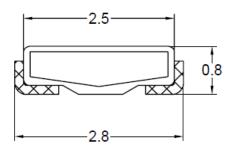
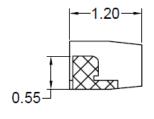
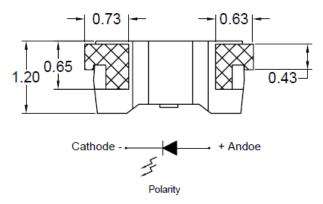


2.8 x 0.8 x 1.2 mm Pure Green SMD LED

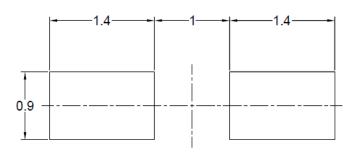
PACKAGE OUTLINES







RECOMMENDED PAD LAYOUT



Note: All dimensions are in millimeters tolerance is ±0.1mm unless otherwise noted; Angle±0.5

Dort Number	Meterial	Lens Color	
Part Number	Material	Emitted	Lens
L233QPGC-TR	InGaN	Pure Green	Water Clear



2.8 x 0.8 x 1.2 mm Pure Green SMD LED

ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Forward Current	I _F	30	mA
Peak Forward Current (Duty 1/11@10KHz)	I _{FP}	100	mA
Power Dissipation	P _D	108	mW
Reverse Current @ 5V	I _R	50	μΑ
Electrostatic Discharge	ESD	500	V
Operating Temperature Range	T _{OPR}	-20~+80	°C
Storage Temperature Range	T _{STG}	-30~+100	°C

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Min	Тур	Max	Unit
Luminous Intensity	I _V	I _F =20mA	200	350	1	mcd
Dominant Wavelength	λ_{D}			525		nm
Spectral Line Half-Width	Δλ			35		nm
Forward Voltage	V _F		2.8		3.6	V
Viewing Angle	201/2			115		deg

Notes:

Forward voltage tolerance: ±0.1V
 Luminous intensity tolerance: ±15%
 Dominant wavelength tolerance: ±1nm



2.8 x 0.8 x 1.2 mm Pure Green SMD LED

LUMINOUS INTENSITY CLASSIFICATION

BIN CODE	Iv(mcd) at 20mA		
BIN CODE	Min.	Max.	
S	200	320	
Т	320	500	
U	500	800	
V-1	800	1000	

DOMINANT WAVELENGTH CLASSIFICATION

DIN CODE	λD(nm) at 20mA		
BIN CODE	Min.	Max.	
10	519	522	
1P	522	525	
1Q	525	528	
1R	528	531	

FORWARD VOLTAGE CLASSIFICATION

DIN CODE	Vf(v) at20mA		
BIN CODE	Min.	Max.	
1	3.0	3.2	
2	3.2	3.4	
3	3.4	3.6	



2.8 x 0.8 x 1.2 mm Pure Green SMD LED

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

Fig.1 Forward current vs. Forward Voltage

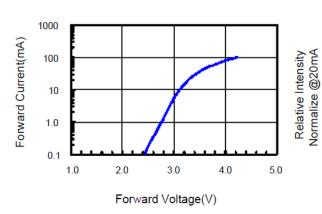


Fig.2 Relative Intensity vs. Forward Current

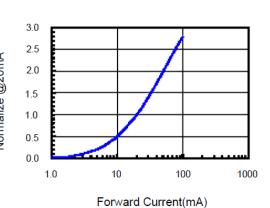


Fig.3 Forward Voltage vs. Temperature

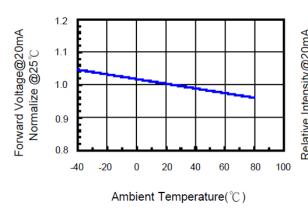


Fig.4 Relative Intensity vs. Temperature

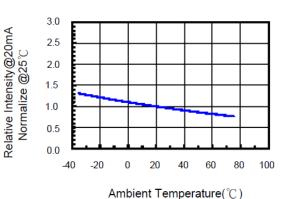


Fig.5 Relative Intensity vs. Wavelength

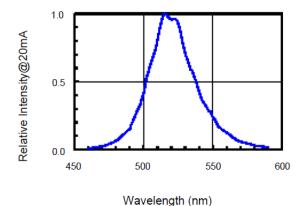
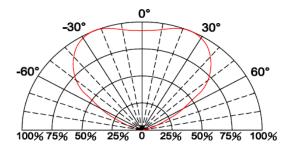


