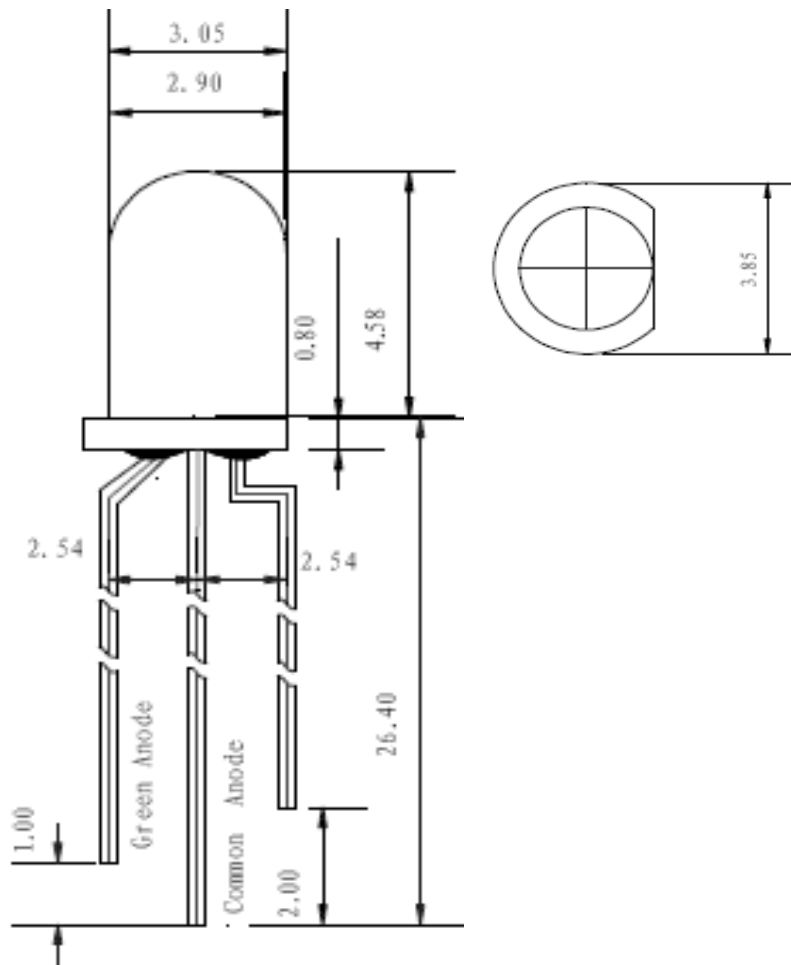




**Applications**

- Electronic Signs and Signals
- Small Area Illuminations
  - Back Lighting
  - Other Lighting

**Technical Drawing**



**Notes :**

All dimensions in mm tolerance is  $\pm 0.1\text{mm}$  unless otherwise noted.

|                  |                     |
|------------------|---------------------|
| <b>Round LED</b> |                     |
| <b>Red</b>       | <b>Yellow Green</b> |
| Part No.:        | <b>M13H9001</b>     |
| Customer:        |                     |

|       |     |      |      |        |       |       |            |
|-------|-----|------|------|--------|-------|-------|------------|
| DRW:  | Ron | CHKD | Lang | MATL:  | Chang | DATE  | 04.12.2009 |
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**Absolute Maximum Ratings**

Ta=25°C

| Item                   | Symbol            | GaP        | Unit |
|------------------------|-------------------|------------|------|
| Power Dissipation      | P <sub>D</sub>    | 50         | mW   |
| DC Forward Current     | I <sub>F</sub>    | 20         | mA   |
| Pulsed Forward Current | I <sub>FP</sub> * | 100        | mA   |
| Reverse Voltage        | V <sub>R</sub>    | 5          | V    |
| Operating Temperature  | T <sub>OP</sub>   | -30 to 80  | °C   |
| Storage Temperature    | T <sub>ST</sub>   | -40 to 100 | °C   |

\* 0.1 msec pulse, 10% duty cycle

**Electrical / Optical Characteristics**

I<sub>F</sub>=20mA Ta=25°C

| Emitting Color<br>Material | Red            |           | Yellow Green |                |
|----------------------------|----------------|-----------|--------------|----------------|
|                            | GaP            |           | GaP          |                |
| Forward Voltage            | typ.           | 2.0       | 2.3          | V <sub>F</sub> |
|                            | max.           | 2.4       | 2.5          | V <sub>F</sub> |
| Wavelength<br>typ.         | λ <sub>D</sub> | 620 ~ 625 | 567 ~ 572    | nm             |
|                            | λ <sub>P</sub> | 625 ~ 630 | 563 ~ 568    | nm             |
|                            | Δλ             | 10 ~ 15   | 15 ~ 20      | nm             |
| Color Temperature          | min.           | ---       | ---          | K              |
|                            | max.           | ---       | ---          | K              |
| Luminous Intensity *       | min.           | ---       | ---          | mcd            |
|                            | typ.           | 25        | 30           | mcd            |
| Reverse Current            | max.           | 50        |              | μA             |
| Viewing Angle              | 2Θ1/2          | 65        |              |                |

