

BRIGHT LED ELECTRONICS CORP.

LED DISPLAY SPECIFICATION

●COMMODITY : 0.40"(10.10mm) SINGLE DIGIT LED DISPLAY

●DEVICE NUMBER : BS-A403RD

VERSION : 1.0 / 1998/11/17

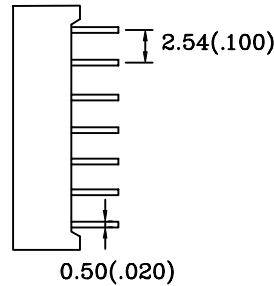
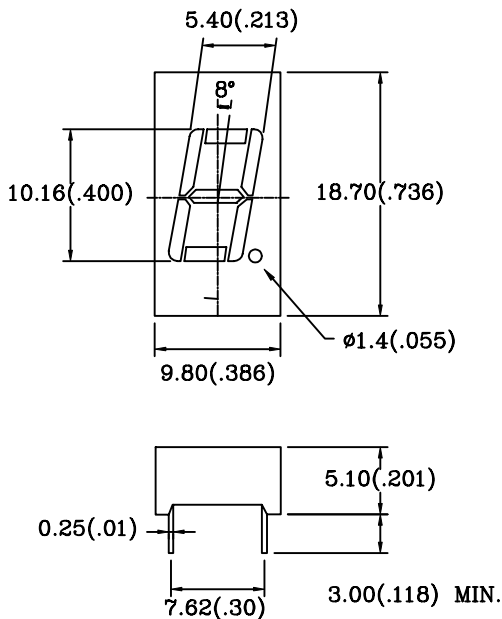
●ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta=25°C)

| Chip | | Absolute Maximum Rating | | | | Electro-optical Data (At 10mA) | | | Surface Color | Segment Color |
|---------------|--------------------------------------|--------------------------|------------|------------|-------------|--------------------------------|------|------------------|---------------|---------------|
| Emitted Color | Peak Wave Length λP (nm) | $\Delta \lambda$ (nm) | Pd (mW) | If (mA) | Peak If(mA) | Vf(V) | | Iv Typ. (mcd) | | |
| | | | | | | Typ. | Max. | | | |
| Yellow | 585 | 35 | 100 | 30 | 150 | 2.0 | 2.5 | 1.2 | Black | White |

●ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

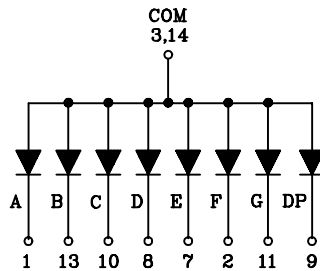
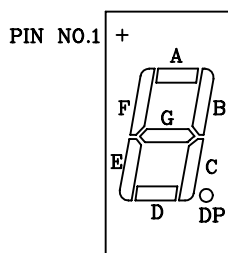
Reverse Voltage 5V
 Reverse Current (-Vr=5V) 50 μ A
 Operating Temperature Range -40°C ~ 80°C
 Storage Temperature Range -40°C ~ 85°C
 Lead Soldering Temperature (1/16" From Body).....260°C For 5 Seconds

PACKAGE DIMENSIONS:



NOTES:
 1.All dimensions are in millimeters(inches).
 2.Tolerance is ± 0.25 mm(.01") unless otherwise specified.
 3.Specifications are subject to change without notice.

PIN FUNCTIONS:



NP:4,5,6,12.

