

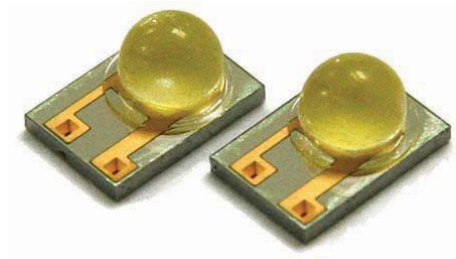


High Brightness LED Emitter

AL-R 1 Watt Series Specifications

LED Product features:

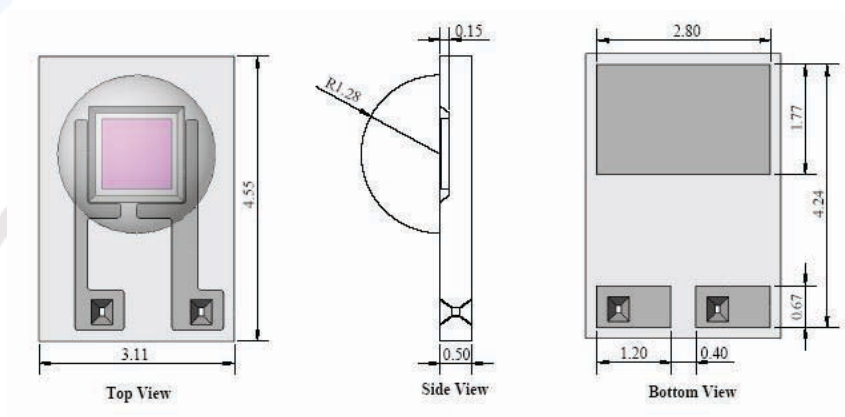
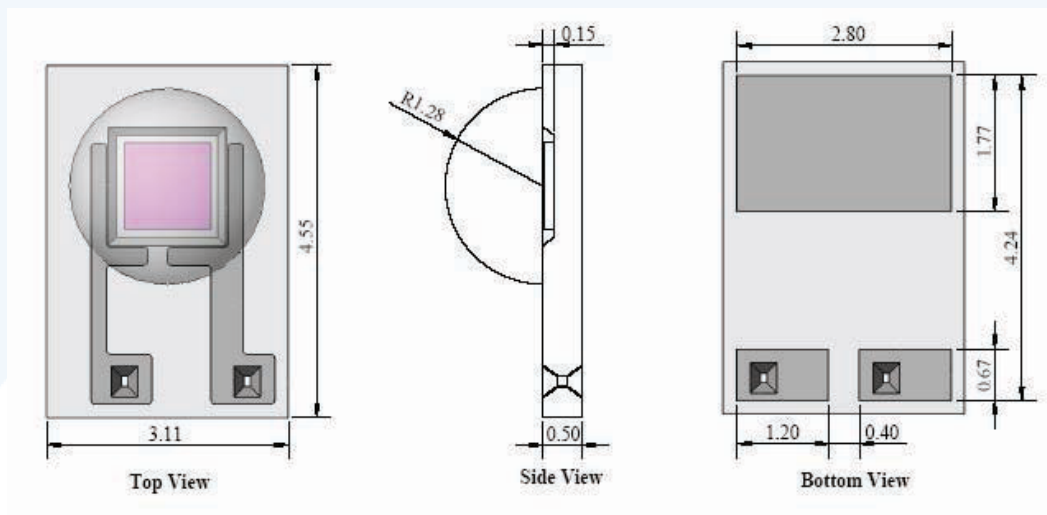
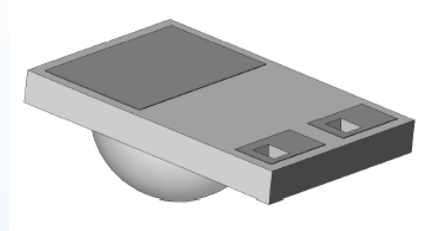
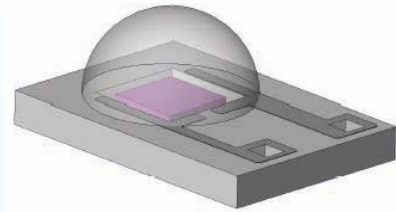
High Efficiency and Reliability
Low Power Consumption
Efficacy over 120 lumens per watt
Over 100,000 hour life span



ALTA LED

AL-R Series Specifications

Chip Dimensions



Pad	Function
1	Anode
2	Cathode
3	Thermal

All dimensions are in millimeters (mm).



