



F336RGBW-1

Light Emitting Diode

Description

- Size: 5mm round (T-1 3/4).
- Emitting color: Flashing RGB full color.
- Lens color: White Diffused.
- Lead type: Radial leads.

Main Features

- Instant light less than 100ns turn on time.
- Cool beam, safe to touch.
- Slow blinking and alternate change color
- CMOS Technology.
- Designed for bonding with LED chip.
- Operating voltage range : 5V-10V DC
- 1/2 Duty cycle
- Blinking frequency : Max 1Hz (Vdd=5V)
- Frequency tolerance : $\pm 20\%$
- With both sink and source output drivers.
- Pb-free.

Absolute Maximum Rating TA=25°C

Parameter	Symbol	Rating	Unit	Notice	
Power Dissipation	Pd	Red	90	mW	---
		Blue	100		
		True Green	100		
DC Forward Current	IF	Red	30	mA	---
		Blue	30		
		True Green	30		
Pulse Forward Current	IF (PEAK)	100	mA	Duty 1/10 @ 1KHz	
Derating Linear From 50°C	--	0.4	mA / °C	---	
Reverse Voltage	VR	5	V	Under 100uA	
Operating Temperature Range	T OPR	-25 to +70	°C	---	
Storage Temperature Range	T STG	-35 to +80	°C	Humidity should be under 50%	
Lead Soldering Temperature	T SOL	260 +/-5	°C	4mm (0.157") from mold body Less than 5 Second	

