

1.3 mm Height Subminiature , Axial Flat Top LEDs

MODEL NO : 28-21GC

■ 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.

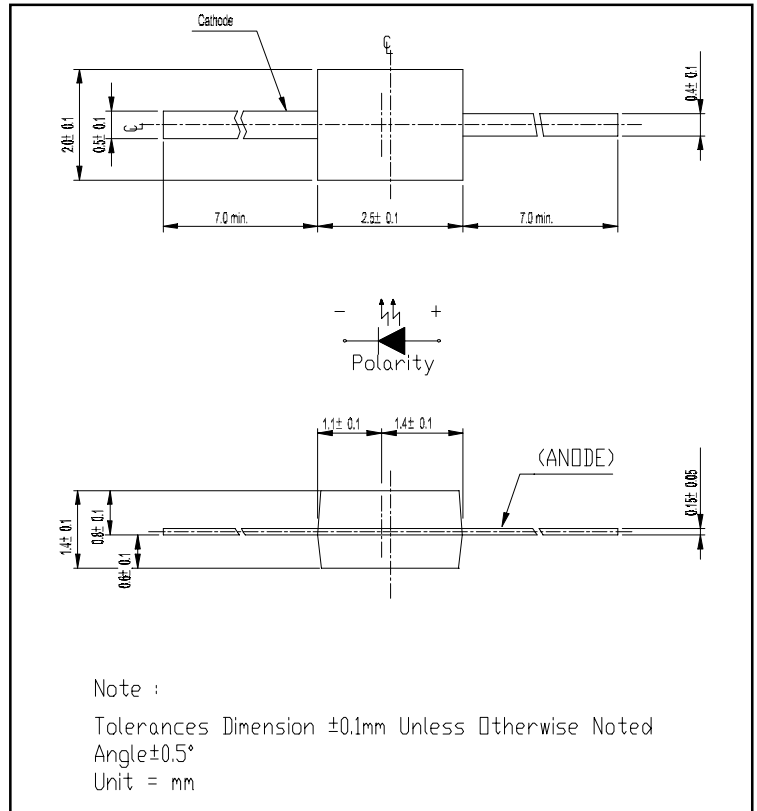
■ Descriptions :

- 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	
28-21GC	GaP	Green	Water Clear



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■ Absolute Maximum Ratings at T_A = 25°C

Parameter	Symbol	Rating	Unit
Reverse Voltage	V _R	5	V
Forward Current	I _F	30	mA
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Soldering Temperature	T _{sol}	260 ± 5 for 5 sec	°C
Power Dissipation	P _d	100	mW
Peak Forward Current(Duty 1/10 @ 1KHZ)	I _F (Peak)	160	mA

■ Electronic Optical Characteristics :

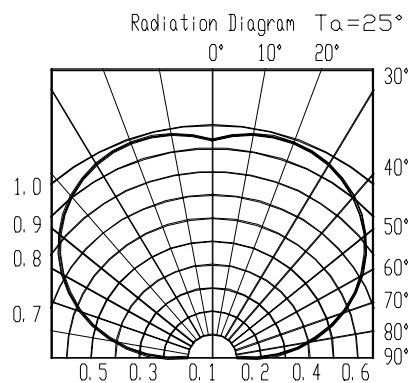
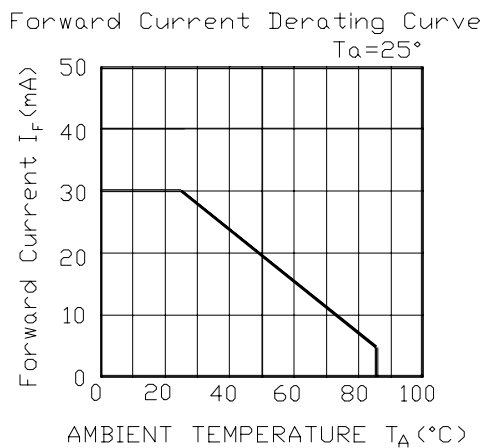
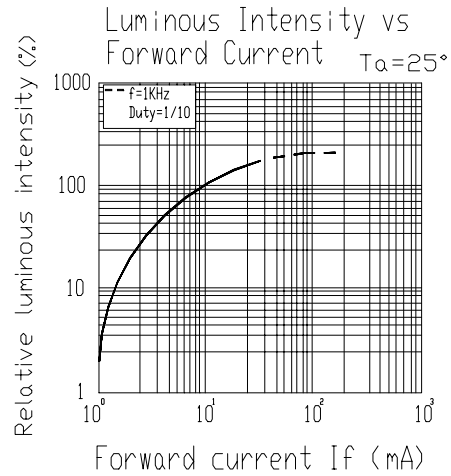
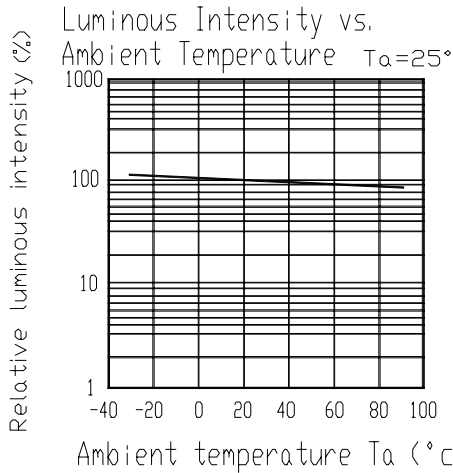
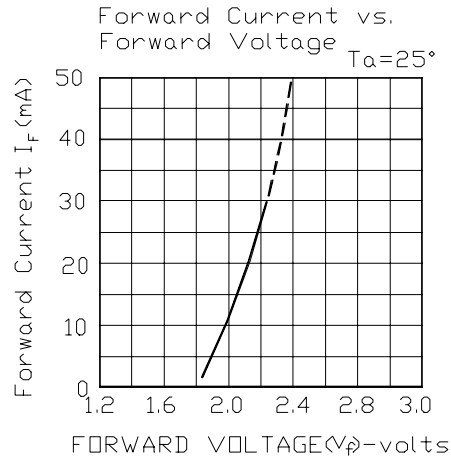
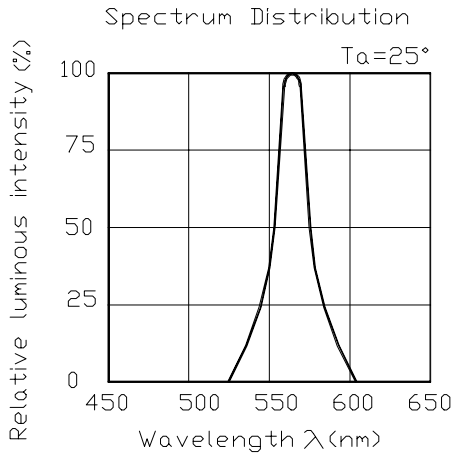
Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Luminous Intensity	I _v	2.4	3.5	----	mcd	I _F = 10mA
Viewing Angle	2θ 1/2	----	150	----	deg	I _F = 20mA
Peak Wavelength	λ _p	----	565	----	nm	
Dominant Wavelength	λ _d	----	570	----	nm	
Spectrum Radiation Bandwidth	△λ	----	30	----	nm	
Forward Voltage	V _F	1.7	2.1	2.4	V	
Reverse Current	I _R	----	----	10	μA	V _R =5V



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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 CYCLE	76 PCS	0/1
3	Thermal Shock	H : +100°C 5 min ↑ 10 sec ↓ L : -10°C 30 min	50 CYCLE	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	I _F = 20 mA	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 HRS	76 PCS	0/1