

L-934LID HIGH EFFICIENCY RED
L-934LGD GREEN
L-934LYD YELLOW
L-934LSRD SUPER BRIGHT RED

Features

- LOW CURRENT IF=2mA OPERATING.
- HIGH LIGHT OUTPUT AT LOW CURRENTS.
- LOW POWER CONSUMPTION.
- LOW CURRENT REQUIREMENTS.
- WIDE VIEWING ANGLE.
- I.C. COMPATIBLE.
- RELIABLE AND RUGGED.

Description

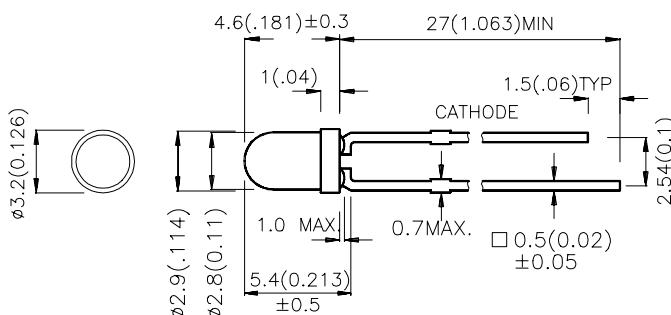
The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode

The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode..

The Yellow source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Yellow Light Emitting Diode.

The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01")$ unless otherwise noted.
3. Lead spacing is measured where the lead emerge package.
4. Specifications are subject to change without notice.

Selection Guide

Part No.	Dice	Lens Type	I _v (mcd) @ 2 mA		Viewing Angle
			Min.	Typ.	
L-934LID	HIGH EFFICIENCY RED (GaAsP/GaP)	RED DIFFUSED	0.8	3	60°
L-934LGD	GREEN (GaP)	GREEN DIFFUSED	0.8	2	60°
L-934LYD	YELLOW (GaAsP/GaP)	YELLOW DIFFUSED	0.8	2	60°
L-934LSRD	SUPER BRIGHT RED (GaAlAs)	RED DIFFUSED	8	20	60°

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

Electrical / Optical Characteristics at T_A=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λ _{peak}	Peak Wavelength	High Efficiency Red Green Yellow Super Bright Red	625 565 590 660		nm	IF=2mA
λ D	Dominate Wavelength	High Efficiency Red Green Yellow Super Bright Red	627 568 588 640		nm	IF=2mA
Δλ1/2	Spectral Line Halfwidth	High Efficiency Red Green Yellow Super Bright Red	45 30 35 20		nm	IF=2mA
C	Capacitance	High Efficiency Red Green Yellow Super Bright Red	15 15 20 45		pF	VF=0V;f=1MHz
V _F	Forward Voltage	High Efficiency Red Green Yellow Super Bright Red	1.75 1.9 1.8 1.65	2.5 2.5 2.1 2.5	V	IF=2mA
I _R	Reverse Current	All		10	uA	VR = 5V

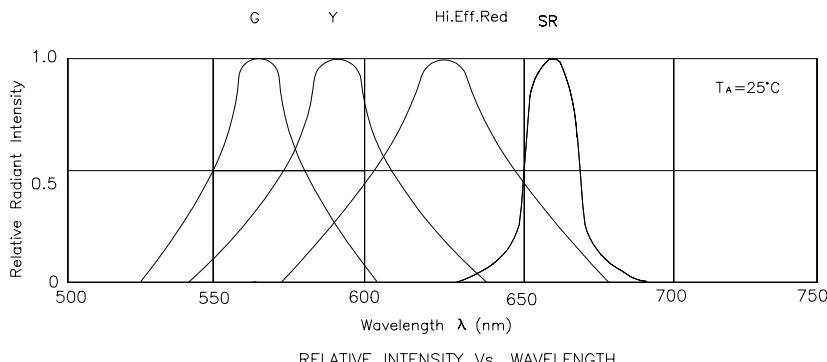
Absolute Maximum Ratings at $T_A=25^\circ\text{C}$

