



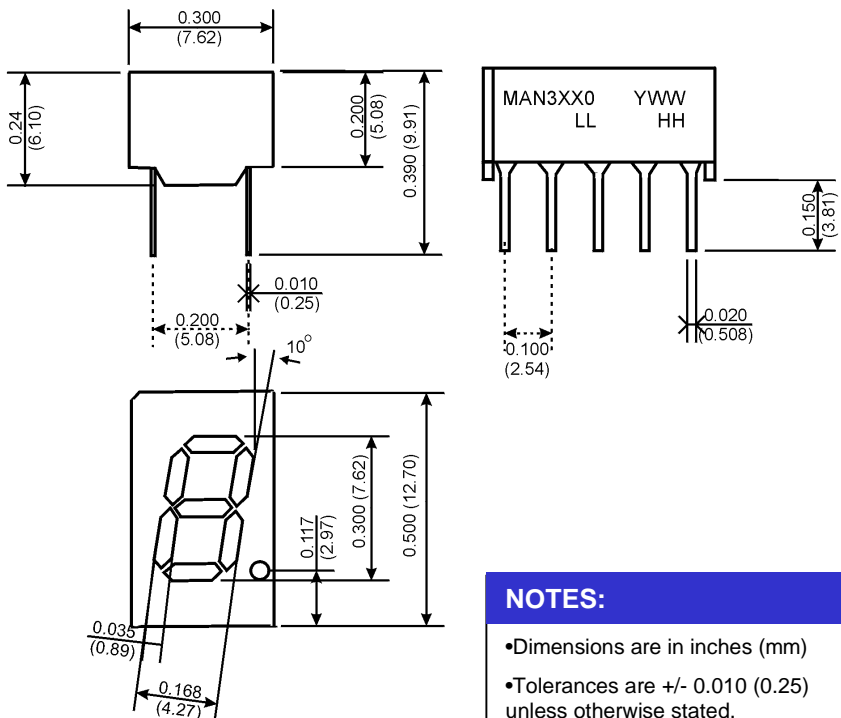
**THE DATASHEET OF  
MAN3G10**



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

**AllnGaP Red (630nm) MAN3H10, MAN3H40**  
**AllnGaP Red (642nm) MAN3R10, MAN3R40**  
**AllnGaP Yellow MAN3Y10, MAN3Y40**  
**GaP Green MAN3G10, MAN3G40**

TR/QTS/030100-002

PACKAGE DIMENSIONS	FEATURES																																				
 <p><b>NOTES:</b></p> <ul style="list-style-type: none"> <li>•Dimensions are in inches (mm)</li> <li>•Tolerances are +/- 0.010 (0.25) unless otherwise stated.</li> </ul>	<ul style="list-style-type: none"> <li>•Bright Bold Segments</li> <li>•Common Anode/Cathode</li> <li>•Low Power Consumption</li> <li>•Low Current Capability</li> <li>•Neutral Segments</li> <li>•Grey Face</li> <li>•Epoxy Encapsulated Frame</li> <li>•High Performance</li> <li>•High Reliability</li> </ul>																																				
<b>MODELS AVAILABLE</b>	<b>APPLICATIONS</b>																																				
<table border="1"> <thead> <tr> <th>Part Number</th> <th>Colour</th> <th>Description</th> <th>Recommended I<sub>F</sub> Levels</th> </tr> </thead> <tbody> <tr> <td>MAN3H10</td> <td>AllnGaP 630nm</td> <td>Single Digit, RHDP, Common Anode</td> <td>Low Current (1mA - 5mA)</td> </tr> <tr> <td>MAN3H40</td> <td>AllnGaP 630nm</td> <td>Single Digit, RHDP, Common Cathode</td> <td>Low Current (1mA - 5mA)</td> </tr> <tr> <td>MAN3R10</td> <td>AllnGaP 642nm</td> <td>Single Digit, RHDP, Common Anode</td> <td>Low Current (1mA - 5mA)</td> </tr> <tr> <td>MAN3R40</td> <td>AllnGaP 642nm</td> <td>Single Digit, RHDP, Common Cathode</td> <td>Low Current (1mA - 5mA)</td> </tr> <tr> <td>MAN3Y10</td> <td>AllnGaP Yellow</td> <td>Single Digit, RHDP, Common Anode</td> <td>Low Current (1mA - 5mA)</td> </tr> <tr> <td>MAN3Y40</td> <td>AllnGaP Yellow</td> <td>Single Digit, RHDP, Common Cathode</td> <td>Low Current (1mA - 5mA)</td> </tr> <tr> <td>MAN3G10</td> <td>GaP Green</td> <td>Single Digit, RHDP, Common Anode</td> <td>Low Current (1mA - 5mA)</td> </tr> <tr> <td>MAN3G40</td> <td>GaP Green</td> <td>Single Digit, RHDP, Common Cathode</td> <td>Low Current (1mA - 5mA)</td> </tr> </tbody> </table>	Part Number	Colour	Description	Recommended I <sub>F</sub> 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)	<ul style="list-style-type: none"> <li>•Appliances</li> <li>•Automotive</li> <li>•Instrumentation</li> <li>•Process Control</li> </ul>
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(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:**

