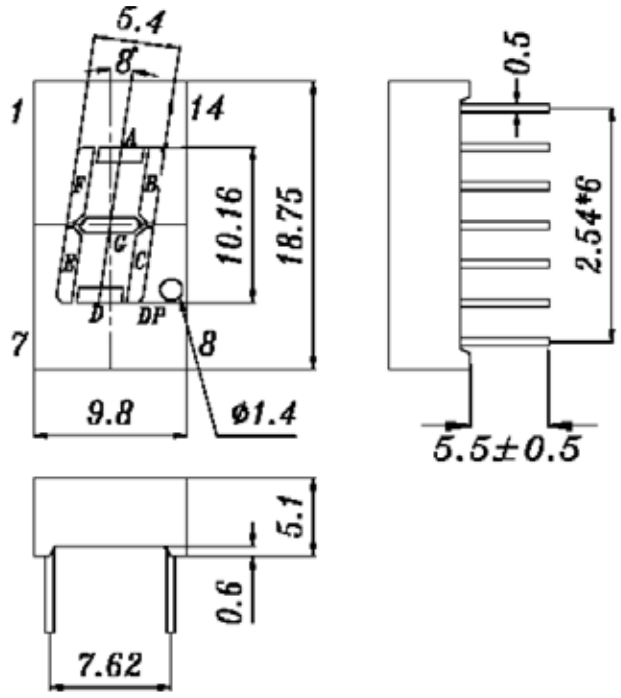
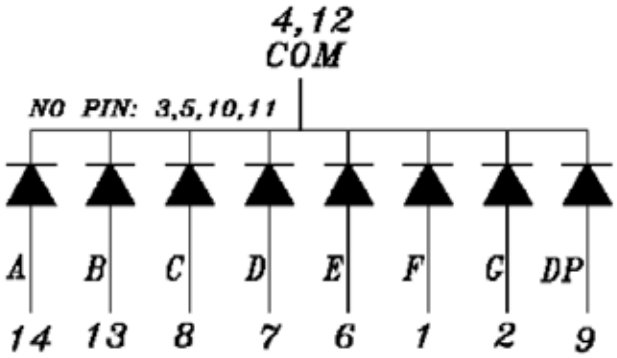
## SPECIFICATIONS CDSX40 SERIES

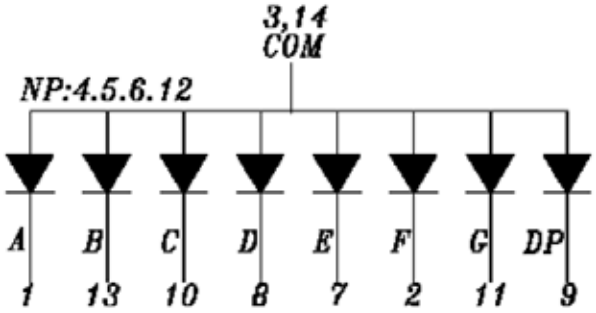
### PACKAGE DIMENSIONS




CDSC40 SERIES




CDSA40 SERIES




Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25mm (0.01”) unless otherwised noted.
3. Specifications are subject to change without notice.

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## PART NUMBER DESCRIPTION

| Part Number | Chip Material | Color of Emission | Lens Type | Description |
|---|---|---|---|---|
| CDSA40R1W | GaAsP | Red | White Segment | Common Anode |
| CDSC40R1W | GaAsP | Red | White Segment | Common Cathode |
| CDSA40RR1W | AlGaAs | Super Red | White Segment | Common Anode |
| CDSC40RR1W | AlGaAs | Super Red | White Segment | Common Cathode |
| CDSA40Y1W | GaAsP | Yellow | White Segment | Common Anode |
| CDSC40Y1W | GaAsP | Yellow | White Segment | Common Cathode |
| CDSA40G1W | GaP | Green | White Segment | Common Anode |
| CDSC40G1W | GaP | Green | White Segment | Common Cathode |