Parameter	High Efficiency Red	Green	Yellow	Super Bright Red	Units
Power dissipation	105	105	100	100	mW
DC Forward Current	30	25	30	30	mA
Peak Forward Current [1]	160	140	70	155	mA
Reverse Voltage	5	5	5	5	V
Operation/Storage Temperature	-40°C To +85°C				
Lead Solder Temperature [2]	260°C For 5 Seconds				

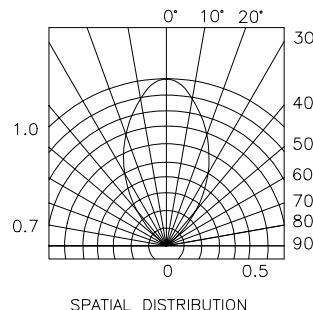
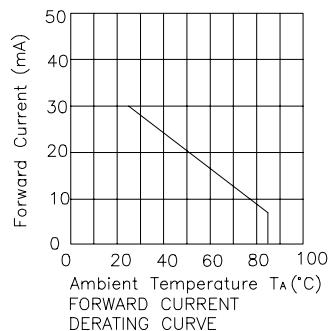
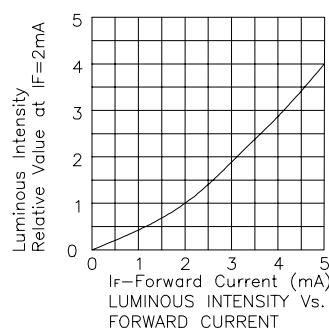
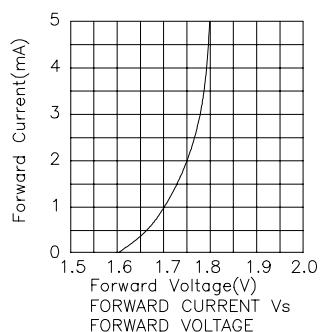
Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.

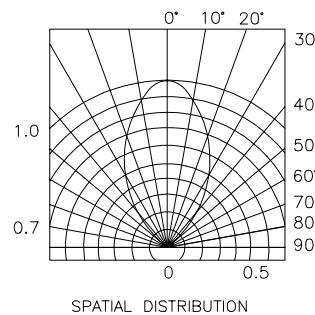
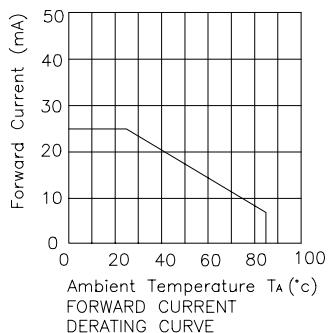
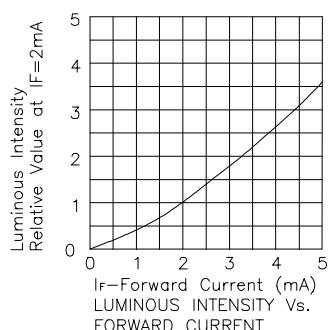
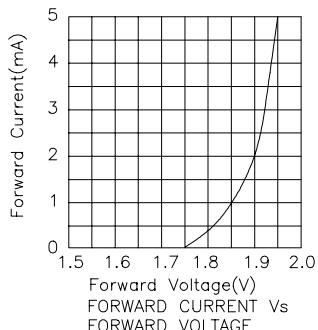
2. 4mm below package base.