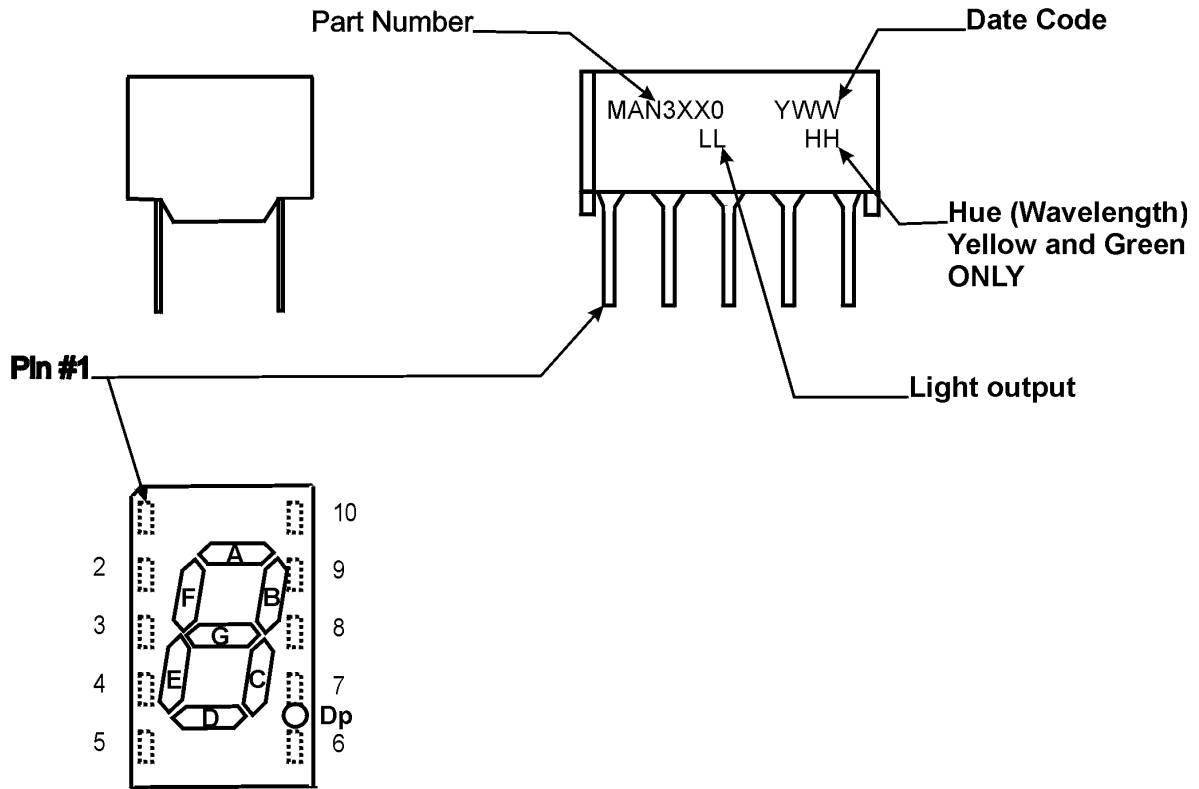
(1) Data per individual LED element

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

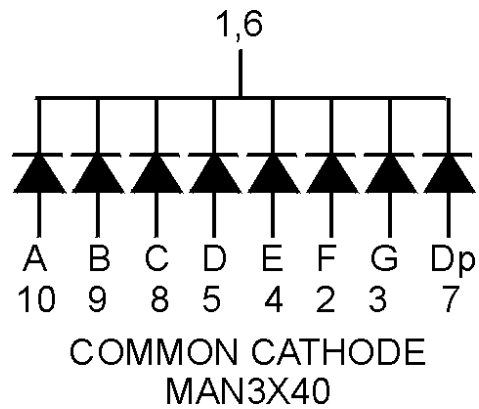
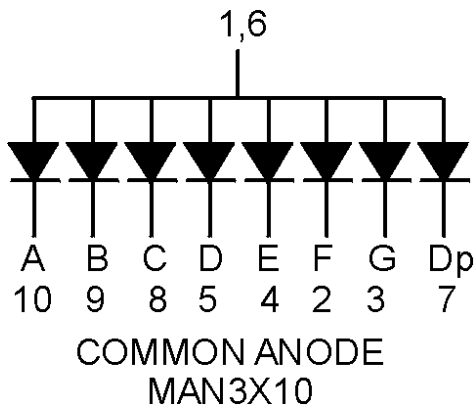
(3) B = breakdown

(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

