
**GRAPHICAL DATA GaP Green ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)**



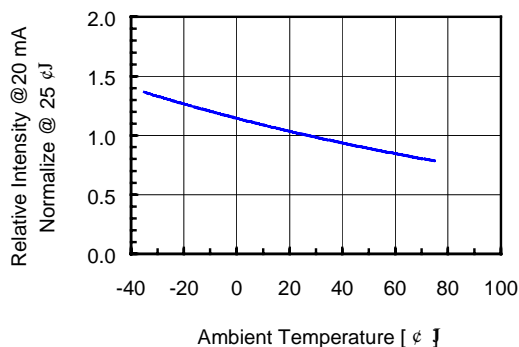
**Forward Current vs Forward Voltage**



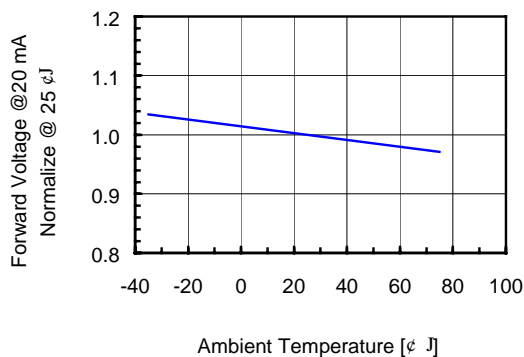
**Spectral Response**



**Relative Intensity vs Forward Current**



**Relative Intensity vs Ambient  
Temperature**



**Forward Voltage vs Ambient  
Temperature**



## 0.3 Inch (7.62mm) COMPACT LOW CURRENT NUMERIC FRAME DISPLAY

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