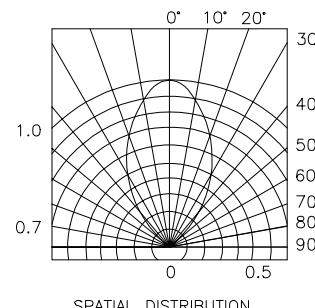
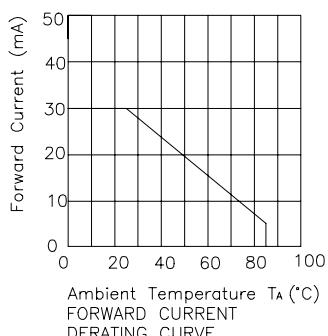
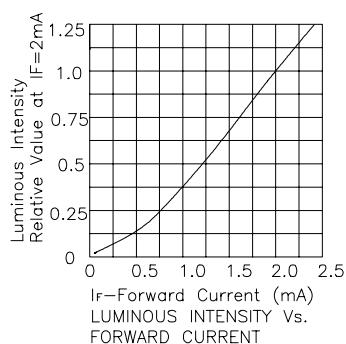
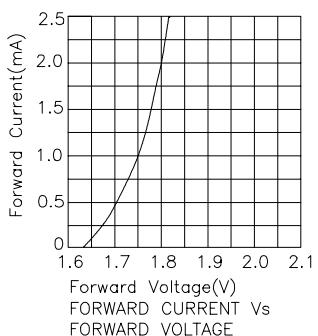
High Efficiency Red L-934LID



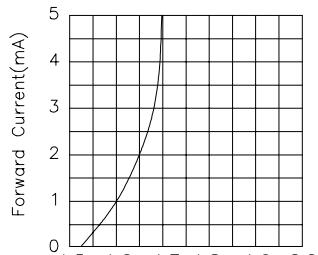
Green L-934LGD



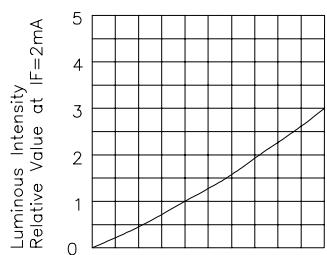
Yellow L-934LYD



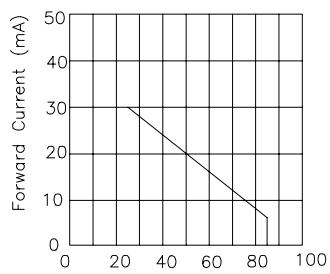
Super Bright Red L-934LSRD



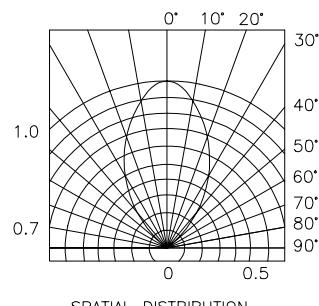
FORWARD CURRENT Vs.
FORWARD VOLTAGE



IF—Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



SPATIAL DISTRIBUTION

LED Reliability Test

Test Item : Continuous operating test.

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Part No: L-934LID

Dice type: ED-011HOH

Life test forward current:30mA

Dice lot: 8800095B131187

Test reason: Reliability Test

Reference : JIS C7035

Intensity test forward current(mA): 2mA

Sampling method:

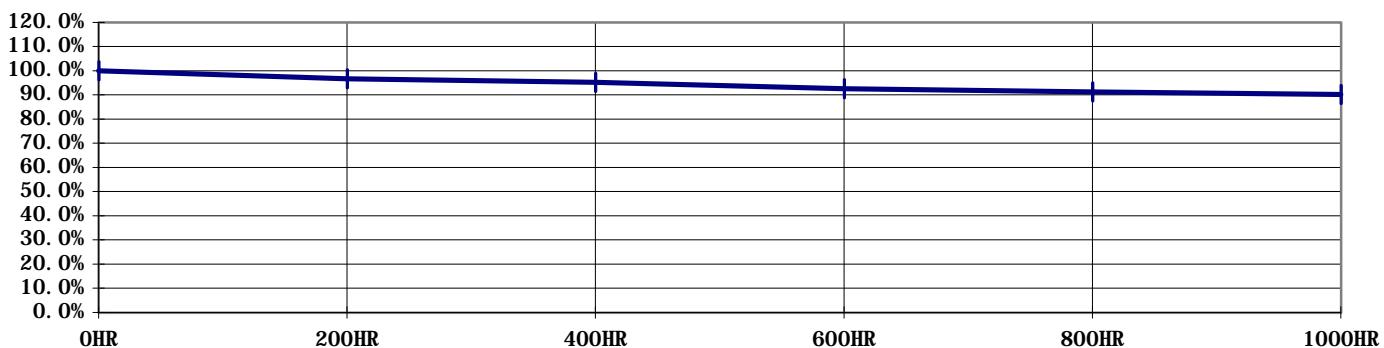
Test condition: Ta=23±5Degree C. RH=55±20%RH

