

LED SMD

Lead-Free Part

LG-195-8SEF/WK-DT/T-P-1-C01**DATA SHEET**DOC. NO : QW0905-LG-195-8SEF/WK-DT/T-P-1-C01REV: BDATE : 30 - Apr. - 2012

Features:

1. Package in 8.0mm carrier tape on 7" diameter reel.
2. Compatible with automatic placement equipment.
3. Compatible with infrared and vapor phase reflow solder process.

Descriptions:

1. The LG-195 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
2. Besides, lightweight makes them ideal for miniature applications. etc.

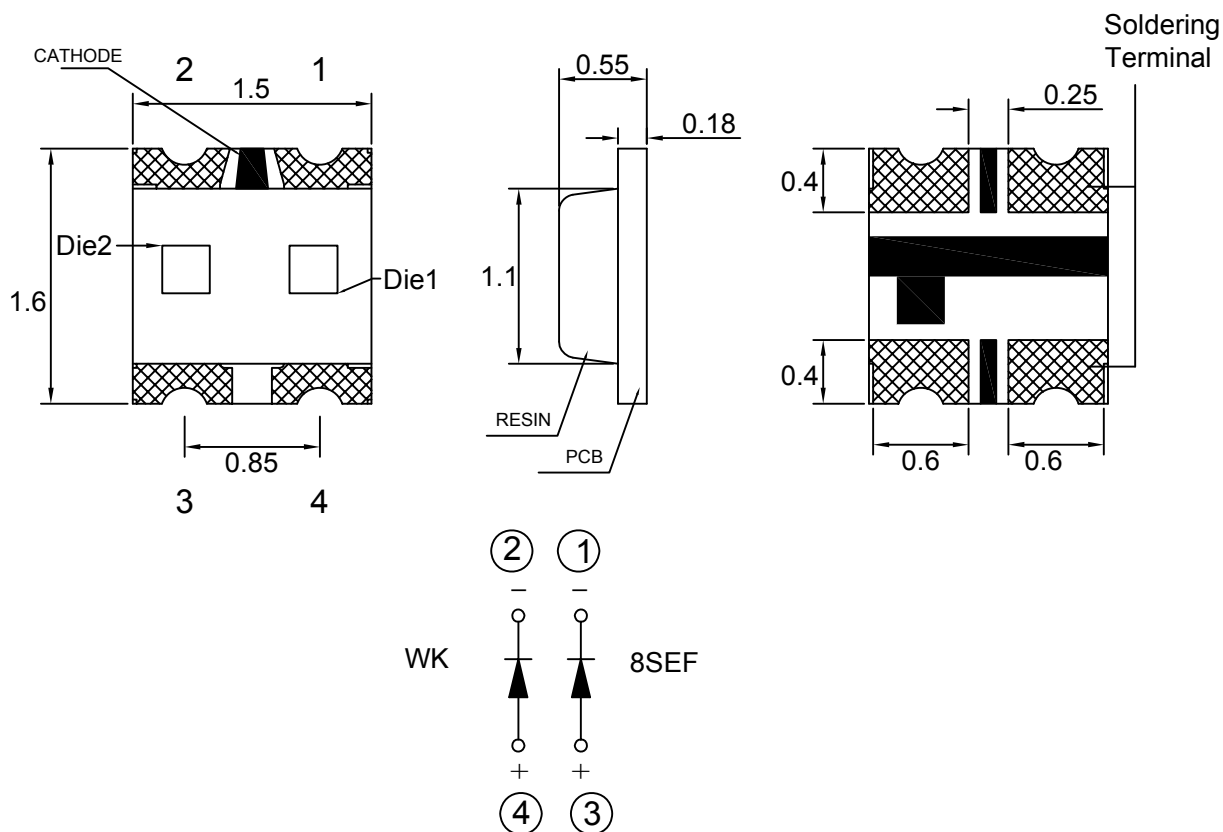
Applications:

1. Automotive : backlighting in dashboard and switch.
2. Telecommunication : indicator and backlighting in telephone and fax.
3. Flat backlight for LCD, switch and symbol
4. General use.