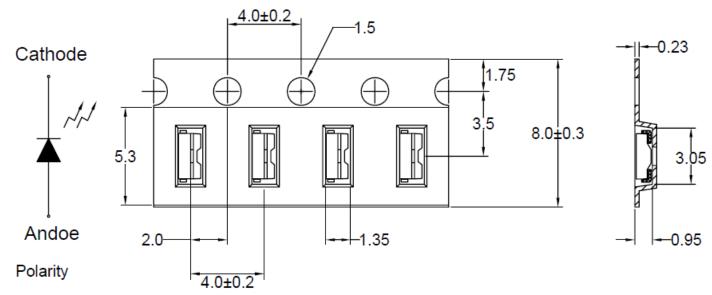
Fig.6 Directive Radiation





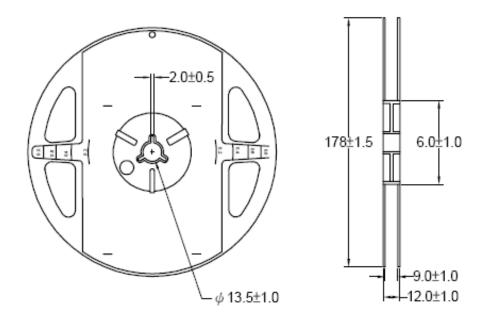
2.8 x 0.8 x 1.2 mm Pure Green SMD LED

CARRIER TAPE DIMENSION



Note: The tolerances unless mentioned are ±0.1mm, Angle ±0.5; Unit=mm

REEL DIMENSIONS



Notes:

- 1. 8.0mm tape, 7"reel
- 2. 3,000pcs/Reel



2.8 x 0.8 x 1.2 mm Pure Green SMD LED

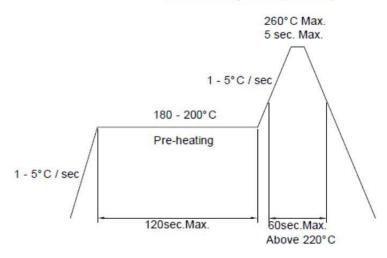
RECOMMENDED SOLDERING CONDITIONS

Soldering Iron:

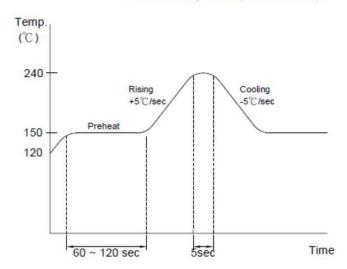
Basic spec is ≤ 5 seconds when 260°C.

Power dissipation of iron should be smaller than 25W, and temperature should be controllable. Surface temperature of the device should be under 280°C for 3 seconds.





Reflow Temp/Time(Lead solder)



Notes:

- 1. Reflow soldering should not be done more than two times.
- 2. When soldering, do not put stress on the LEDs during heating.
- 3. After soldering, do not warp the circuit board.



2.8 x 0.8 x 1.2 mm Pure Green SMD LED

PRECAUTIONS FOR USE

Storage Time:

- 1. The operation of temperatures and RH are: 5°C~35°C, RH60%.
- 2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with descanting agent. Considering the tape life, we suggest our customers to use our products within a year (from production date).
- 3. If opened more than one week in an atmosphere 5°C~35°C, RH60%, they should be treated at 60°C±5°C for 15hrs.

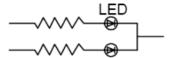
Drive Method:

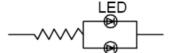
LED is a current operated device, and therefore, require some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in a series with the LED.

Consider worst case voltage variations that could occur across the current limiting resistor. The forward current should not be allowed to change by more than 40% of its desired value.

Circuit model A

Circuit model B





- (A) Recommended circuit.
- (B) The difference of brightness between LED could be found due to the VF-IF characteristics of LED.

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or antielectrostatic glove is recommended when handling these LEDs. All devices and machinery must be properly grounded.



2.8 x 0.8 x 1.2 mm Pure Green SMD LED

RELIABILITY TEST:

(1) Test items and results

Classification	Test Item	Test Condition	Sample Size
	Operating Life Test	1.Ta=Under Room Temperature As Per Data Sheet Maximum Rating. 2.If=20mA 3.t=1000 hrs	22
Endurance Test	High Temperature Storage Test	1.Ta=105℃±5℃ 2.t=500 hrs	22
	Low Temperature Storage Test	1.Ta=-40°C±5°C 2.t=1000 hrs	22
	High Temperature High Humidity Storage Test	1.IR-Reflow In-Board, 2 Times 2.Ta=85°C±5°C 3.RH=90%~95% 4.t=500hrs±2hrs	22
	Thermal Shock Test	1.IR-Reflow In-Board,2 times 2.Ta=105°C ±5°C & -40°C ±5°C (30min) (30min) 3.total 100 cycles	22
Environmental Test	Reflow Soldering Test	1.T.Sol=260 ℃±5℃ 2.Dwell Time= 10 Max.	22
	Temperature Cycling	1.105°C ~ 25°C ~ -40°C 30mins 15mins 30mins 2.100 Cyeles	22

(2) Criteria for judging the damage

Itam		Toot Conditions	Criteria for Judgement	
Item	Symbol	Test Conditions	Min.	Max.
Forward Voltage	Vf	If=20mA		U.S.L. x 1.2
Reverse Current	lr	Vr=5V		U.S.L. x 2.0
Luminous Intensity	lv	lf=20mA	L.S.L. x 0.5	

Note:

- 1. U.S.L.: Upper Standard Level.
- 2. L.S.L: Lower Standard Level.

Version 1.1 Date: 11-13-2014 Specifications are subject to change without notice.

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