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Technical Data Sheet

MODEL NO : Q776R4

3528 Package 2.8*3.2mm Chip LEDs

Features :

- Compatible with automatic placement equipment
- Compatible with reflow solder process

Applications :

- Indicators
- Automotive : backlighting in dashboard and switch
- Backlight for LCD

Dice material	Emitted color	Lens Color
AlGaInP	Red	Water Clear

Electrical/Optical Characteristics(Ta=25°C)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Dominant wavelength	If=20mA	λ_{dom}	620	625	630	nm
Forward voltage	If=20mA	Vf	1.8		2.2	V
Luminous intensity	If=20mA	Iv	200	250	300	mcd
Viewing angle at 50% Iv	If=10mA	$2\theta_{1/2}$		120		Deg
Reverse current	Vr=5V	Ir			10	μ A

Absolute Maximum Ratings(Ta=25°C)

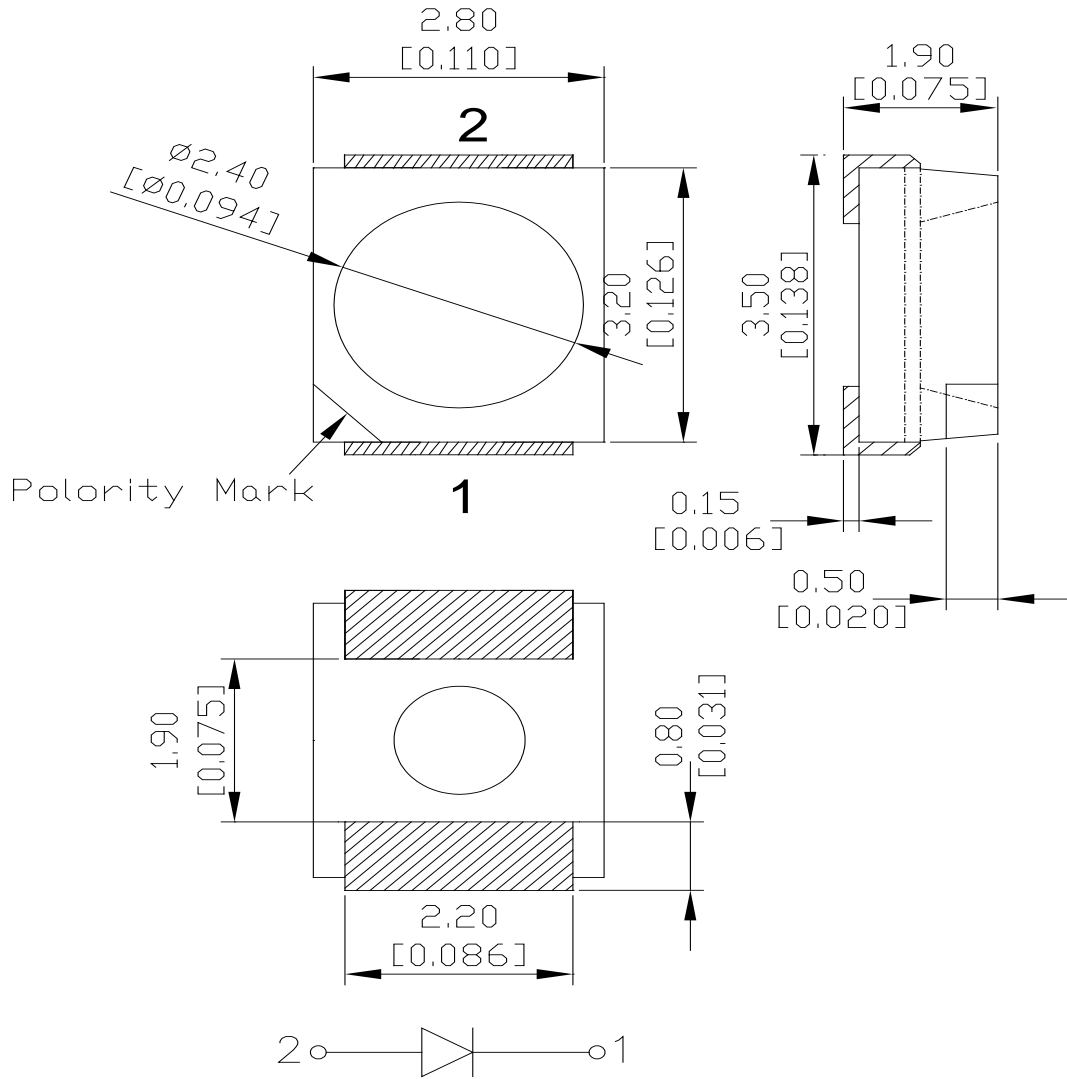
Parameter	Symbol	Value	Unit
Power dissipation	Pd	60	mW
Forward current	If	20	mA
Reverse voltage	Vr	5	V
Operating temperature range	Top	-40 ~+80	°C
Storage temperature range	Tstg	-40 ~+85	°C
Peak pulsing current (1/8 duty f=1kHz)	I _{fp}	20	mA