AL-R Series Specifications

Maximum Ratings at Ta = 25° C

Parameter	Symbol	Rating	Unit
DC Forward Current	If	350	mA
Operating Temperature	Topr	-40 to +85	°C
Storage Temperature	Tstg	-40 to +100	°C
Soldering Temperature	Tsol	260±10	°C
Junction Temperature	Tj	125	°C
Peak Forward Current	I _{fp} (Peak)*	700	mA
Reverse Voltage	Vr	N/A **	V

* I_{fp} Conditions – Pulse Width \leq 1msec / Duty \leq 1/10.

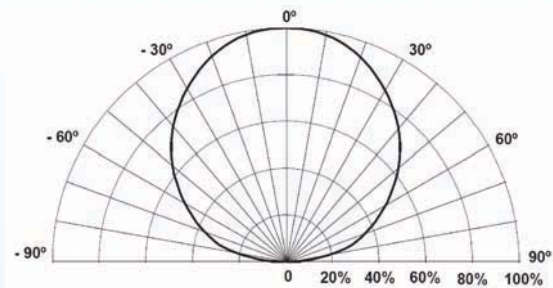
** This LED is not designed to be driven in reverse bias.

Forward Voltage and Luminance Ranking

Part Number	Color	Condition If (mA)	CCT Range (K)			Luminous Flux		Forward Voltage (V)		
			Min.	Typ.	Max.	Min.	Max.	Min.	Typ.	Max.
AL-R-1W-50	Cool White	350	5000	-	7000	120	135	2.85	2.90	3.60
AL-R-1W-30	Warm White	350	2850	-	3500	102	115	2.85	2.90	3.60