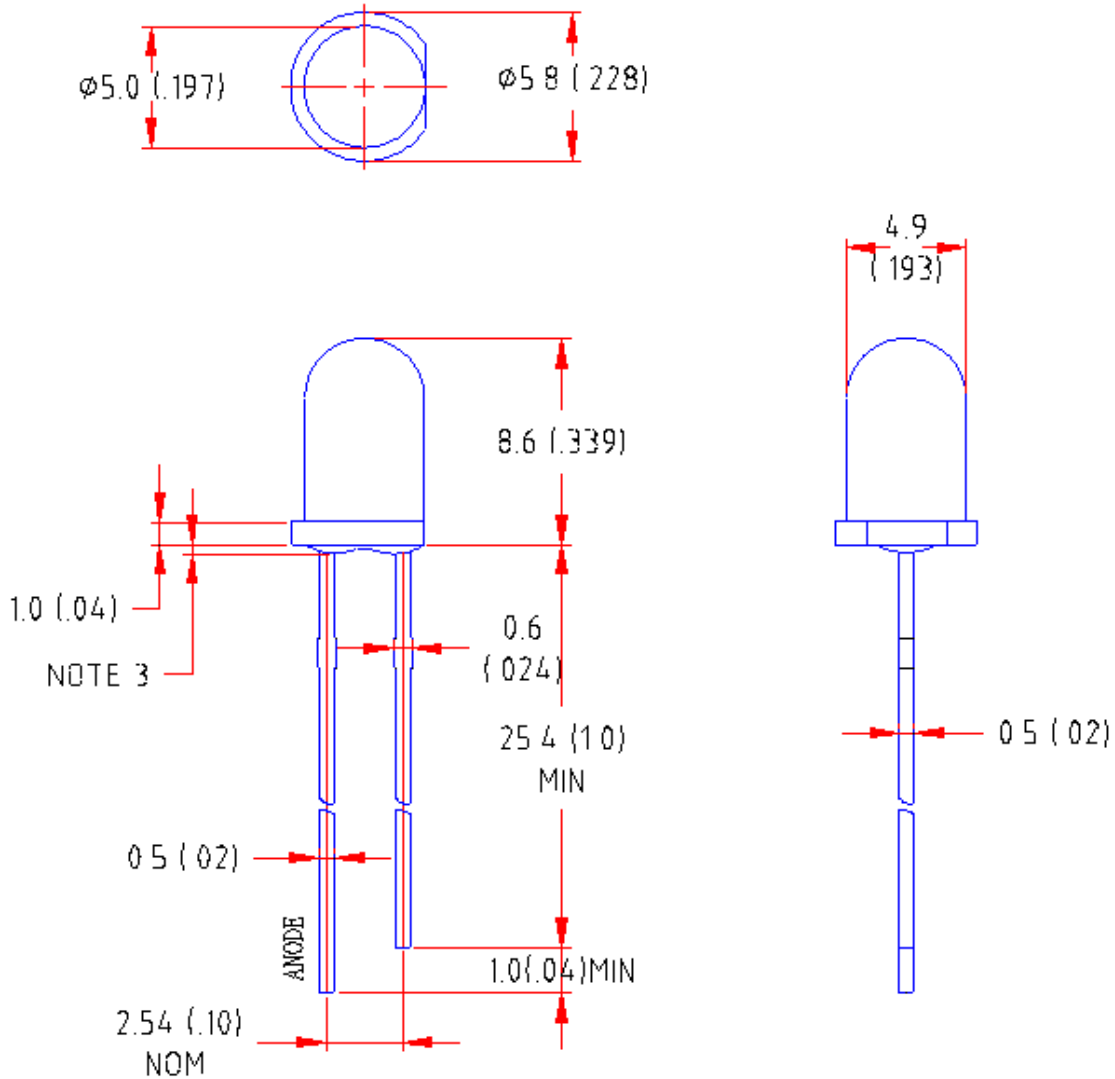
PART SELECTION ELECTRICAL / OPTICAL CHARACTERISTICS AND CURVES AT TA=25°C

Characteristic	Symbol	Test	Min.			Typ.			Max.			Unit
			R	G	B	R	G	B	R	G	B	
Operating Voltage	V _{dd}	I _F =20mA	3.5			6.0			9.0			V
Output Sink Current	I _{sink}		-----			45			-----			mA
Output Source Current	I _{Sou}		-----			25			-----			mA
Reverse Current (Don'T Apply)	I _R		-----			-----			100			µA
Blinking Frequency	F _{blk}		0.1			-----			1.0			HZ
Luminous Intensity	I _v	I _F =20mA	450	500	350	900	1000	700	1400	1500	1000	mcd
Peak Emission Wavelength	λ _p	I _F =20mA	635	520	465	640	525	470	645	530	475	nm
Spectral Line Haif Width	Δλ	I _F =20mA	15	20	20	20	25	25	25	30	30	nm
Dominant Wavelength	λ _d	I _F =20mA	625	515	460	630	520	465	645	525	470	nm

Note 1: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

Note 2: The dominant wavelength (λ_d) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Package Dimensions

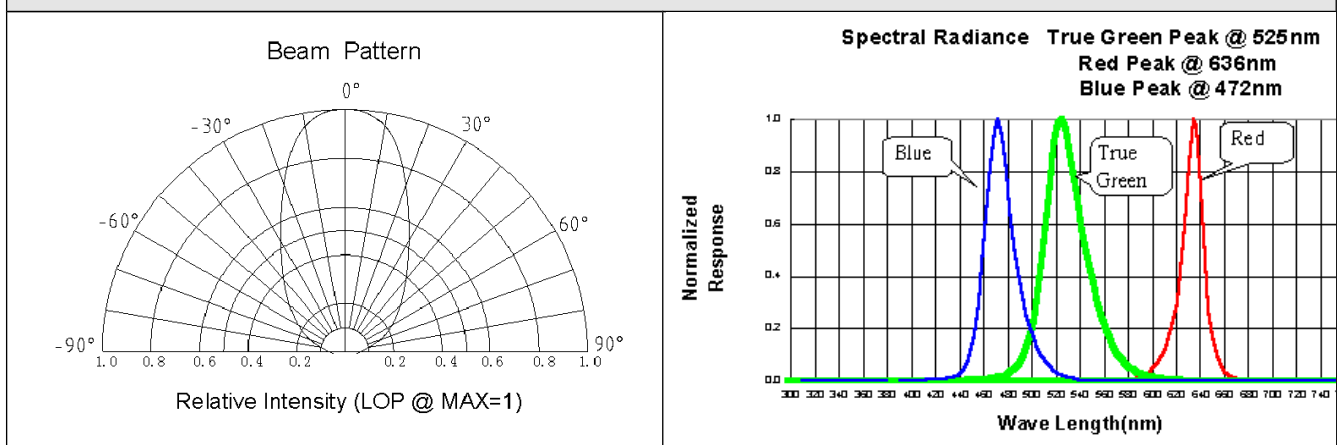


Lens Color	White Diffused	Viewing Angle	50 +/- 5 Deg.
Source Color	RED		
	TRUE GREEN		
	BLUE		

