

BRIGHT LED ELECTRONICS CORP.

LED DISPLAY SPECIFICATION

●COMMODITY : 0.56"(14.20mm) SINGLE DIGIT LED DISPLAY

●DEVICE NUMBER : BS-A51DRD

VERSION : 1.0 / 2002.09.19

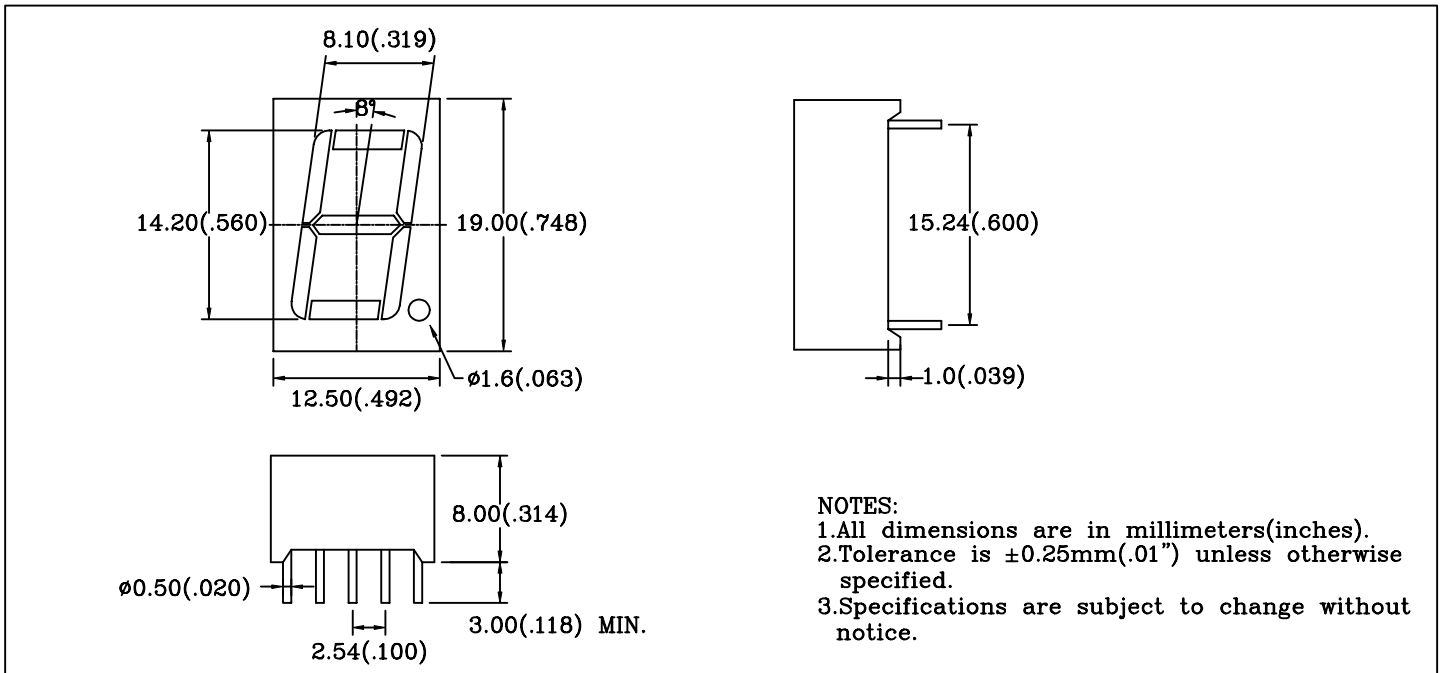
●ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta=25°C)

Chip		Absolute Maximum Rating				Electro-optical Data (At 10mA)			Surface Color	Segment Color
Emitted Color	Peak Wave Length λP(nm)	Δλ (nm)	Pd (Mw)	If (mA)	Peak If(mA)	Vf(V)		Iv Typ. (mcd)		
						Typ.	Max.			
Super Red	660	20	80	30	150	1.7	2.5	8.0	Black	White

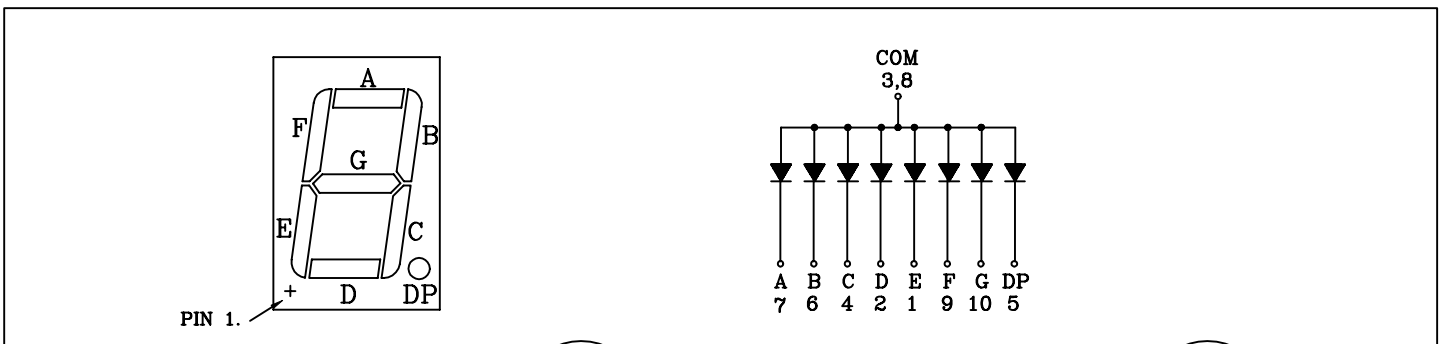
●ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Reverse Voltage 5V
 Reverse Current (-Vr=5V) 100μA
 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:



PIN FUNCTIONS:



RELEASED:

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2002.09.19
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ENGINEER:

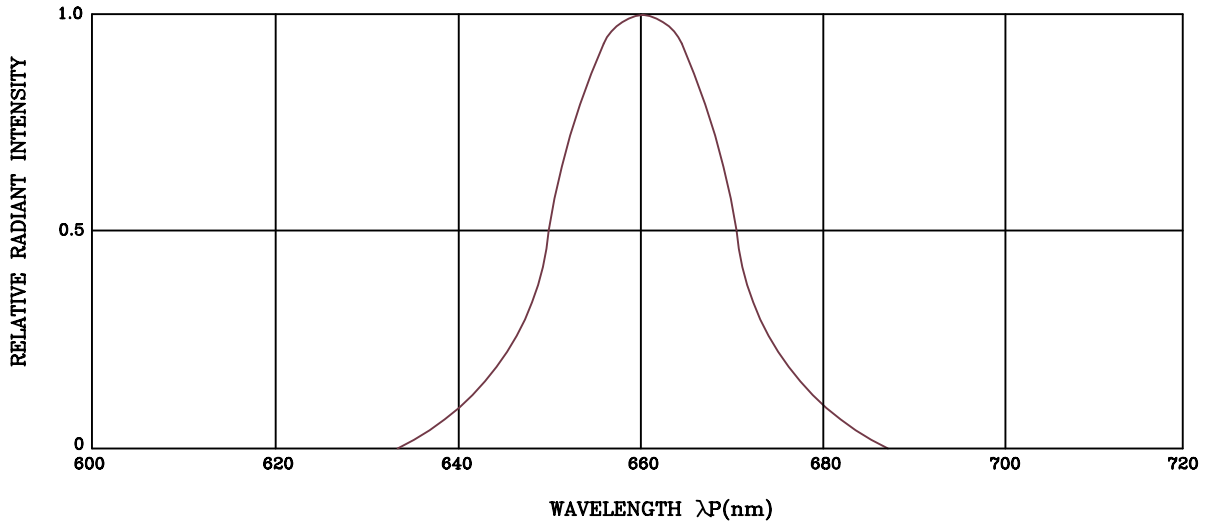
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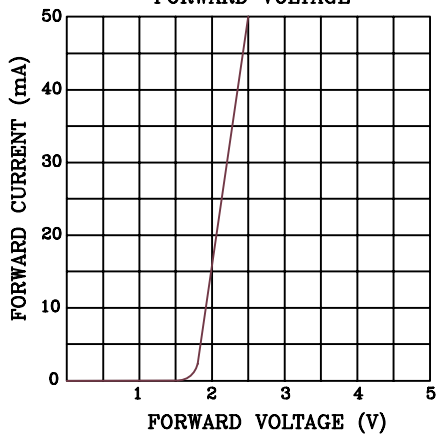
TYPICAL CHARACTERISTICS

DEVICE NUMBER: BS-A51DRD

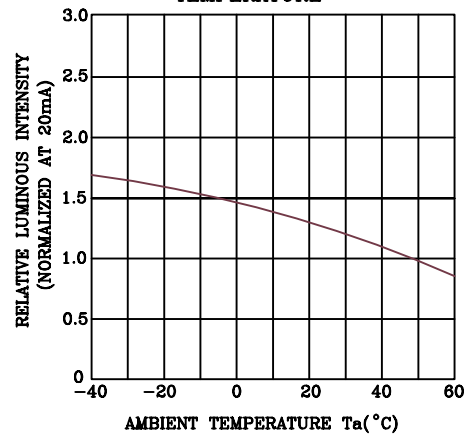
SPECTRAL DISTRIBUTION



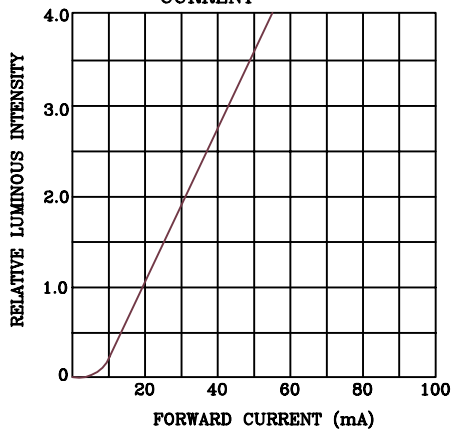
FORWARD CURRENT VS. FORWARD VOLTAGE



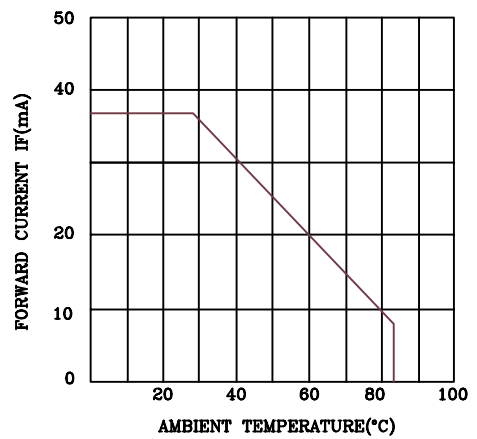
RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE



RELIABILITY TEST

DEVICE NO.:BS-A51DRD

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	$I_F=10\text{mA}$	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.