## OPTICAL-ELECTRICAL CHARACTERISTICS (TA=25°C)

| Part Number | Wave-length (nm) | Absolute Maximum | | | | Electro-Optical Characteristics | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Δλ | $P_D$ | $I_{AF}$ | $I_{PF}$ | $V_F$ (V) | | | $I_F$ | Iv (μcd) | |
| | | nm | mW | mA | (Peak) | Min | Typ | Max | (Rec) | Min | Typ |
| CDSA40R1W | 620 | 45 | 75 | 30 | 100 | 1.7 | 1.85 | 2.5 | 10 | 3000 | 8000 |
| CDSC40R1W | 620 | 45 | 75 | 30 | 100 | 1.7 | 1.85 | 2.5 | 10 | 3000 | 8000 |
| CDSA40RR1W | 645 | 20 | 72 | 30 | 100 | 1.6 | 1.75 | 2.4 | 10 | 8000 | 18000 |
| CDSC40RR1W | 645 | 20 | 72 | 30 | 100 | 1.6 | 1.75 | 2.4 | 10 | 8000 | 18000 |
| CDSA40Y1W | 590 | 35 | 75 | 30 | 100 | 1.7 | 1.9 | 2.5 | 10 | 1900 | 4700 |
| CDSC40Y1W | 590 | 35 | 75 | 30 | 100 | 1.7 | 1.9 | 2.5 | 10 | 1900 | 4700 |
| CDSA40G1W | 570 | 30 | 65 | 25 | 100 | 1.7 | 2.1 | 2.6 | 10 | 3100 | 10500 |
| CDSC40G1W | 570 | 30 | 65 | 25 | 100 | 1.7 | 2.1 | 2.6 | 10 | 3100 | 10500 |

## ABSOLUTE MAXIMUM RATINGS (TA=25°C)

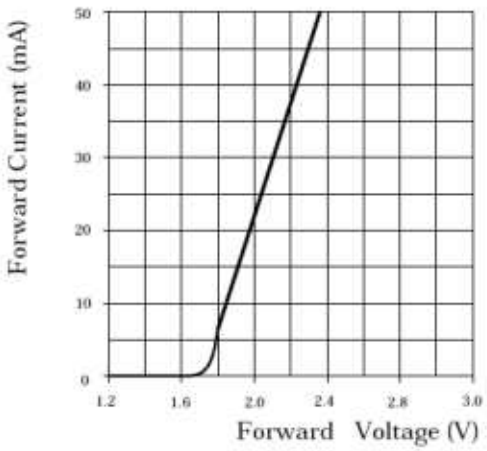
| | | | |
|---|---|---|---|
| Reverse Voltage | 5V | Spectral Line half-width (λ) | nm |
| Reverse Current (Vr = 5V) | 100μA | Power Dissipation ($P_D$) | mW |
| Operating Temperature | -40˚C~+85˚C | Peak Forward Current (Duty 1/10, @ KHz) | mA |
| Storage Temperature | -40˚C~+85˚C | Recommended Operation Current ($I_F$ Rec) | mA |
| Soldering Temperature | 250C~260C for 3 sec. | Average Luminous Intensity ($I_F$=10) | μA |

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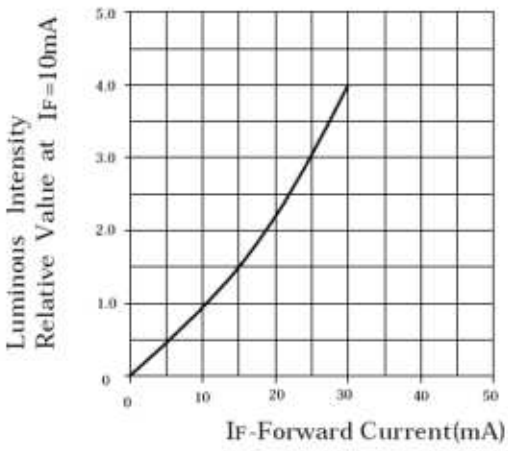
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## OPTICAL CHARACTERISTIC CURVES - RED

