

1.8mm Round Subminiature Axial LEDs

PART NO : 91-21EC/F1

Features :

- Package in 12mm tape on 7" diameter reels.
- Compatible with automatic placement equipment.
- Compatible with infrared and vapor phase reflow solder process.
- IC compatible.
- EIA std package.
- Mono-color type.

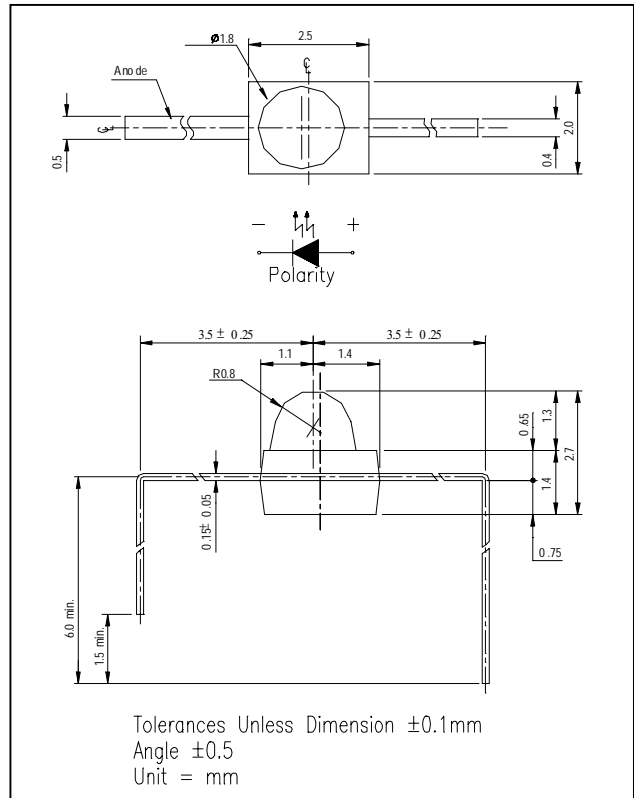
Descriptions :

- Besides, light weight makes them ideal for miniature applications, etc.
- Furthermore by automation assembly machines the accuracy is anticipated.

Applications :

- Small indicator for outdoor applications.
- Flat backlight for LCD, switches and symbols.
- Indicator and backlight in office equipment.
- Indicator and backlight for battery driven equipment.
- Indicator and backlight for audio and video equipment.
- Automotive : backlighting in dashboards and switches.
- Telecommunication : indicator and backlighting in telephone and fax.
- General use.

Package Dimensions :



PART NO.	Chip		Lens Color
	Material	Emitted Color	
91-21EC/F1	GaAsP/GaP	Orange	Water Clear

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<http://www.everlight.com>



EVERLIGHT ELECTRONICS CO.,LTD.

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

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	mA
Operating Temperature	T_{opr}	-40 ~ +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^\circ\text{C}$
Soldering Temperature	T_{sol}	260 ± 5 for 5 sec	$^\circ\text{C}$
Power Dissipation	P_d	100	mW
Peak Forward Current(Duty 1/10 @ 1KHz)	$I_F(\text{Peak})$	160	mA

■ Electronic Optical Characteristics :