AL-R Series Specifications

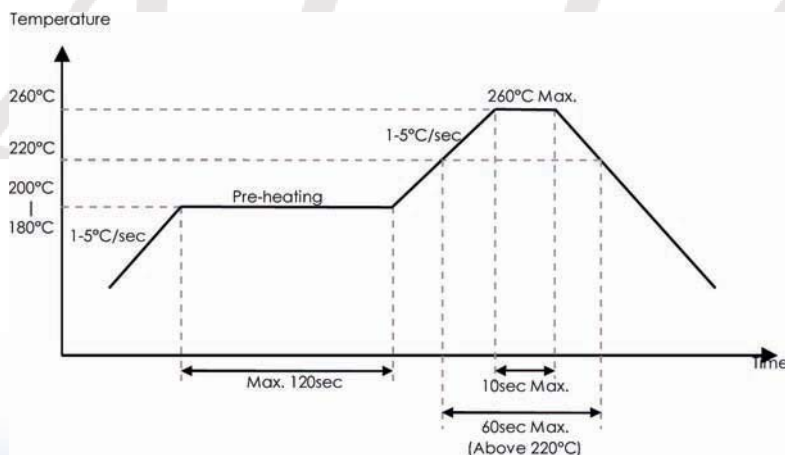
Typical Radiation Pattern



Reliability Test

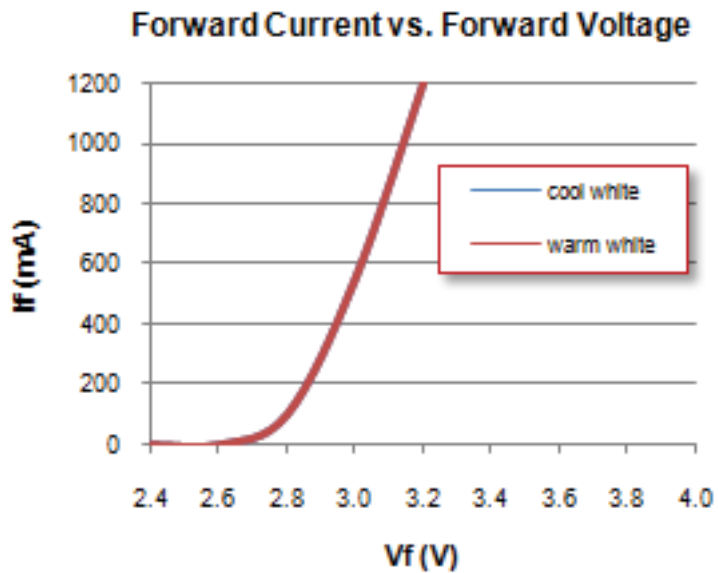
Test Item	Condition	Note
Temperature Cycle Test (TCT)	-40°C ~ 25°C ~ 100°C ~ 25°C 30min 5min 30min 5min	100 Cycles
High Temperature Storage	100±5°C	1000 hours
Low Temperature Storage	-40±5°C	1000 hours
High Temperature Operation	100±5°C, I _f = 350mA	1000 hours
Low Temperature Operation	-40±5°C, I _f = 350mA	1000 hours
High Temperature High Humidity Storage	80°C, 85% RH	1000 hours
High Temperature High Humidity Operation	80°C, 85% RH, I _f = 350mA	1000 hours
Operating Life Test	25±5°C, I _f = max.	1000 hours
Reflow Soldering	260±5°C	3 times