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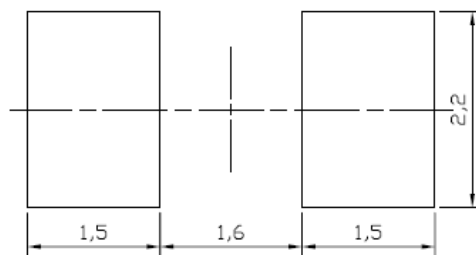


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PACKAGING DIMENSIONS



◆ **Recommended soldering pattern**
(Units:mm)





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Typical Electro-Optical Characteristics Curve:

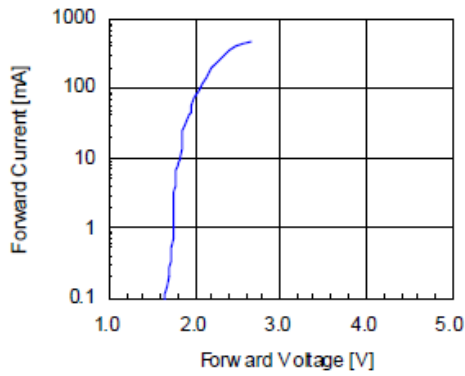


Fig 3. Forward Voltage vs. Temperature

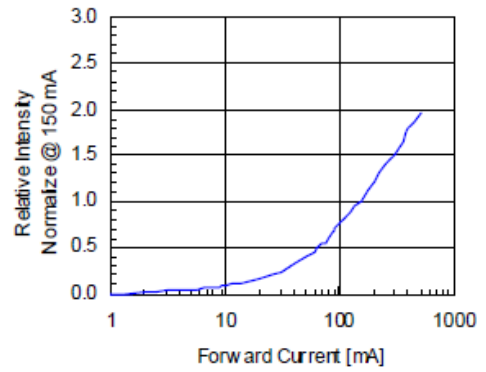


Fig 4. Relative Intensity vs. Temperature

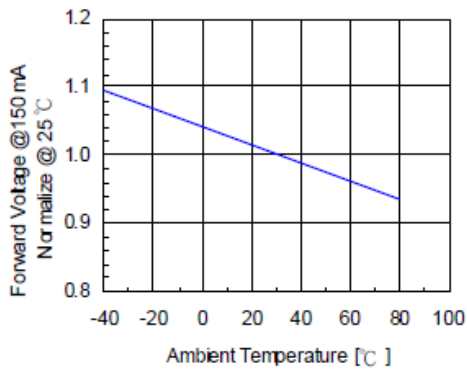
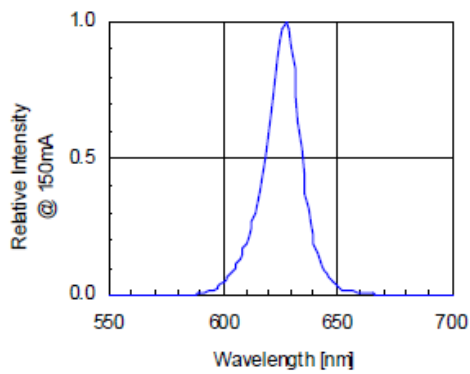
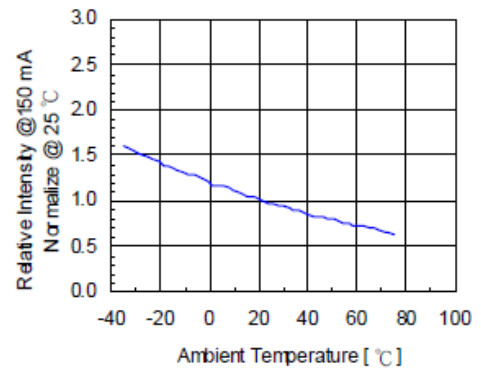