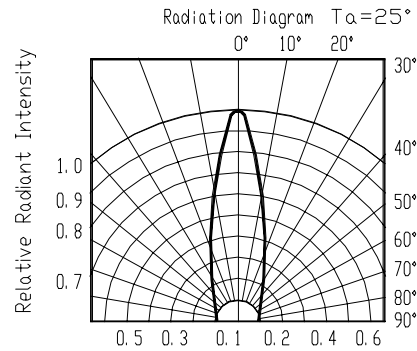
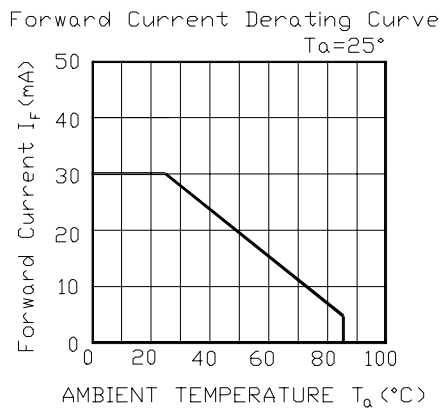
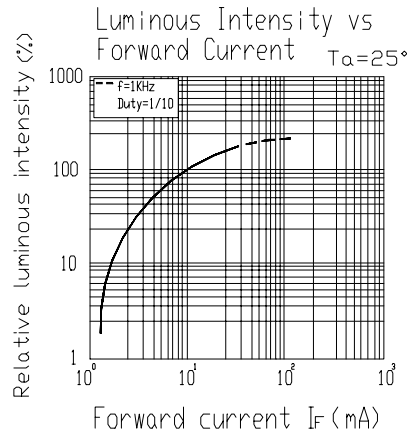
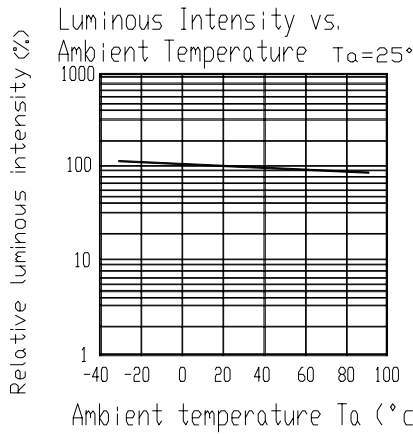
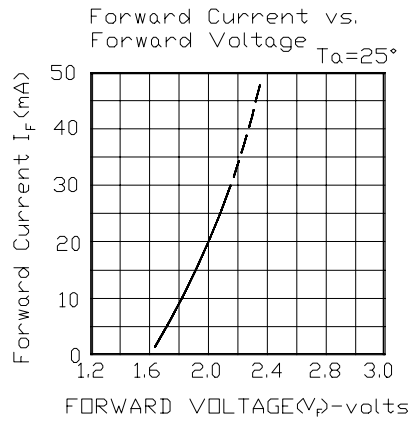
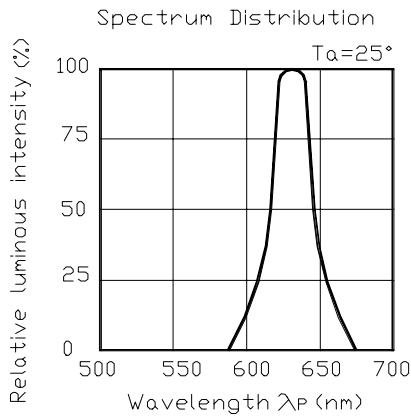
Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Luminous Intensity	I_v	12	24	----	mcd	$I_F = 10\text{mA}$
Viewing Angle	$2\theta_{1/2}$	----	25	----	deg	$I_F = 20\text{mA}$
Peak Wavelength	λ_p	----	635	----	nm	
Dominant Wavelength	λ_d	----	625	----	nm	
Spectrum Radiation Bandwidth	$\Delta\lambda$	----	45	----	nm	
Forward Voltage	V_F	1.7	2.0	2.4	V	
Reverse Current	I_R	----	----	10	μA	$V_R = 5\text{V}$



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Typical Electro-Optical Characteristic Curres





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■ Reliability Test Items And Conditions

NO.	Item	Test Conditions	Test Hours/ Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP. : 260°C ± 5 °C	5 SEC.	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30 min. ∫ 5 min. L : -55°C 30 min.	50 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5 min. ∫ 10 sec. L : -10°C 30 min.	50 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP. : +100°C	1000 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	IF = 20 mA	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C / 85% R H	1000 HRS	76 PCS	0/1