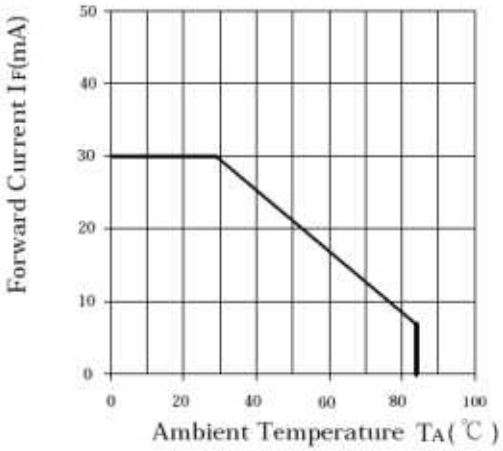
Forward Current vs. Forward Voltage



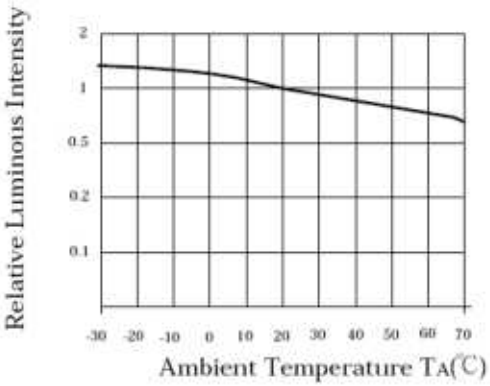

Relative Intensity vs. Forward Current




Forward Current vs. Ambient Temperature



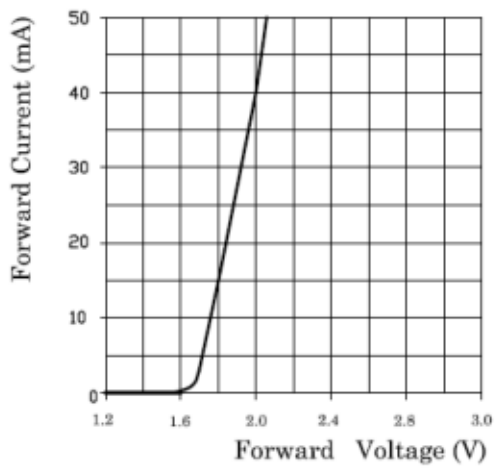

Luminous Intensity vs. Ambient Temperature



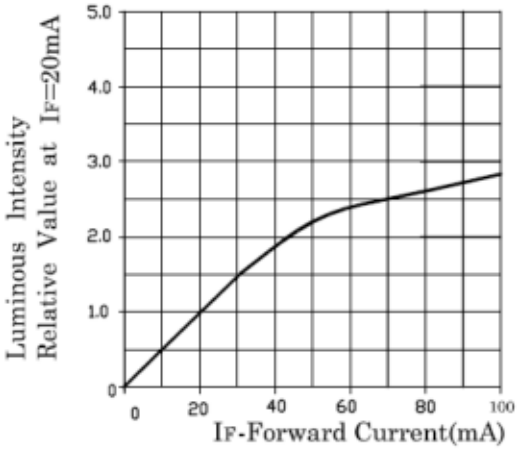

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## OPTICAL CHARACTERISTIC CURVES - SUPER RED