RELEASED:



ENGINEER:

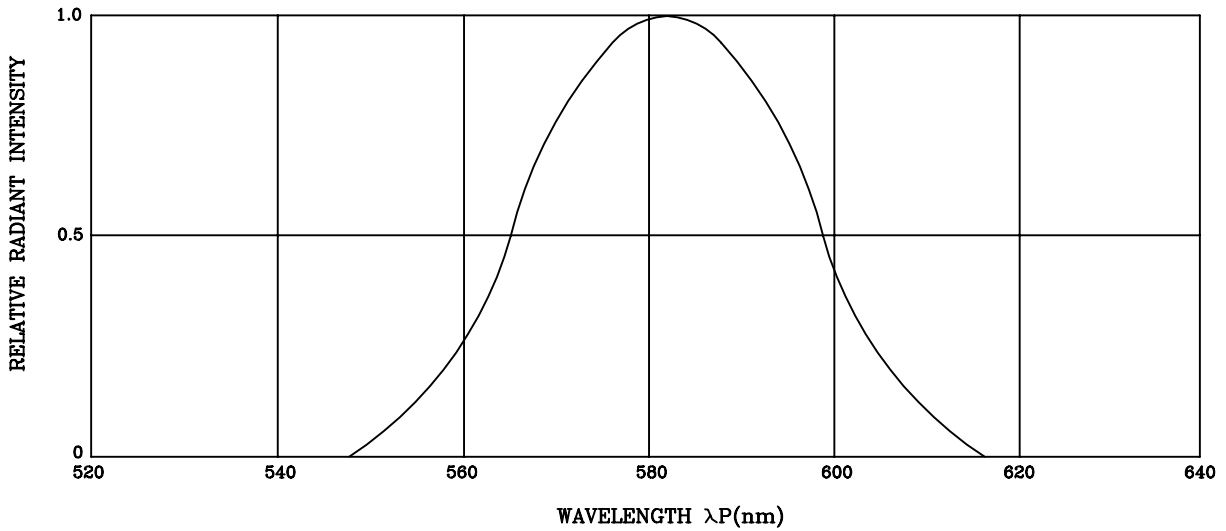


BRIGHT LED ELECTRONICS CORP.

