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DATA SHEET

PART NO. : L-S156AIR1C-HD

REV : A / 1

CUSTOMER'S APPROVAL : _____

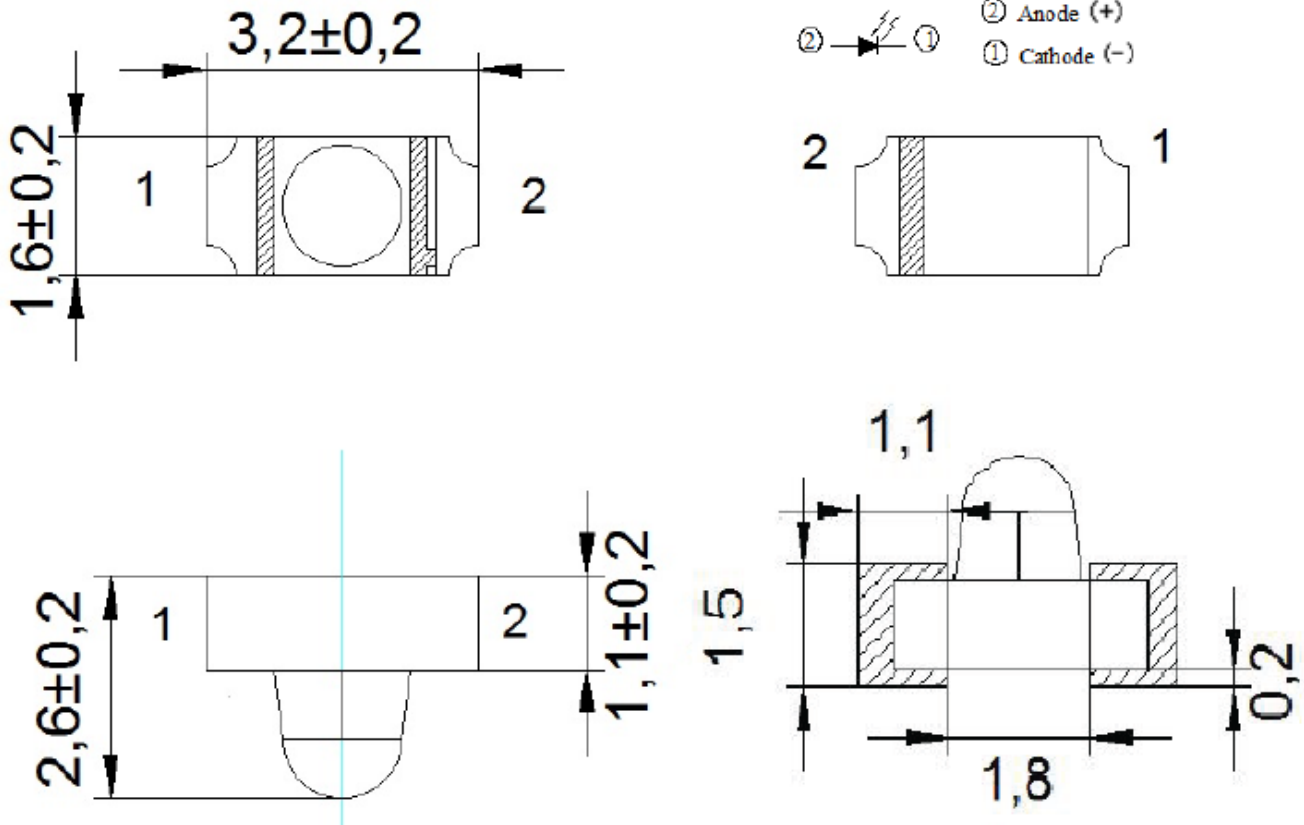
DCC : _____

DRAWING NO. : DS-52-17-003

DATE : 2020-08-07

Page : 1

PACKAGE DIMENSIONS



Notes:

- 1. All dimensions are in millimeters
- 2. Tolerances unless dimensions ± 0.1 mm

FEATURES

- * 3.2*1.6*2.6 mm SMD LED
- * Low Forward voltage
- * Peak wavelength $\lambda_p=940\text{nm}$

CHIP MATERIALS

- * Dice Material :GaAIAs
- * Lens Color : WATER CLEAR

ABSOLUTE MAXIMUM RATING : (Ta = 25°C)