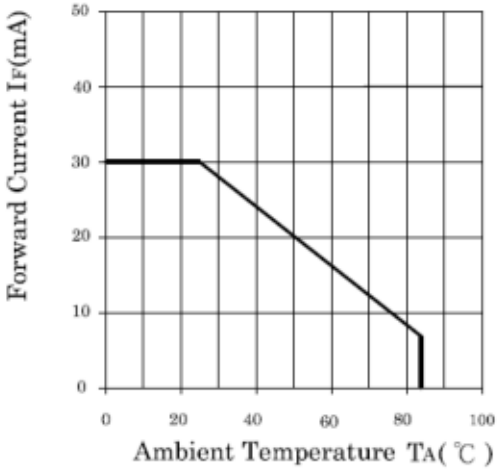
Forward Current vs. Forward Voltage



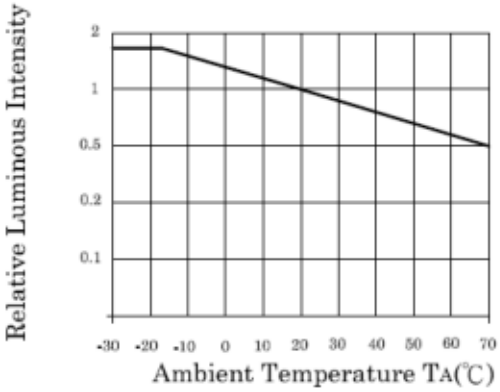

Relative Intensity vs. Forward Current




Forward Current vs. Ambient Temperature




Luminous Intensity vs. Ambient Temperature

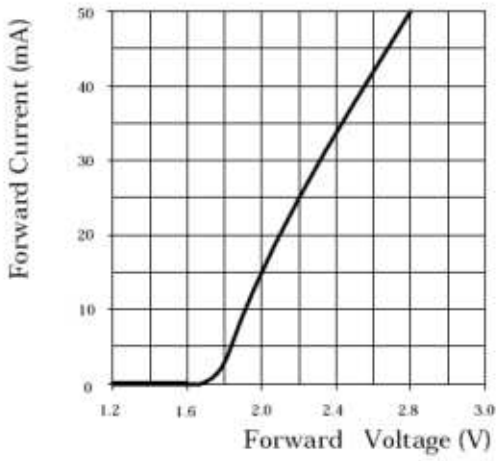



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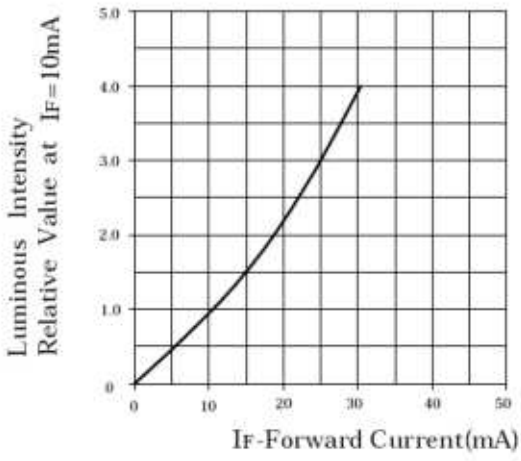
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# OPTICAL CHARACTERISTIC CURVES - YELLOW