Fig 5. Relative Intensity vs. Wavelength





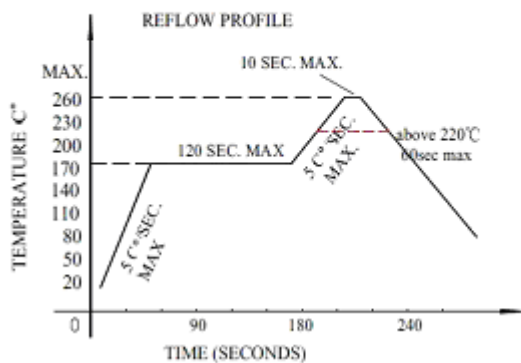
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Precautions For Use :
Over - current - proof
Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen)
Storage
1. The operation of temperature and R.H. are : $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$, 60%R.H. Max.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a dampproof box with desiccating regent. Considering the tape life, we suggest our customers to use our products within 1.5 year (from production date) .
3. It's recommended to bake before soldering when the package is unsealed after 72 hrs. The condition is : $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 15hrs.

■ Reflow Temp/Time

■ Temperature-profile (Surface of circuit board)

Use the following conditions shown in the figure.



NOTES:

1. We recommend the reflow temperature $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$. the maximum soldering temperature should be limited to 260°C .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■Soldering iron

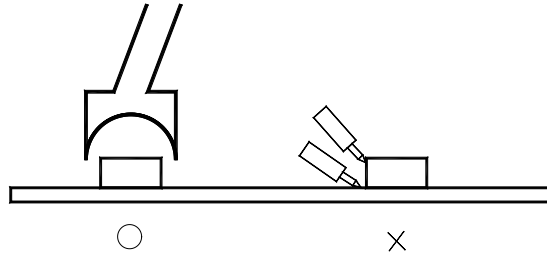
Basic spec is $\leq 5\text{sec}$ when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

■Rework

1. Customer must finish rework within 5 sec under 260°C .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



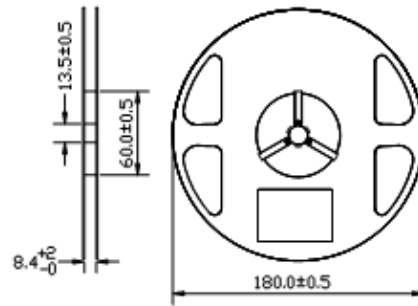
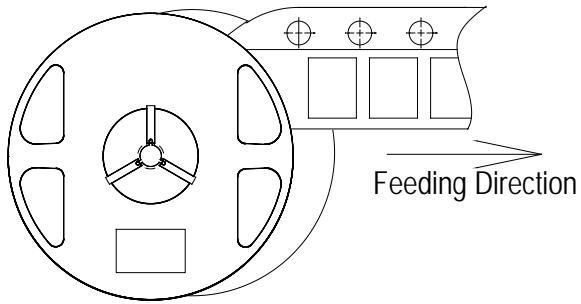
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■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

■ Feeding Direction

■ Dimensions of Reel (Unit: mm)



■ Dimensions of Tape (Unit: mm)