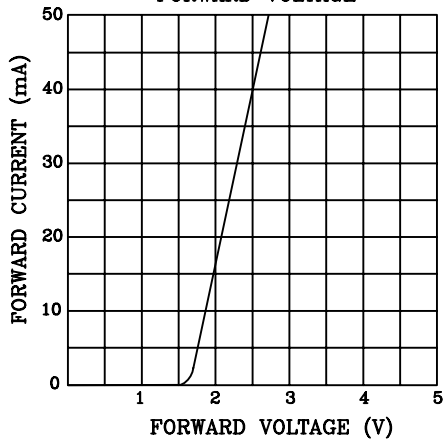
TYPICAL CHARACTERISTICS

DEVICE NUMBER: BS-A403RD

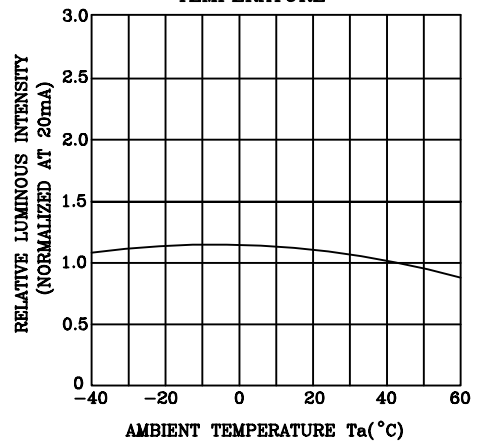
SPECTRAL DISTRIBUTION



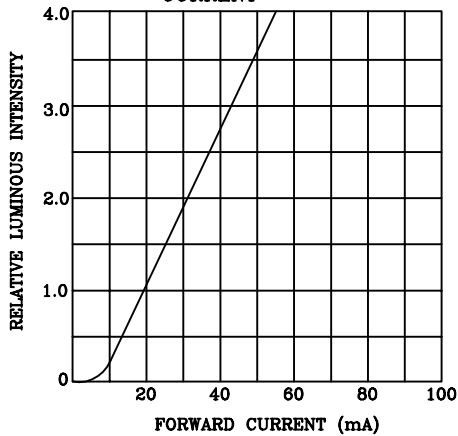
FORWARD CURRENT VS. FORWARD VOLTAGE



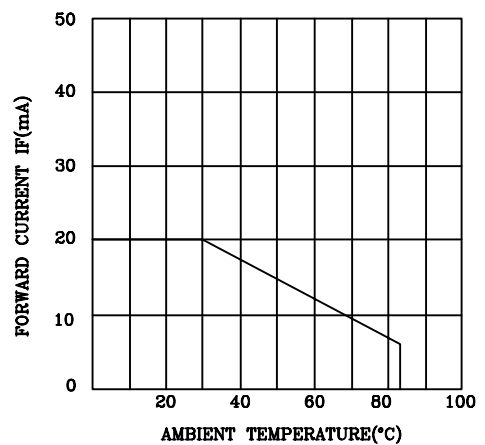
RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE



RELIABILITY TEST

DEVICE NO.: BS-A403RD

| Classification | Test Item | Reference Standard | Test Conditions | Result |
|--------------------|---|---|---|--------|
| Endurance Test | Operation Life | MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021 :B-1 | Connect with a power $I_f=25\text{mA}$ T_a =Under room temperature Test time=1,000hrs(-24hrs,+72hrs) | 0/10 |
| | High Temperature High Humidity Storage | MIL-STD-202:103B JIS C 7021 :B-11 | $T_a=65^\circ\text{C}\pm 5^\circ\text{C}$ RH=90%-95% Test time=240hrs \pm 2hrs | 0/10 |
| | High Temperature High Humidity Reverse Bias | | $T_a=65^\circ\text{C}\pm 5^\circ\text{C}$ RH=90%-95% Test time=500hrs(-24hrs,+48hrs) | 0/10 |
| | High Temperature Storage | MIL-STD-883:1008 JIS C 7021 :B-10 | High $T_a=85^\circ\text{C}\pm 5^\circ\text{C}$ Test time=1,000hrs(-24hrs,+72hrs) | 0/10 |
| | Low Temperature Storage | JIS-C-7021 :B-12 | Low $T_a=-35^\circ\text{C}\pm 5^\circ\text{C}$ Test time=1,000hrs(-24hrs,+72hrs) | 0/10 |
| Environmental Test | Temperature Cycling | MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS C 7021 :A-4 | $-35^\circ\text{C} \sim 25^\circ\text{C} \sim 85^\circ\text{C} \sim 25^\circ\text{C}$ 30min 5min 30min 5min Test Time=10cycle | 0/10 |
| | Thermal Shock | MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011 | $85^\circ\text{C}\pm 5^\circ\text{C} \sim -35^\circ\text{C}\pm 5^\circ\text{C}$ 10min 10min Test Time=10cycle | 0/10 |
| | Solder Resistance | MIL-STD-202:201A MIL-STD-750:2031 JIS C 7021 :A-1 | $T_{\text{sol}}=260\pm 5^\circ\text{C}$ Dwell Time=10 \pm 1sec. | 0/10 |
| | Solderability | MIL-STD-202:208D MIL-STD-750:2026 MIL-STD-883:2003 JIS C 7021 :A-2 | $T_{\text{sol}}=230\pm 5^\circ\text{C}$ Dwell Time=5 \pm 1sec. | 0/10 |

JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

| Measuring items | Symbol | Measuring conditions | Judgement criteria for failure |
|--------------------|--------|----------------------|--------------------------------|
| Forward voltage | VF | $I_F=10\text{mA}$ | Over $U_x1.2$ |
| Reverse current | IR | $V_R=5\text{V}$ | Over U_x2 |
| Luminous intensity | IV | $I_F=20\text{mA}$ | Below $S_x0.5$ |

Note: 1.U means the upper limit of specified characteristics. S means initial value.

2.Measurment shall be taken between 2 hours and after the test pieces have been returned to normal ambient conditions after completion of each test.