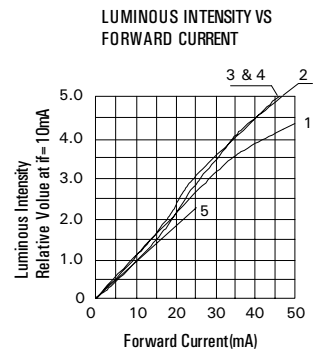
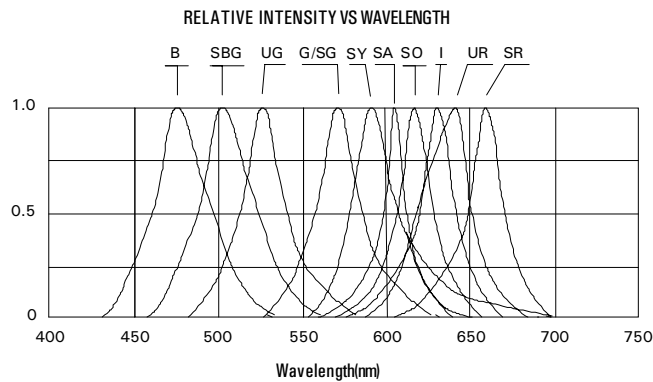
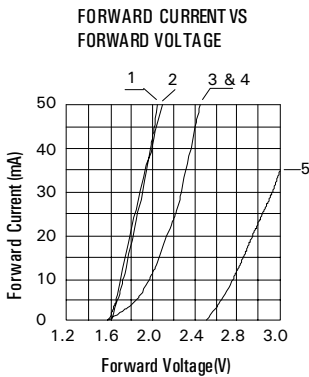


| PART NO.   |  |  | KLB10 I  | KLB10 SR        | KLB10 G | KLB10 SG     | KLB10 SY    | KLB10 SA       | KLB10 UR        | KLB10 SO       | KLB10 B/UB   | KLB10 BG        | KLB10 UG  | KLB10 W       |                |         |
|--|--|--|--|-----------------|---------|--------------|-------------|----------------|-----------------|----------------|--------------|-----------------|-----------|---------------|----------------|---------|
| OPERATING CHARACTERISTICS AT 25°C<br><small>(Bigger Display may have more than one LED chip per segment)</small> |  |  | UNITS  | SYMBOL          | IRE D I | SUPER RED SR | GREEN G     | SUPER GREEN SG | SUPER YELLOW SY | SUPER AMBER SA | ULTRA RED UR | SUPER ORANGE SO | BLUE B/UB | BLUE GREEN BG | ULTRA GREEN UG | WHITE W |
| Semiconductor Composition  |  |  |  |                 | AlGaAs  |              | GaP/AlInGaP |                | AllnGaP         |                |              | SiC / GalnN     |           |               |                |         |
| Forward Voltage - Typical @ 10mA   |  |  | V  | V <sub>F</sub>  | 2.10    | 1.90         | 2.20        | 2.20           | 2.10            | 2.10           | 1.90         | 1.90            | 3.50      | 3.50          | 3.50           | 3.50    |
| Forward Voltage - Maximum @ 20 mA  |  |  | V  | V <sub>FM</sub> | 2.40    | 2.10         | 2.60        | 2.40           | 2.40            | 2.40           | 2.10         | 2.40            | 4.50      | 4.50          | 4.50           | 4.50    |
| Reverse Current @ V <sub>R</sub> = 5V  |  |  | μA   | I <sub>R</sub>  | 100     | 100          | 100         | 100            | 100             | 100            | 100          | 100             | 100       | 100           | 100            | 100     |
| Peak Emission Wavelength   |  |  | nm   | λ <sub>p</sub>  | 630     | 660          | 568         | 568            | 590             | 610            | 645          | 620             | 470       | 502           | 525            | ---     |
| Emission Wavelength Half Width   |  |  | nm   | Δλ              | 35      | 20           | 30          | 15             | 15              | 15             | 20           | 20              | 25        | 30            | 35             | ---     |
| Luminous Intensity per Segment   |  |  | μcd  | I <sub>v</sub>  | 3500    | 6000         | 4000        | 6000           | 7000            | 7500           | 13000        | 13000           | 6000      | 7000          | 17000          | ---     |
| ABSOLUTE MAXIMUM RATINGS AT 25°C   |  |  |  |                 |         |              |             |                |                 |                |              |                 |           |               |                |         |
| Reverse Voltage  |  |  | V  | V <sub>R</sub>  | 5       | 5            | 5           | 5              | 5               | 5              | 5            | 5               | 5         | 5             | 5              | 5       |
| Forward Current (avg)  |  |  | mA   | I <sub>F</sub>  | 20      | 20           | 20          | 20             | 20              | 20             | 20           | 20              | 20        | 20            | 20             | 20      |
| Peak Forward Current (T<1μs)   |  |  | mA   | I <sub>FS</sub> | 80      | 80           | 80          | 80             | 80              | 80             | 80           | 80              | 80        | 80            | 80             | 80      |
| Operating / Storage Temperature Range  |  |  | -10° C to + 85° C                                      |                 |         |              |             |                |                 |                |              |                 |           |               |                |         |
| Lead Soldering Temperature   |  |  | < 260° C for 5 Seconds                                 |                 |         |              |             |                |                 |                |              |                 |           |               |                |         |
| Series Resistor to be used per segment   |  |  | : 300 Ohms @ 5V Supply (OR) 50 to 100 Ohms @ 3V Supply |                 |         |              |             |                |                 |                |              |                 |           |               |                |         |

**ELECTRICAL CHARACTERISTIC CURVES**



1. AlGaAs : I, SR

2. GaP : G

3 & 4. AllnGaP : SG, SY, SA, UR, SO

5. GalnN : B, BG, UG, W