# ヨVBRLICHI AMERICAS 

## DATASHEET

## EADCF040RA5



Features:

- Industrial standard size.
- Low power consumption.
- Categorized for luminous intensity.
- Pb free
- The product itself will remain within RoHS compliant version
- Descriptions:
- The EADCF040 series is a large 10.16
mm ( $0.4^{4}$ "high seven segment display
designed for viewing distances up to
7 meters.
- These displays provide excellent
reliability in bright ambient light.
- These devices are made with white
segments and black surface.

Applications :

- Audio equipment
- Instrument panels
- Digital read out display

| PART NO. | Chip |  |
| :---: | :---: | :---: |
|  | Material | Emitted Color |
| EADCF040RA5 | AlGaInP | Brilliant Red |

Package Dimensions



$$
\begin{aligned}
& \text { COMMON CATHODE } \\
& 1 \text { COMMON CATHODE D1 } \\
& 2 \text { COMMON CATHODE D2 } \\
& 3 \text { ANODE D } \\
& 4 \text { COMMON CATHODE L1,L2 } \\
& 5 \text { ANODE E } \\
& 6 \text { COMMON CATHODE } \\
& 7 \text { ANODE DP } \\
& 8 \text { COMMON CATHODE D4 } \\
& 9 \text { ANODE L3 } \\
& 10 \text { CATHODE L3 } \\
& 11 \text { ANODE F } \\
& 12 \text { ANODE L1,L2 } \\
& 13 \text { ANODE C } \\
& 14 \text { ANODE A } \\
& 15 \text { ANODE G } \\
& 16 \text { ANODE B }
\end{aligned}
$$



Notes: 1.All dimensions are in millimeters , tolerance is 0.25 mm unless otherwise noted.
2.Above specification may be changed without notice.

Supplier will reserve authority on material change for above specification.

Absolute maximum ratings at $\mathrm{Ta}=25^{\circ} \mathrm{C}$ :

| Parameter | Symbol | Rating | Unit |
| :---: | :---: | :---: | :---: |
| Reverse Voltage | VR | 5 | V |
| Forward Current | IF | 25 | mA |
| Operating Temperature | Topr | -40 to +85 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature | Tstg | -40 to +100 | ${ }^{\circ} \mathrm{C}$ |
| Soldering Temperature $*$ | Tsol | $260 \pm 5$ | ${ }^{\circ} \mathrm{C}$ |
| Electrostatic Discharge | ESD | 2000 | V |
| Power Dissipation | Pd | 60 | mW |

Note: *Soldering time $\leqq 5$ seconds.
Electronic optical characteristics :

| Parameter |  | Symbol | Min. | Typ. | Max. | Unit | Condition |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Luminous Intensity |  | Iv | ---- | 2.5 | -- | mcd | $\mathrm{IF}=2 \mathrm{~mA}$ |
|  |  |  | 5.6 | 12.5 | ---- | mcd | $\mathrm{IF}=10 \mathrm{~mA}$ |
|  | Per decimal point |  | ---- | 0.8 | ---- | mcd | $\mathrm{IF}=2 \mathrm{~mA}$ |
|  |  |  | 1.2 | 2.8 | ---- | mcd | $\mathrm{IF}=10 \mathrm{~mA}$ |
| Peak Wavelength |  | $\lambda \mathrm{p}$ | ---- | 632 | ---- | nm | $\mathrm{IF}=2 \mathrm{~mA}$ |
| Dominant Wavelength |  | $\lambda \mathrm{d}$ | ---- | 624 | ---- | nm | $\mathrm{IF}=20 \mathrm{~mA}$ |
| Spectrum Radiation Bandwidth |  | $\triangle \lambda$ | ---- | 20 | ---- | nm | $\mathrm{IF}=20 \mathrm{~mA}$ |
| Forward Voltage |  | VF | ---- | 2.0 | 2.4 | V | $\mathrm{IF}=20 \mathrm{~mA}$ |
| Reverse Current |  | IR | ---- | ---- | 100 | $\mu \mathrm{A}$ | $\mathrm{VR}=5 \mathrm{~V}$ |

Typical Electro-Optical Characteristic Curves:


Spectrum Distribution


Forward Current vs
Forward Voltage


Forward Current Derating Curve


Reliability test items and conditions:
The reliability of products shall be satisfied with items listed below.
Confidence level : 97\%
LTPD : 3\%

| NO | Item | Test Conditions | Test Hours/Cycle | Sample Size | Failure <br> Judgment Criteria | Ac/Re |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Solder Heat | TEMP : $260^{\circ} \mathrm{C} \pm 5^{\circ} \mathrm{C}$ | 5 SEC | 76 PCS | $\begin{gathered} \mathrm{Iv} \leqq \mathrm{Ivt} * 0.5 \\ \text { or } \\ \mathrm{Vf} \geqq \mathrm{U} \\ \text { or } \\ \mathrm{Vf} \leqq \mathrm{~L} \end{gathered}$ | 0/1 |
| 2 | Temperature Cycle | $\begin{aligned} & \mathrm{H}:+85^{\circ} \mathrm{C} 30 \mathrm{~min} \\ & \int 5 \mathrm{~min} \\ & \mathrm{~L}:-55^{\circ} \mathrm{C} 30 \mathrm{~min} \\ & \hline \end{aligned}$ | 50 CYCLE | 76 PCS |  | 0/1 |
| 3 | Thermal Shock | $\begin{gathered} \mathrm{H}:+100^{\circ} \mathrm{C} 5 \mathrm{~min} \\ \mathrm{\int} 10 \mathrm{sec} \\ \mathrm{~L}:-10^{\circ} \mathrm{C} 5 \mathrm{~min} \\ \hline \end{gathered}$ | 50 CYCLE | 76 PCS |  | 0/1 |
| 4 | High Temperature Storage | TEMP : $100^{\circ} \mathrm{C}$ | 1000 HRS | 76 PCS |  | 0/1 |
| 5 | Low Temperature Storage | TEMP : $-55^{\circ} \mathrm{C}$ | 1000 HRS | 76 PCS |  | 0/1 |
| 6 | DC Operating Life | $\mathrm{IF}=10 \mathrm{~mA}$ | 1000 HRS | 76 PCS |  | 0/1 |
| 7 | High Temperature / High Humidity | $85^{\circ} \mathrm{C} / 85 \% \mathrm{RH}$ | 1000 HRS | 76 PCS |  | 0/1 |

Note : Ivt : The test Iv value of the chip before the reliablility test
Iv : The test value of the chip that has completed the reliablility test
U : Upper Specification Limit
L : Lower Specification Limit

Packing Quantity Specification

1. $12 \mathrm{PCS} /$ tube, 28 tubes/box
2. 4Boxes/Carton

Label Form Specification


CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Dominant Wavelength
REF: Reference
LOT No: Lot Number
Reference:Volume label code

Notes:

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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