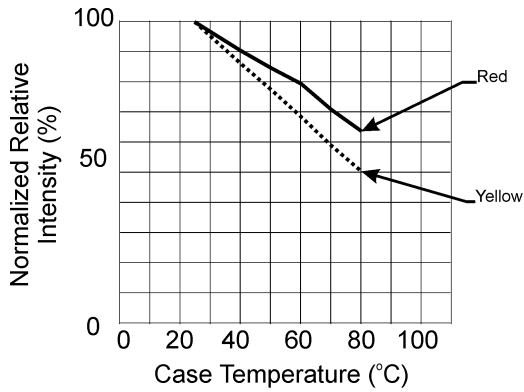
**PIN ORIENTATION, SEGMENT IDENTIFICATION, AND PRODUCT MARKING**



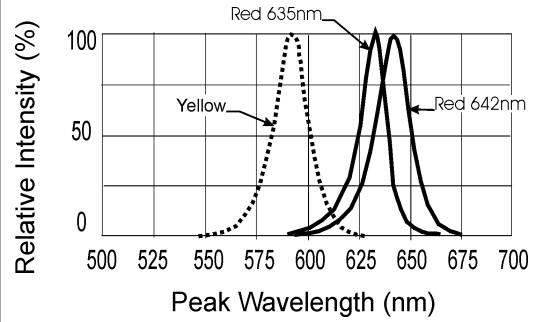
**SCHEMATICS**



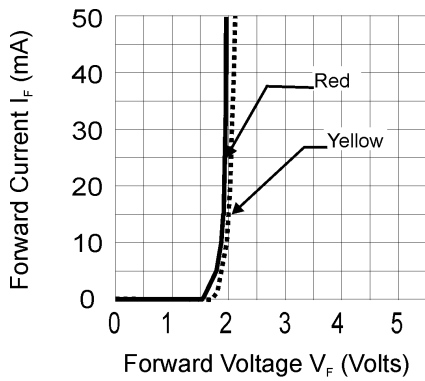
**GRAPHICAL DATA AlInGaP 630nm ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)**