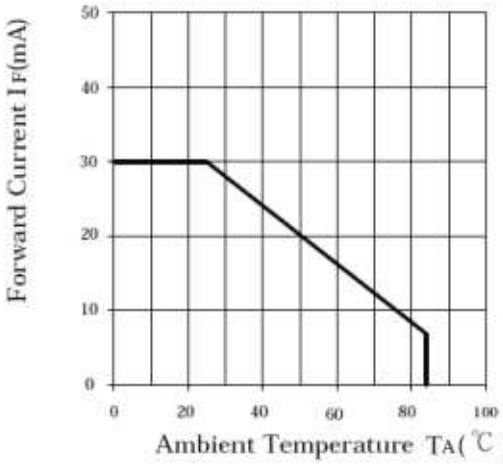
Forward Current vs. Forward Voltage



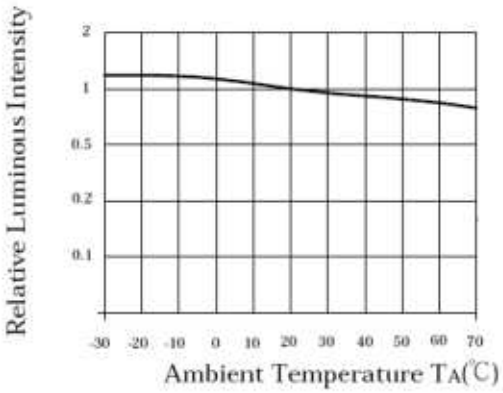

Relative Intensity vs. Forward Current




Forward Current vs. Ambient Temperature




Luminous Intensity vs. Ambient Temperature

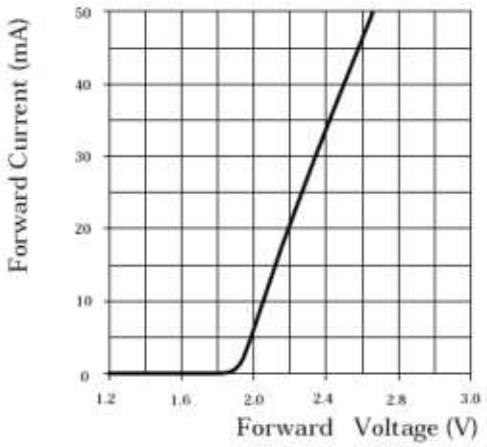



RoHS Compliant
Lead Free

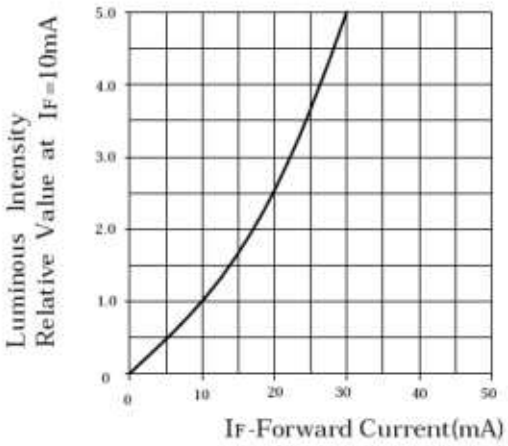
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# OPTICAL CHARACTERISTIC CURVES - GREEN

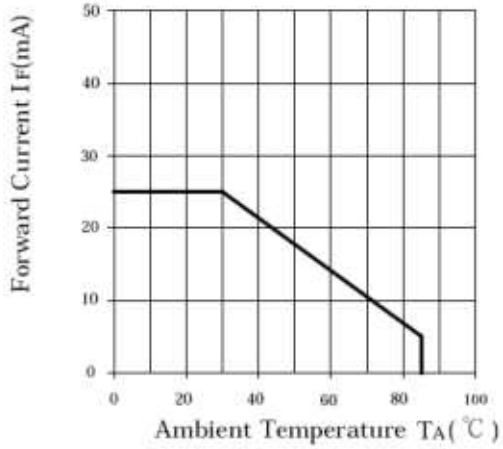
Forward Current vs. Forward Voltage



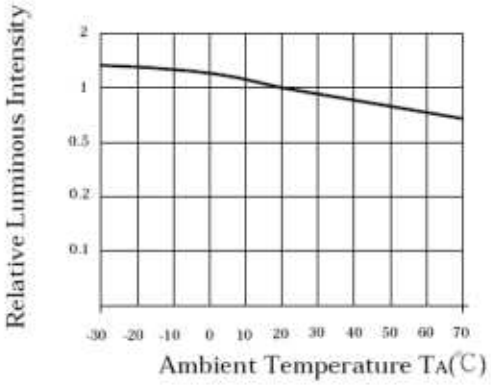

Relative Intensity vs. Forward Current




Forward Current vs. Ambient Temperature




Luminous Intensity vs. Ambient Temperature




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## SOLDERING CONDITIONS - DISPLAY

* Solder the LED no closer than 3mm from the base of the epoxy bulb. Soldering beyond the base of the tie bar is recommended.

* Recommended soldering conditions

| Dip Soldering | |
|---|---|
| Pre-Heat | 100 ˚C Max |
| Pre-Heat Time | 60 Second Max |
| Solder Bath Temperature | 260 ˚C Max |
| Dippng Time | 5 Second Max |
| Dipping Position | No lower than 3mm from the base of the epoxy |

| Hand Soldering | | |
|---|---|---|
| | 3mm Series | Others |
| Temperature Soldering Time Position | 300 ˚C Max<br>3 Second Max<br>No closer than 3mm from the base of the epoxy | 350 ˚C Max<br>3 Second Max<br>No closer than 3mm from the base of the epoxy |

* Do not apply any stress to the lead. Particularly when heated.

* The LED must not be repositioned after soldering.

* After soldering the LEDs, the epoxy bulb should be protected from mechanical shock or vibration until the LEDs return to room temperature.

* Direct soldering onto a PC board should be avoided. Mechanical stress to the resin may be caused by the PC board warping or from the clinching and cutting of the leadframes. When it is absolutely necessary, the LEDs may be mounted in this fashion, but, the user will assume responsibility for any problems. Direct soldering should only be done after testing has confirmed that no damage, such as wire bond failure or resin deterioration, will occur. LEDs should not be soldered directly to double sided PC boards because the heat will deteriorate the epoxy resin.

* When it is necessary to clamp the LEDs to prevent soldering failure, it is important to minimize the mechanical stress on the LEDs.

* Cut the LED leadframes at room temperature. Cutting the leadframes at high temperature may cause LED failure.

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