MIL-STD-19500D LTPD=10%

Inspection condition:Ta=23±5Degree C. RH=55±20%RH

NO	HOUR mcd						BEFORE TEST			AFTER TEST		
		0HR	200HR	400HR	600HR	800HR	1000HR	VF	IR	λD	VF	IR
1	3.86	3.73	3.68	3.58	3.52	3.49	1.99	0.1	625.7	2.01	0.1	625.6
2	3.90	3.79	3.72	3.61	3.56	3.52	2.00	0.1	625.7	2.02	0.1	625.8
3	3.83	3.70	3.64	3.54	3.49	3.45	2.01	0.1	626.8	2.01	0.1	626.7
4	3.68	3.55	3.52	3.43	3.38	3.34	2.01	0.1	625.6	2.02	0.1	625.7
5	3.34	3.24	3.17	3.08	3.03	3.00	2.03	0.1	625.5	1.99	0.1	625.4
6	3.86	3.71	3.65	3.55	3.49	3.45	2.02	0.1	625.9	1.98	0.1	626.0
7	3.34	3.20	3.17	3.13	3.08	3.05	2.00	0.1	625.9	1.98	0.1	625.8
8	3.86	3.73	3.67	3.54	3.52	3.48	2.01	0.1	626.0	1.97	0.1	626.1
9	3.86	3.73	3.67	3.53	3.52	3.48	2.02	0.1	626.2	1.98	0.1	626.1
10	3.72	3.59	3.55	3.46	3.40	3.37	1.98	0.1	625.8	1.94	0.1	625.9
11	3.44	3.32	3.26	3.17	3.12	3.09	2.00	0.1	626.2	2.02	0.1	626.1
12	3.92	3.80	3.76	3.66	3.61	3.57	1.98	0.1	626.0	1.94	0.1	626.1
13	3.85	3.75	3.65	3.55	3.50	3.46	1.99	0.1	625.7	1.95	0.1	625.8
14	3.44	3.30	3.26	3.18	3.14	3.10	2.02	0.1	625.6	2.02	0.1	625.5
15	3.85	3.73	3.68	3.58	3.52	3.49	2.00	0.1	625.9	2.02	0.1	626.0
16	4.06	3.93	3.87	3.77	3.71	3.67	2.01	0.1	625.6	2.03	0.1	625.7
17	3.84	3.72	3.65	3.55	3.49	3.45	2.00	0.1	625.9	2.00	0.1	625.8
18	3.75	3.61	3.55	3.45	3.40	3.36	1.96	0.1	625.5	1.98	0.1	625.6
19	3.71	3.58	3.52	3.43	3.39	3.35	2.01	0.1	625.8	2.01	0.1	625.7
20	3.45	3.34	3.30	3.21	3.16	3.12	1.99	0.1	625.4	2.01	0.1	625.5
21	4.05	3.93	3.87	3.76	3.70	3.66	2.02	0.1	625.8	2.02	0.1	625.7
22	3.83	3.71	3.65	3.55	3.47	3.45	2.02	0.1	625.3	2.02	0.1	625.4
Max	4.06	3.93	3.87	3.77	3.71	3.67	2.03	0.1	626.8	2.03	0.1	626.7
Min	3.34	3.20	3.17	3.08	3.03	3.00	1.96	0.1	625.3	1.94	0.1	625.4
Average	3.75	3.62	3.57	3.47	3.42	3.38	2.00	0.1	625.8	2.00	0.1	625.8
Percentage%	100.0%	96.7%	95.2%	92.6%	91.2%	90.3%						
TEST DATE	10/13/04	10/21/04	10/29/04	11/6/04	11/14/04	11/22/04	10/13/04	10/13/04	10/13/04	11/22/04	11/22/04	11/22/04

INTENSITY DEGRADATION CURVE



Tested by:

Xiangli Qin

Checked by: Xianhuan Zhong