Reflow Profile

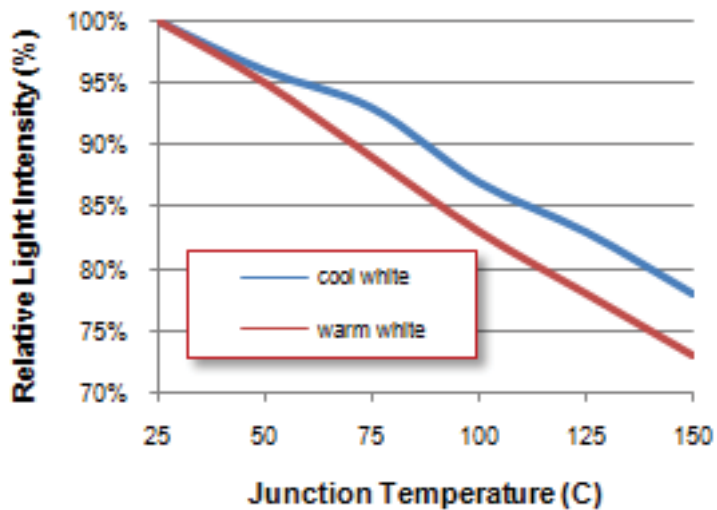


AL-R Series Specifications

Characteristic Curves, $T_a = 25^\circ\text{C}$



Relative Light Intensity vs. Junction Temperature

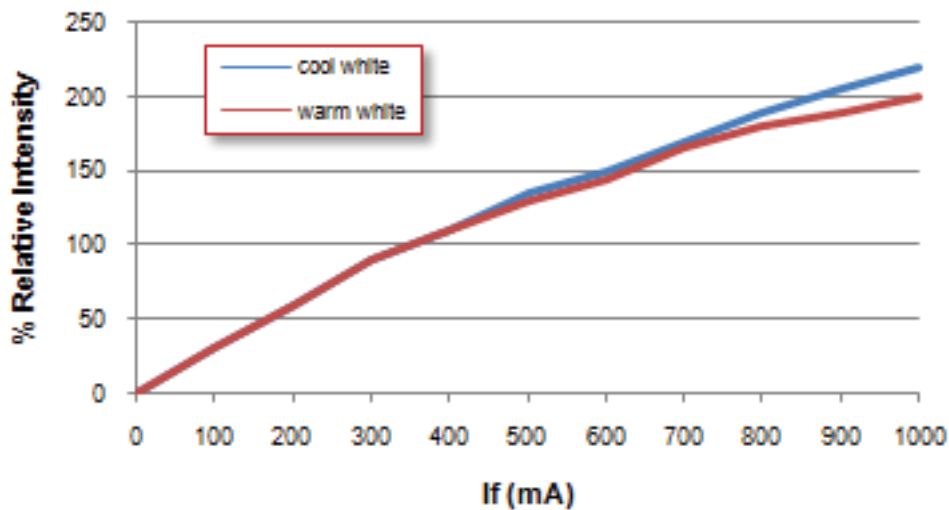


1 LED

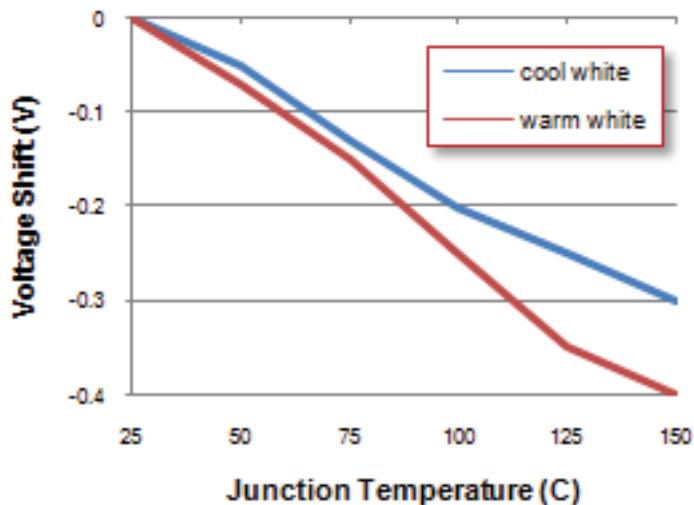
AL-R Series Specifications

Characteristic Curves, $T_a = 25^\circ\text{C}$

Relative Intensity vs. Forward Current



Voltage Shift vs. Junction Temperature



ALTA LED

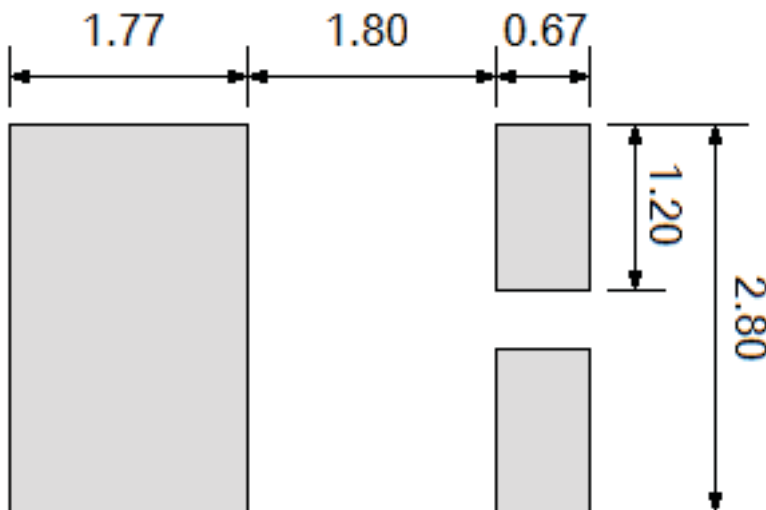
AL-R Series Specifications

Handling Precaution

The softness and dust affinity of silicone molding lens constrain the handling of the LED emitter. Thus, some handling indications are presented for possible damage prevention and excellent reliability.

1. Avoid leaving fingerprints or scratches (by sharp tools) on the silicone resin parts.
2. Do not force over 2000gf impact or pressure on the silicone molding lens.
3. The LEDs should only be picked up by making contact with the sides of the LED body.
4. When populating in SMT production, the pick-and-place nozzle must not place excessive pressure on the silicone molding lens.

