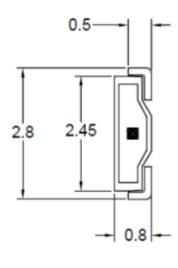
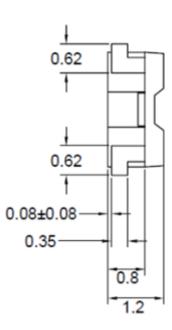


2.8 x 0.8 x 1.2 Right Angle SMD LED, Tape and Reel

PACKAGE OUTLINES

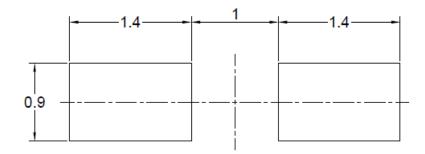






Polarity

RECOMMENDED PAD LAYOUT



NOTES:

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

Part Number	Material	Lens Color		
	Matchiai	Emitted	Lens	
L233QEC-TR	AlGaInP	Red	Water Clear	



2.8 x 0.8 x 1.2 Right Angle SMD LED, Tape and Reel

ABSOLUTE MAXIMUM RATINGS				
Parameter	Symbol	Ratings	Unit	
Power Dissipation	Pd	78	mW	
Peak Forward Current (Duty 1/10@10KHz)	lfp	90	mA	
Forward Current	lf	30	mA	
Reverse Current @ 5V	lr	10	μA	
Electrostatic Discharge	ESD	± 500	V	
Operating temperature range	Topr	-40~+85	°C	
Storage temperature range	Tstg	-40~+90	°C	
Soldering Temperature	Tsol	Max 260°C for 5 sec		

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Min	Тур	Max	Unit
Luminous Intensity	lv	I _F =20mA	125	400		mcd
Peak Wavelength	λP			636	-	nm
Dominant Wavelength	λD			625		nm
Spectral Line Half-Width	Δλ			20		nm
Forward Voltage	Vf		1.7		2.6	V
Viewing angle	20 1⁄2			115		Deg

*Note: 1. The forward voltage data did not include ±0.1V testing tolerance.

2. The luminous intensity data did not include ±15% testing tolerance.



2.8 x 0.8 x 1.2 Right Angle SMD LED, Tape and Reel

1.2

1.0

0.8

0.6

0.2

0.0

20

30

40

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES

Fig.1 Forward current vs. Forward Voltage

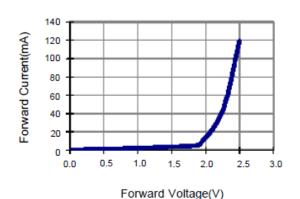


Fig.3 Forward Voltage vs. Temperature

Fig.2 Relative Light Output Power vs. Forward Current

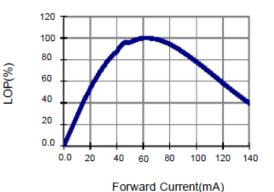


Fig.4 Relative Intensity vs. Temperature

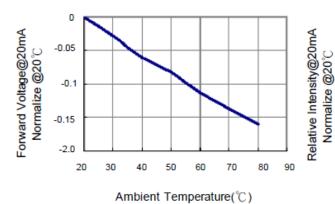
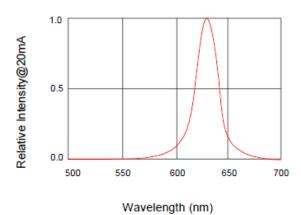


Fig.5 Relative Intensity vs. Wavelength





50

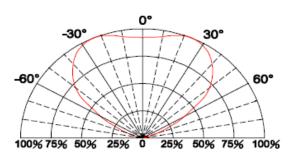
60

Ambient Temperature(°C)

70

80

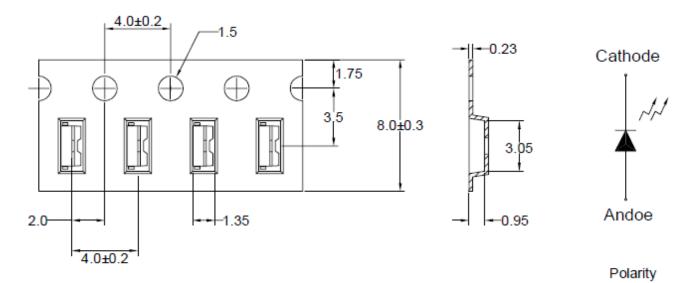
90





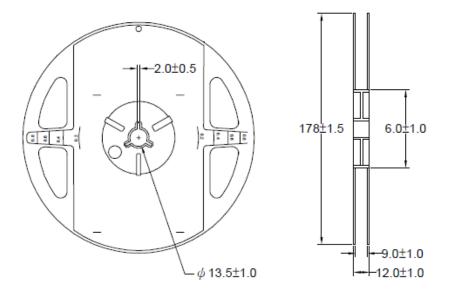
2.8 x 0.8 x 1.2 Right Angle SMD LED, Tape and Reel

CARRIER TAPE DIMENSION



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

REEL DIMENSIONS



Notes:

1. 3000 pieces per reel.

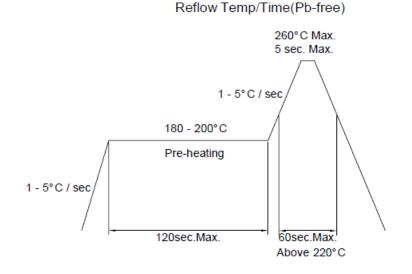


2.8 x 0.8 x 1.2 Right Angle SMD LED, Tape and Reel

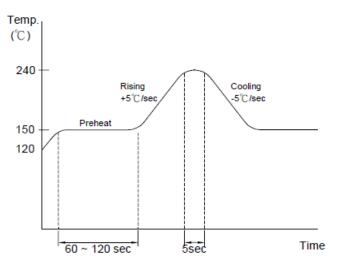
RECOMMENDED SOLDERING CONDITIONS

Basic spec is \leq 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







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 Right Angle SMD LED, Tape and Reel

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.



(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 Right Angle SMD LED, Tape and Reel

RELIABILITY TEST:

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 ℃±5℃ 2.t=1000 hrs	22
	High Temperature High Humidity Storage Test	1.IR-Reflow In-Board, 2 Times 2.Ta=85℃±5℃ 3.RH=90 %~95% 4.t=500hrs±2hrs	22
Environmental Test	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
	Reflow Soldering Test	1.T.Sol=260 ℃±5℃ 2.Dwell Time= 10 Max.	22
	Temperature Cycling	1.105℃ ~ 25℃ ~ -40℃ 30mins 15mins 30mins 2.100 Cyeles	22

Criteria for judging the damage

Item	Symbol	Test Conditions	Criteria for Judgement		
nem			Min.	Max.	
Forward Voltage	Vf	lf=20mA	-	U.S.L x1.2	
Reverse Current	Ir	Vr=5V	-	U.S.L x2.0	
Luminous Intensity	Iv	lf=20mA	L.S.L x 0.5	-	

Note: 1. U.S.L.: Upper standard level 2. L.S.L.: Lower standard level