SYMBOL	PARAMETER	Rating	UNIT
Pd	Power Dissipation Per Chip	100	mW
VR	Reverse Voltage Per Chip	5	V
IF	Continuous Forward Current Per Chip *1	20	mA
IFP	Peak Forward Current	65	mA
Tsol	Soldering Temperature *2	260	°C
Topr	Operating Temperature Range	-40~+85	°C
Tstg	Storage Temperature Range	-40~+85	°C

Note: *1: Pulse Width $\leq 100 \mu s$, Duty $\leq 10\%$

*2: Soldering time $\leq 5\text{seconds}$

ELECTRO-OPTICAL CHARACTERISTICS : (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Radiant Intensity	IE	10	25	39.5	Mw/sr	IF=20mA
Viewing Angle	$2\theta_{1/2}$	25	30	45	deg	IF=20mA
Peak Wavelength	λ_p	920	940	960	nm	IF=20mA
Spectral Bandwidth	$\Delta \lambda$		45		nm	IF=20mA
Forward Voltage	VF	1.15	1.35	1.45	V	IF=20mA
Reverse Current	IR			10	μA	VR=5V

Condition : IF=20Ma

I_e Rank

Unit : Mw/sr

Bin Number	Min	Max
I	10.0	15.8
J	13.0	24.0
K	20.0	32.0
L	26.0	39.5

V_F Rank

Unit : V

Bin Number	Min	Max
1	1.15	1.30
2	1.30	1.45

● Typical Electro-Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

Fig.1 Forward Current vs. Ambient Temperature

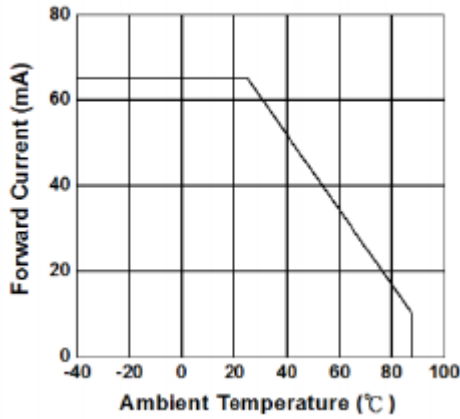


Fig.2 Spectral Sensitivity

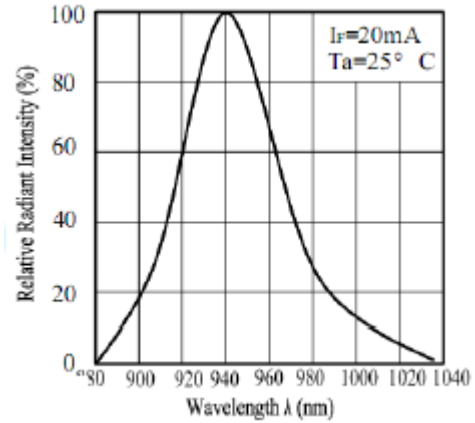


Fig.3 Relative Intensity vs. Forward Current

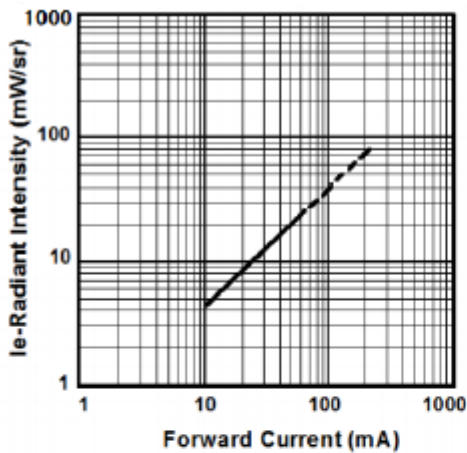


Fig.4 Forward Current vs. Forward Voltage

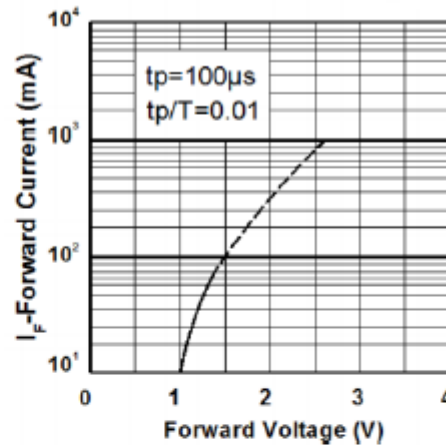
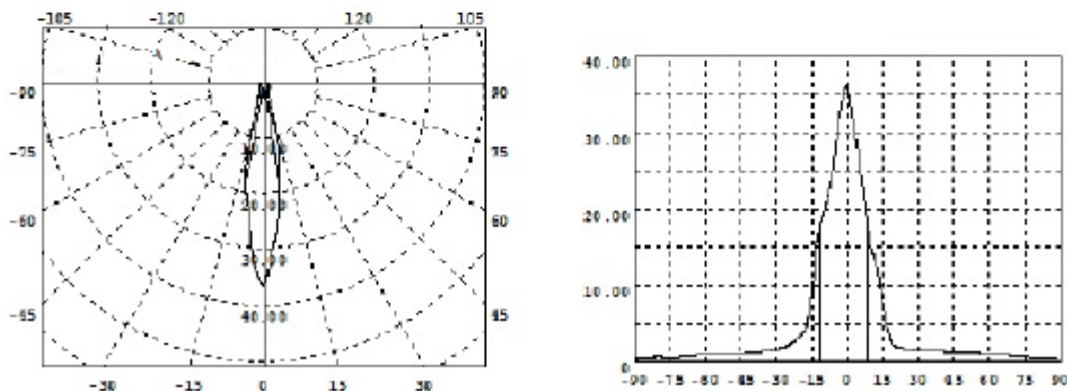
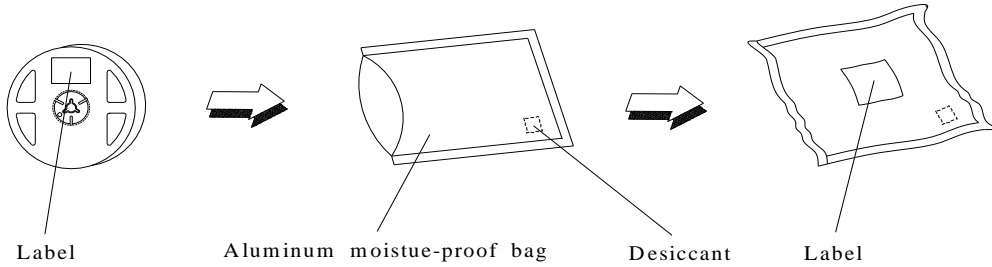


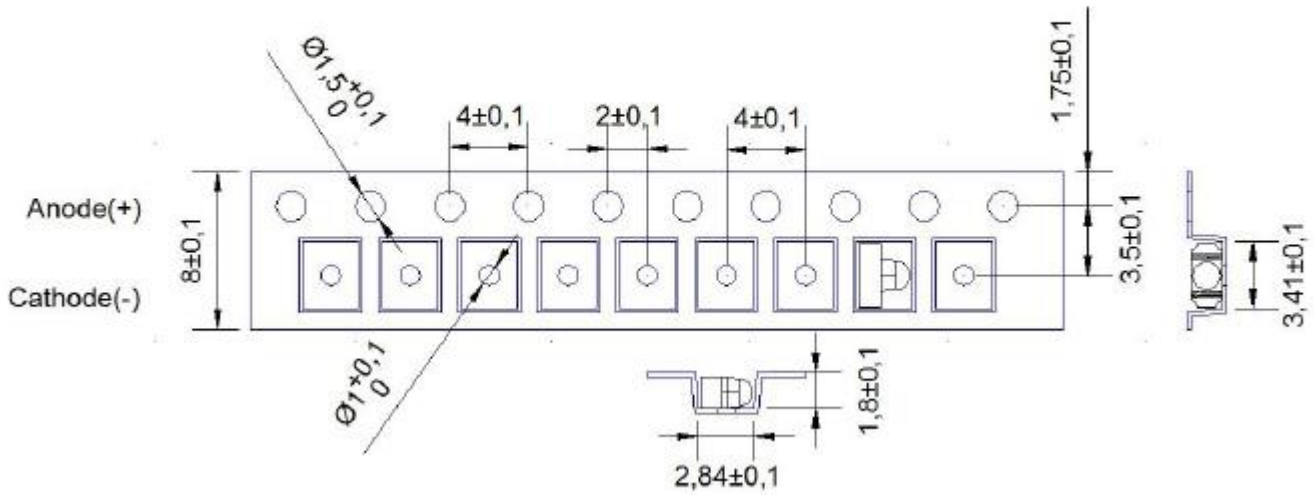
Fig.5 Relative Radiant Intensity vs. Angular Displacement



