

8-22A-WC-35R

8mm Round LED Lamp

DESCRIPTIONS

- The Super Bright Red source color devices are made with Gallium Aluminum Arsenide Red Light Emitting Diode
- Electrostatic discharge and power surge could damage the LEDs
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs
- All devices, equipments and machineries must be electrically grounded

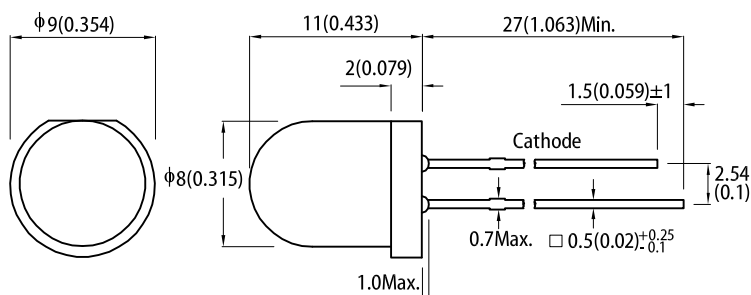
FEATURES

- 8mm diameter big lamp
- Reliable and rugged
- Long life - solid state reliability
- RoHS compliant

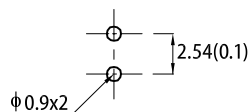
APPLICATIONS

- Status indicator
- Illuminator
- Signage applications
- Decorative and entertainment lighting
- Commercial and residential architectural lighting

PACKAGE DIMENSIONS



Recommended PCB Layout



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 leads emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

SELECTION GUIDE

Part Number	Emitting Color (Material)	Lens Type	Iv (mcd) @ 20mA ^[2]		Viewing Angle ^[1]
			Min.	Typ.	2θ1/2
8-22A-WC-35R	■ Super Bright Red (GaAlAs)	Water Clear	1300	2000	15°
			*500	*800	

Notes:

1. $\theta 1/2$ is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity / luminous flux: $\pm 15\%$.

* Luminous intensity value is traceable to CIE127-2007 standards.

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

8-22A-WC-35R

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission I _F = 20mA	λ _{peak}	Super Bright Red	655	-	nm
Dominant Wavelength I _F = 20mA	λ _{dom} ^[1]	Super Bright Red	640	-	nm
Spectral Bandwidth at 50% Φ REL MAX I _F = 20mA	Δλ	Super Bright Red	20	-	nm
Capacitance	C	Super Bright Red	45	-	pF
Forward Voltage I _F = 20mA	V _F ^[2]	Super Bright Red	1.85	2.5	V
Reverse Current (V _R = 5V)	I _R	Super Bright Red	-	10	μA
Temperature Coefficient of λ _{peak} I _F = 20mA, -10°C ≤ T ≤ 85°C	TC _{λpeak}	Super Bright Red	0.13	-	nm/°C
Temperature Coefficient of λ _{dom} I _F = 20mA, -10°C ≤ T ≤ 85°C	TC _{λdom}	Super Bright Red	0.05	-	nm/°C
Temperature Coefficient of V _F I _F = 20mA, -10°C ≤ T ≤ 85°C	TC _V	Super Bright Red	-1.9	-	mV/°C

Notes:

1. The dominant wavelength (λ_d) above is the setup value of the sorting machine. (Tolerance λ_d : ±1nm.)
2. Forward voltage: ±0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	75	mW
Reverse Voltage	V _R	5	V
Junction Temperature	T _j	115	°C
Operating Temperature	T _{op}	-40 to +85	°C
Storage Temperature	T _{stg}	-40 to +85	°C
DC Forward Current	I _F	30	mA
Peak Forward Current	I _{FM} ^[1]	155	mA
Electrostatic Discharge Threshold (HBM)	-	3000	V
Thermal Resistance (Junction / Ambient)	R _{th JA} ^[2]	560	°C/W
Thermal Resistance (Junction / Solder point)	R _{th JS} ^[2]	420	°C/W
Lead Solder Temperature ^[3]		260°C For 3 Seconds	
Lead Solder Temperature ^[4]		260°C For 5 Seconds	