NOTES:

- All dimensions are in millimeters (inches).
- Tolerance is ± 0.25 mm (.010") unless otherwise noted.
- Protruded resin under flange is 1.0mm(.04") max
- Lead spacing is measured where the leads emerge from the package.
- Specifications are subject to change without notice.

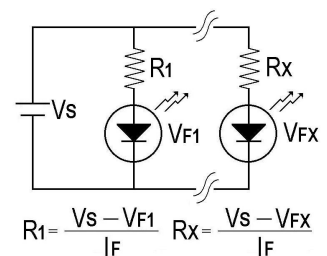
Typical Electrical / Optical Characteristic Curves At 25°C Ambient Temperature



*25°C Ambient Temperature unless Otherwise Noted

NOTE:

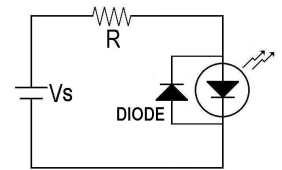
- $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- Clean only in isopropanol, ethanol, Freon TF (or equivalent).
- When using this product, Please observe the absolute maximum rating and the instructions for use outlined from use of the product, which does not comply with the absolute maximum rating and the instructions included in these specification sheet.
- **Q.A Outgoing inspection standard:**
Major Defect 0.65 A.Q.L. Minor Defect 1.5 A.Q.L
- **Lead Forming:**
If forming is required, it must be done before soldering. Form pin leads by securing under 5mm from body and bedding with radio pliers or the equivalent to avoid pressure on resin. When the LED is mounted into a P.C.board, pitch spacing should be aligned to prevent cause any stress to the resin. Any unsuitable stress applied to resin may break bonding wire in LED, which will cause failure.
- Check at a distance of 30cm from the LED to the eye defects.
- **Over-current-proof:**
Customer must apply resistor for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).
- **Parallel connection:**
Customer must apply series resistor in **EACH LED** under parallel connection. Otherwise VF tolerance will cause LED array brightness uneven.
- Specifications are subject to change without notice.



Precautions For Use

- **Reverse voltage protection diode:**

We recommend user put a reverse protective diode in parallel with LED, which is to prevent high reverse voltage caused the LED damage.



LED handling for ESD protection

- Keep all common plastics such as Styrofoam molded containers, packaging “popcorn balls”, vinyl and teflon containers and plastic wrap away from LED components and PC board assemblies.
- Have all operators that handle LED components wear wrist ground straps, that are in fact touching their skin and securely grounded through a 250 K ohm resistor.
- Operators should wear only cotton clothing. Clothing made of synthetic fabrics, such as nylons, polyesters and acrylics, quickly build up a very large static charge with normal body movement.
- Use only tables and benches that are covered with ESD protective pads, having a surface insulation resistance of 10¹² ohms per square. The high surface resistance permits the static charge to bleed off very slowly at an energy level sufficiently low enough to prevent any damage to an LED component.
- Ground all metal work bench frames and other equipment through a 250 k ohm current limiting resistor to prevent the rapid bleed-off of electric charge.
- Store LED components and PC board assemblies only in ESD protective packaging and use that packaging for transporting from one location to another. Plastic ESD protective containers are made from surfactant impregnated resins, such as polyethylene. The impregnated surfactants maintain a microscopic film of moisture on the surface of the plastic which prevents the build up of any static charge.
- Never apply adhesive tape or an adhesive label to a PC board assembly for temporary identification through the assembly process. The turboelectric charge that is created, when it is removed prior to shipment may damage the LED components.
- Continually train and remind operators and other personnel of the rules and procedures to be followed to protect LED components and PC board assemblies from ESD damage.