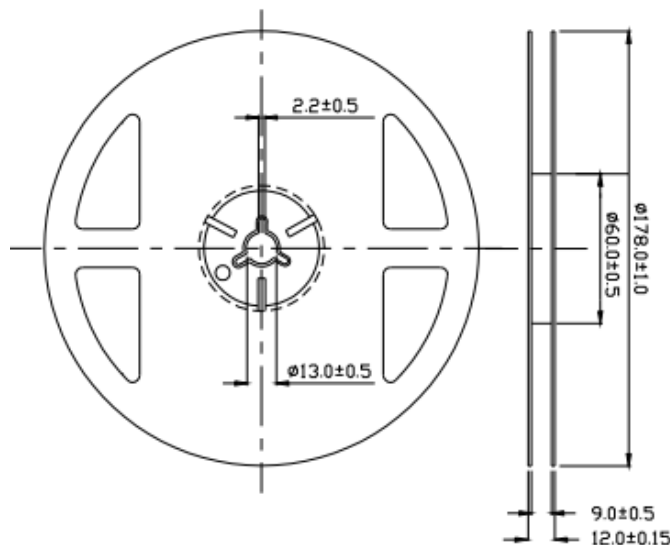
Packing Procedure



Tapping:



Reel:2000pcs/reel



Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

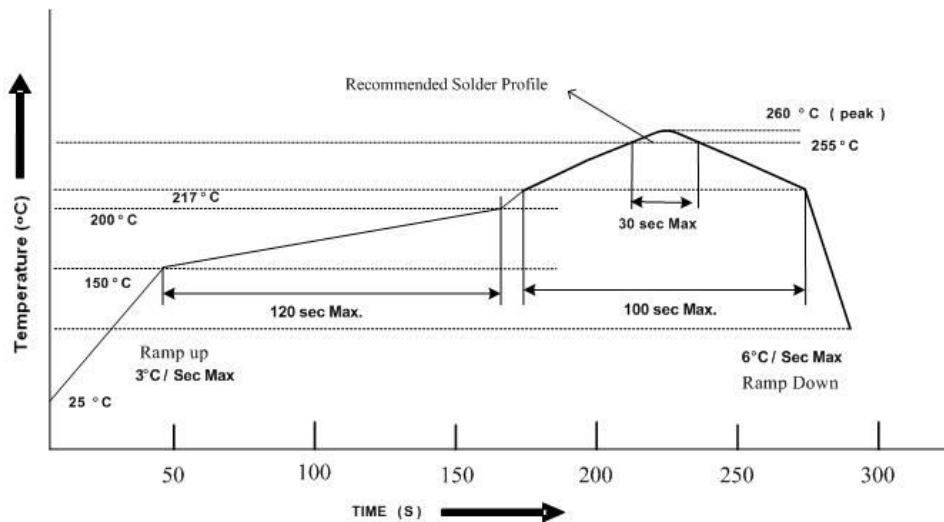
1	Reflow Soldering	Temp. : 260°C/10sec.	6 Min.	22 PCS.	0/1
2	Thermal Shock	H : +100°C 5min ∩ 10 sec L : -10°C 5min	300 Cycles	22 PCS.	0/1
3	Temperature Cycle	H : +100°C 15min ∩ 5 min L : -40°C 15min	300 Cycles	22 PCS.	0/1
4	High Temperature/Humidity Reverse Bias	Ta=85°C,85%RH	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Ta=-40°C	1000 Hrs.	22 PCS.	0/1
6	High Temperature Storage	Ta=100°C	1000 Hrs.	22 PCS.	0/1
7	DC Operation Life	Ta=25°C, I _F = 20 mA	1000 Hrs.	22 PCS.	0/1

Precautions For Use

1. Over-current-proof Customer must apply resistors for protection , otherwise slight voltage shift will cause current change (Burn out will happen)
2. Storage
 - 2.1 Do not open moisture proof bag before the products are ready to use.
 - 2.2 Before opening the package, the LEDs should be kept at 30°C or less and 90%RH or less.
 - 2.3 The LEDs should be used within a year.
 - 2.4 After opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.
 - 2.5 The LEDs should be used within 168 hours (7 days) after opening the package.
 - 2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.
Baking treatment : 60±5°C for Min. 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile



- 3.2 Reflow soldering should not be done more than two times.
- 3.3 When soldering, do not put stress on the LEDs during heating.
- 3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