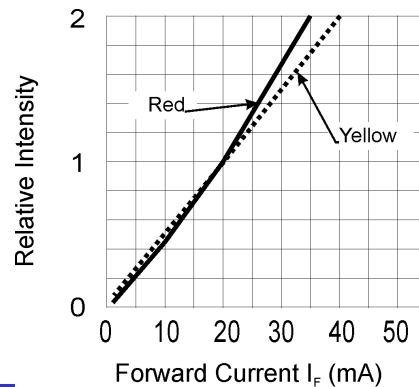
**Relative Intensity vs Case Temp.**



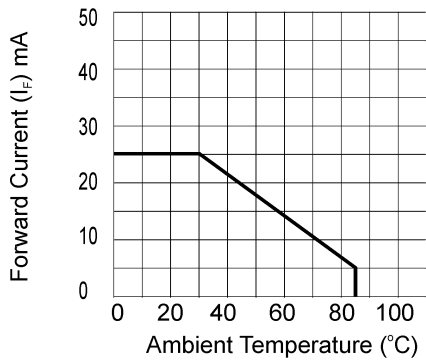
**Spectral Response**



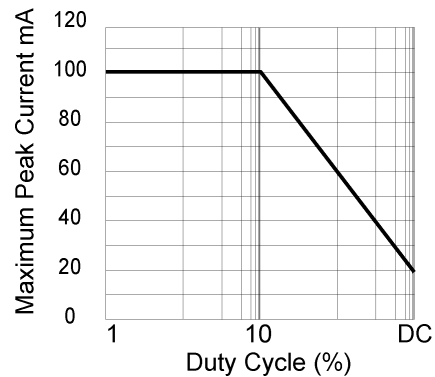
**Forward Current vs Forward Voltage**



**Luminous Intensity vs Duty Cycle**

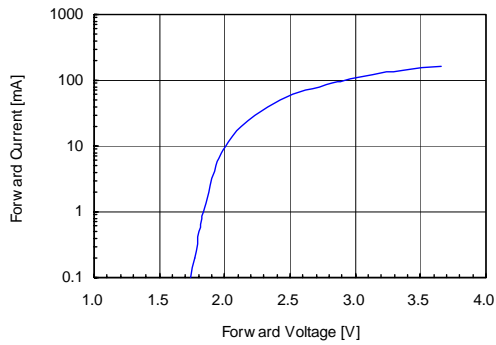


**Maximum Forward Current vs Ambient Temperature**

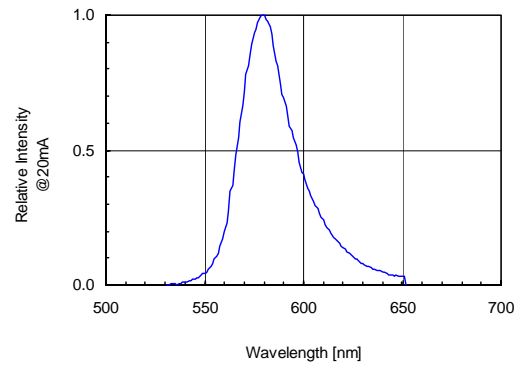


**Maximum Peak Current vs Duty Cycle**

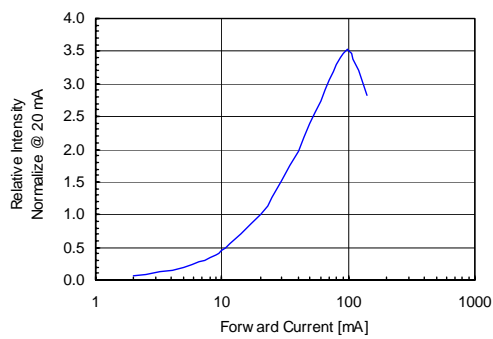
**GRAPHICAL DATA GaP Green ( $T_A = 25^\circ\text{C}$ , unless otherwise specified)**



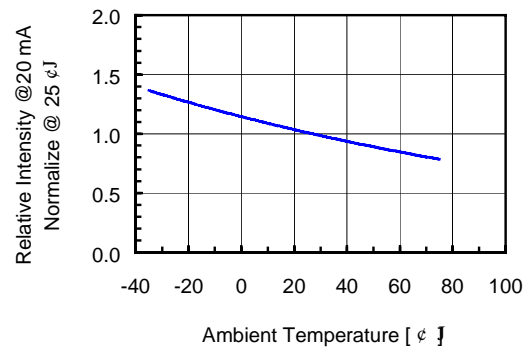
**Forward Current vs Forward Voltage**



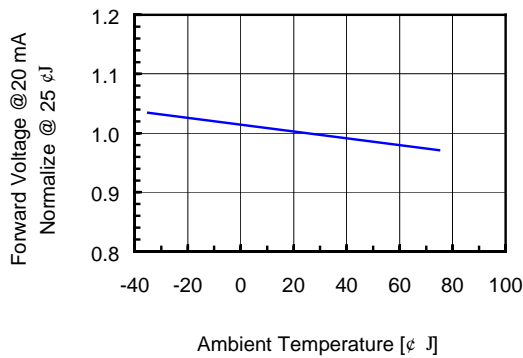
**Spectral Response**



**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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