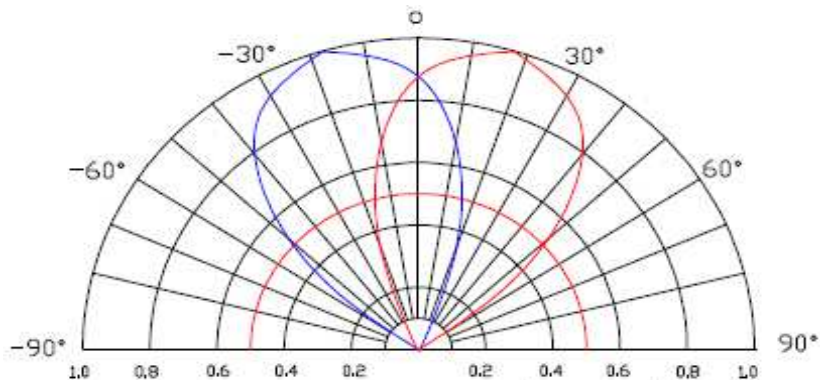
\* Per NIST standards

|                  |                     |
|------------------|---------------------|
| <b>Round LED</b> |                     |
| <b>Red</b>       | <b>Yellow Green</b> |
| Part No.:        | <b>M13H9001</b>     |
| Customer:        |                     |

|       |     |      |      |        |       |       |            |
|-------|-----|------|------|--------|-------|-------|------------|
| DRW:  | Ron | CHKD | Lang | MATL:  | Chang | DATE  | 04.12.2009 |
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**Directive Characteristics**



|                  |                     |
|------------------|---------------------|
| <b>Round LED</b> |                     |
| <b>Red</b>       | <b>Yellow Green</b> |
| Part No.:        | <b>M13H9001</b>     |
| Customer:        |                     |

|       |     |      |      |        |       |       |            |
|-------|-----|------|------|--------|-------|-------|------------|
| DRW:  | Ron | CHKD | Lang | MATL:  | Chang | DATE  | 04.12.2009 |
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**Curve**

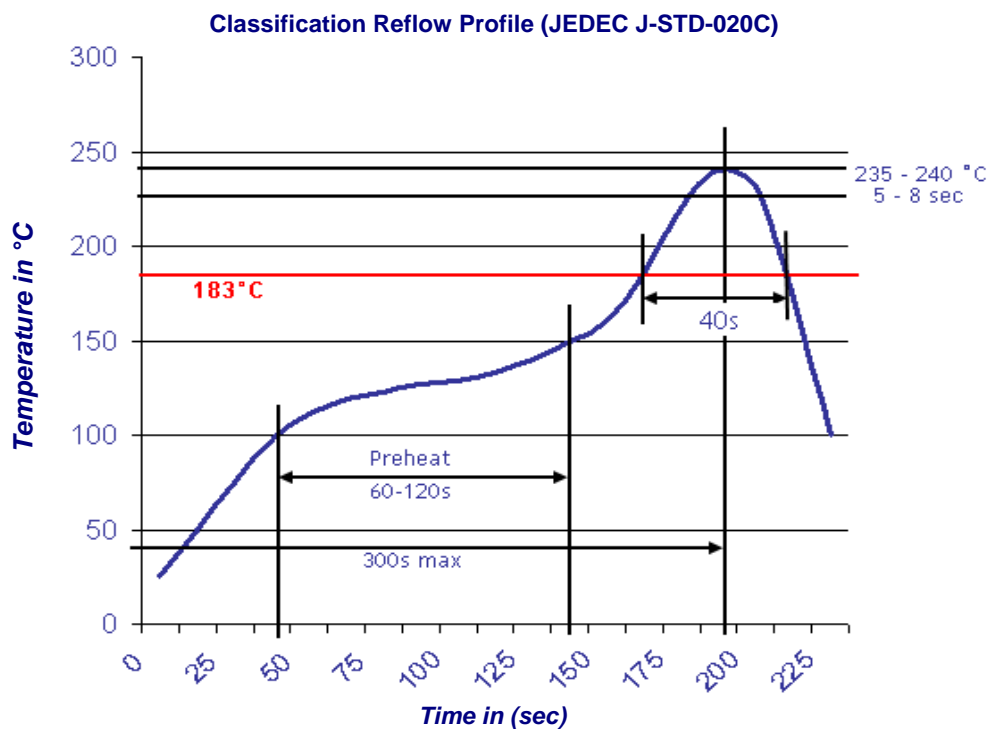
|  |                 |
|--|-----------------|
| <b>Round LED</b><br><i>Red</i> <i>Yellow Green</i> |                 |
| Part No.:  | <b>M13H9001</b> |
| Customer:  |                 |

|       |     |      |      |        |       |       |            |
|-------|-----|------|------|--------|-------|-------|------------|
| DRW:  | Ron | CHKD | Lang | MATL:  | Chang | DATE  | 04.12.2009 |
| APPD: | Xie |      |      | FINISH | Wang  | Sheet | 4 from 6   |