Recommended PC Board Solder Pad

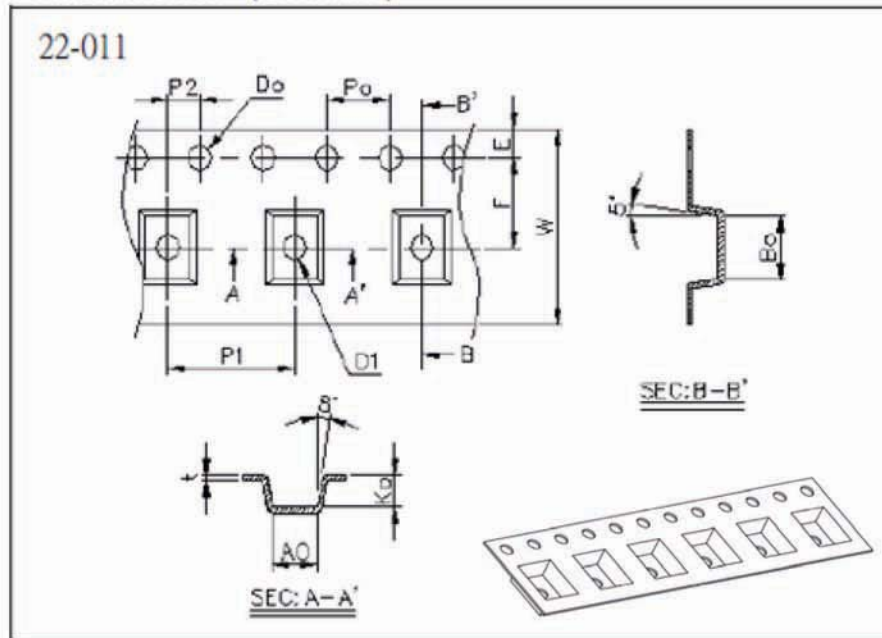


LED

AL-R Series Specifications

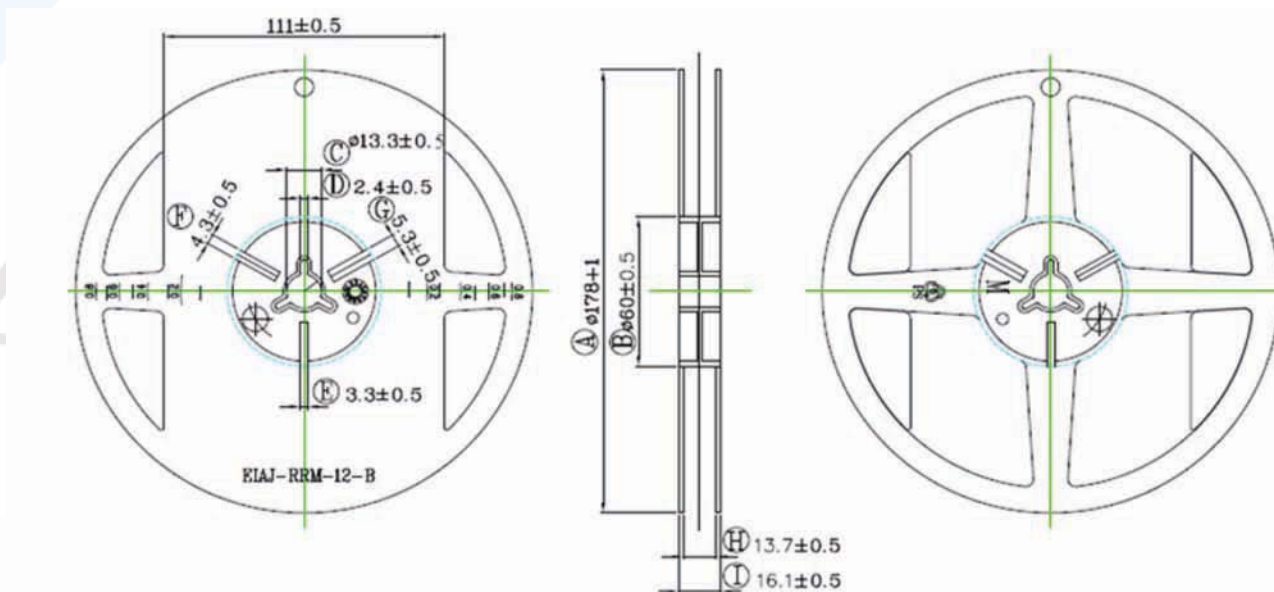
Package and Carrier Tape Dimensions

Dimensions. (Unit: mm)



Item	Specification	Tol. (+/-)
W	12.00	± 0.20
E	1.75	± 0.10
F	5.50	± 0.05
D0	1.50	+0.10, -0
D1	1.50	± 0.10
P0	4.00	± 0.05
P1	8.00	± 0.10
P2	2.00	± 0.05
P0 x 10	40.00	± 0.20
t	0.25	± 0.05
A0	3.34	± 0.10
B0	4.82	± 0.10
K0	2.22	± 0.10
A1		
B1		
K1		

Reel Packing



D

AL-R Series Specifications

Package and Carrier Tape Dimensions