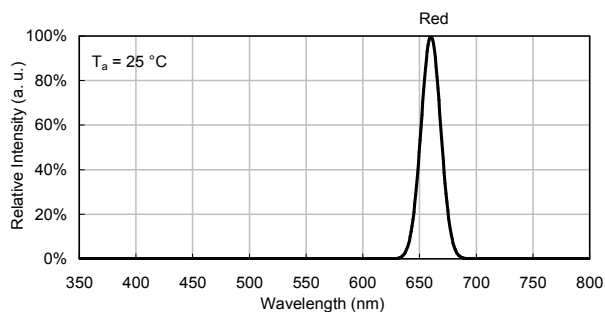
Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. R_{th JA}, R_{th JS} Results from mounting on PC board FR4 (pad size ≥ 16 mm² per pad).
3. 2mm below package base.
4. 5mm below package base.
5. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

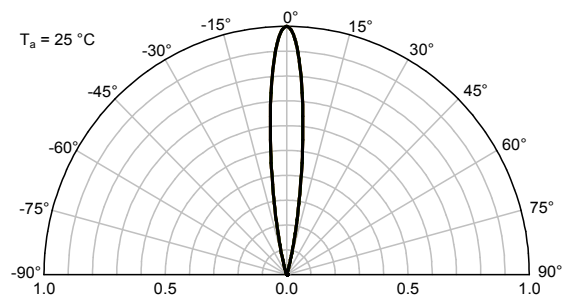
TECHNICAL DATA

8-22A-WC-35R

RELATIVE INTENSITY vs. WAVELENGTH

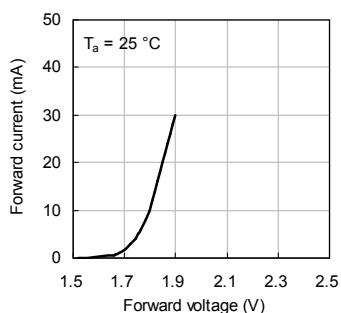


SPATIAL DISTRIBUTION

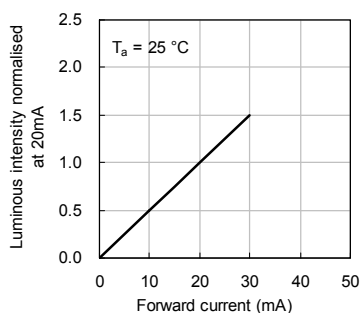


SUPER BRIGHT RED

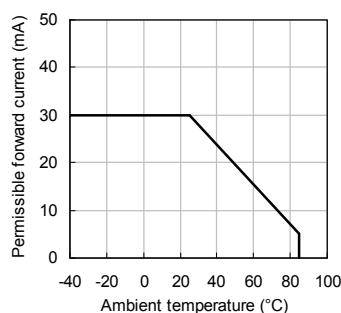
Forward Current vs. Forward Voltage



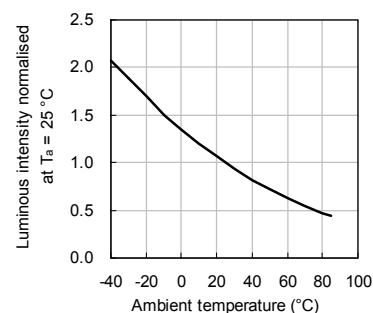
Luminous Intensity vs. Forward Current



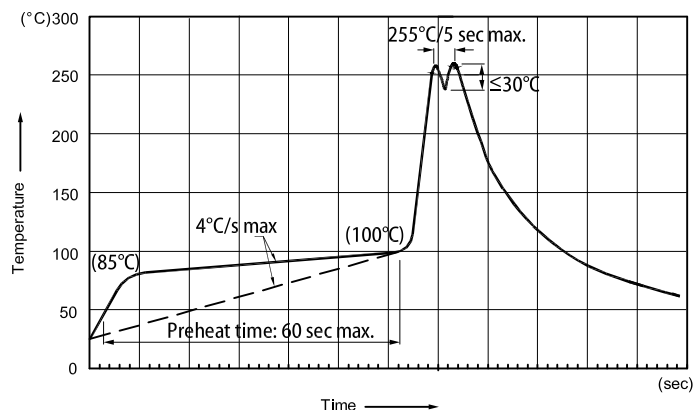
Forward Current Derating Curve



Luminous Intensity vs. Ambient Temperature



RECOMMENDED WAVE SOLDERING PROFILE



Notes:

1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C.
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.