**Solder Condition**

**Lead Free Solder**

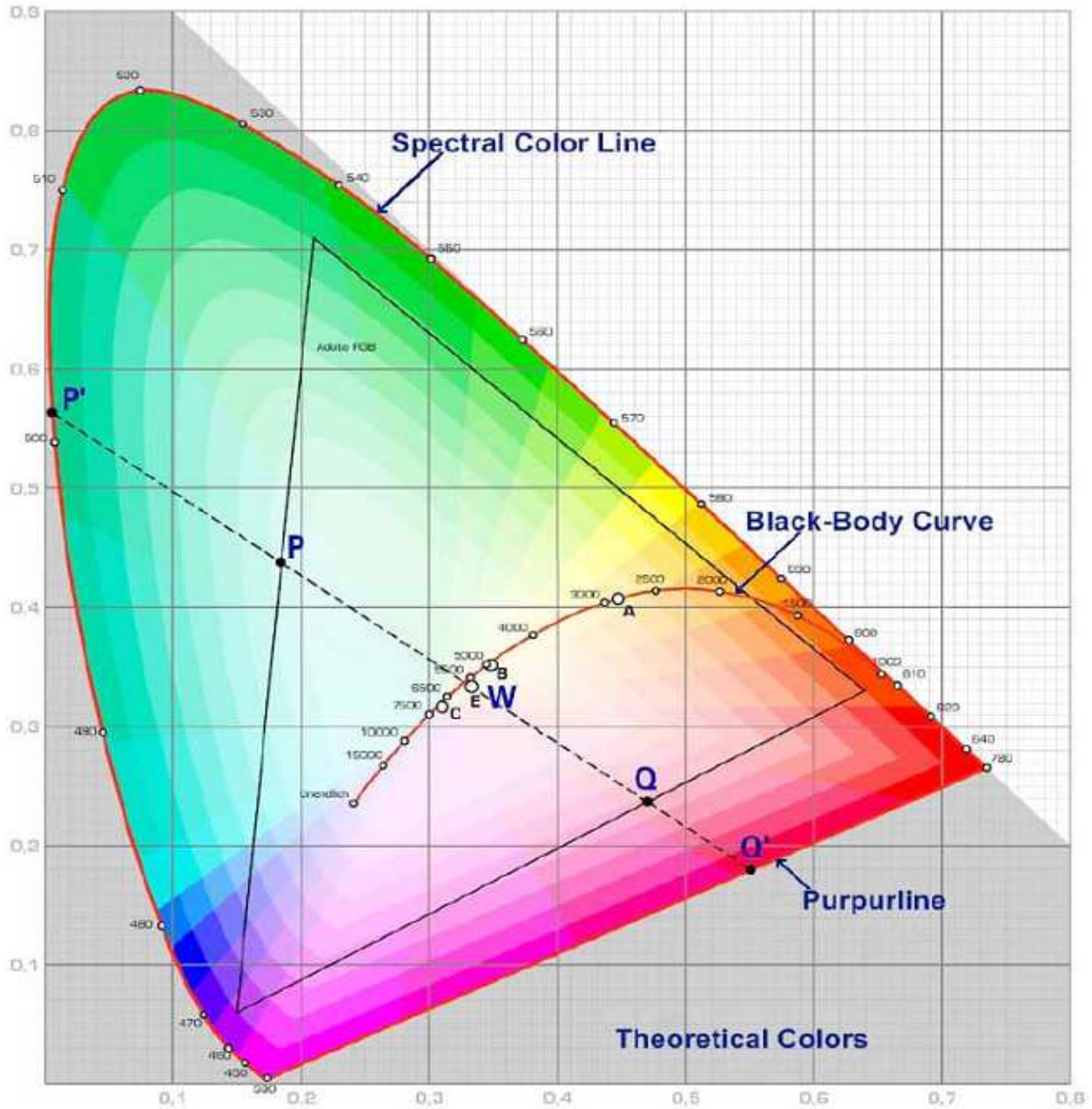


|                  |                     |
|------------------|---------------------|
| <b>Round LED</b> |                     |
| <b>Red</b>       | <b>Yellow Green</b> |
| Part No.:        | <b>M13H9001</b>     |
| Customer:        |                     |

|       |     |      |      |        |       |       |            |
|-------|-----|------|------|--------|-------|-------|------------|
| DRW:  | Ron | CHKD | Lang | MATL:  | Chang | DATE  | 04.12.2009 |
| APPD: | Xie |      |      | FINISH | Wang  | Sheet | 5 from 6   |



**Color table curve**



|                  |                     |
|------------------|---------------------|
| <b>Round LED</b> |                     |
| <b>Red</b>       | <b>Yellow Green</b> |
| Part No.:        | <b>M13H9001</b>     |
| Customer:        |                     |

|       |     |      |      |        |       |       |            |
|-------|-----|------|------|--------|-------|-------|------------|
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