Device Selection Guide:

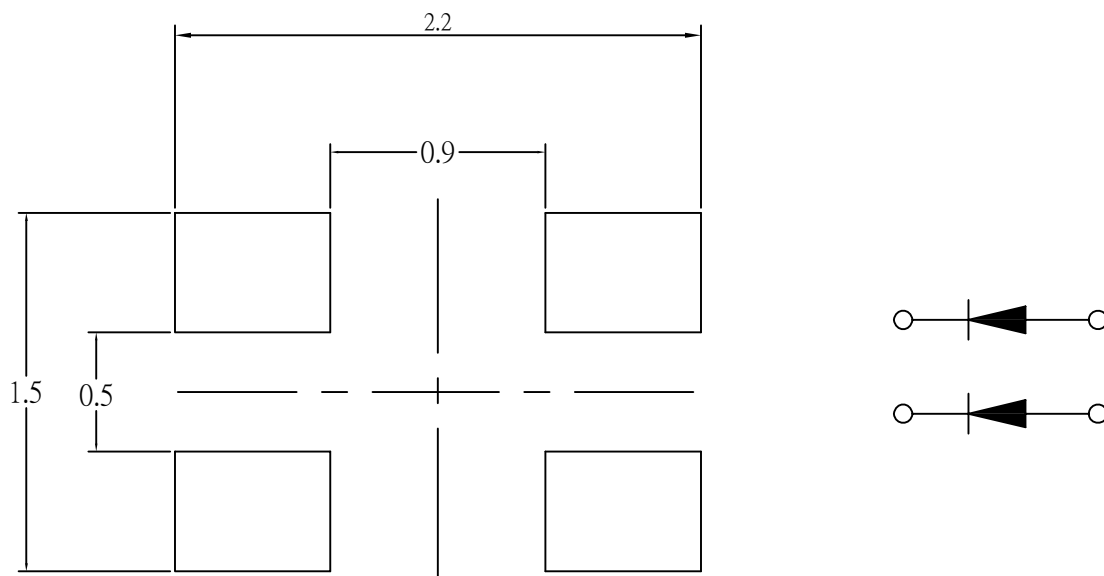
PART NO	MATERIAL	COLOR	
		Emitted	Lens
LG-195-8SEF/WK-DT/T-P-1-C01	AlGaInP	Orange	Yellow Diffused
	InGaN/GaN	White	

Package Dimensions



Note : 1.All dimension are in millimeter tolerance is $\pm 0.1\text{mm}$ unless otherwise noted.
2.Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is $\pm 0.1\text{mm}$, Angle ± 0.5 . Unit=mm.

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Ratings		UNIT
		8SEF	WK	
Power Dissipation	PD	78	80	mW
Peak Forward Current Duty 1/10@10KHz	IFP	60	100	mA
Forward Current	IF	30	30	mA
Reverse Current @5V	Ir	10	50	μA
Electrostatic Discharge	ESD	2000	500	V
Operating Temperature	Topr	-20 ~ +80		°C
Storage Temperature	Tstg	-30 ~ +100		°C

Typical Electrical & Optical Characteristics (Ta=25°C)

Items	Symbol		Min.	Typ.	Max.	UNIT	CONDITION
Luminous Intensity	Iv	8SEF	8	----	50	mcd	IF=5mA
		WK	50	----	200		
Dominant Wavelength	λD	8SEF	----	605	----	nm	IF=5mA
Chromaticity Coordinates	X	WK	0.260	----	0.310	----	IF=5mA
	Y		0.225	----	0.340		
Spectral Line Half-Width	△λ	8SEF	----	20	----	nm	IF=20mA
		WK	----	20	----		
Forward Voltage	VF	8SEF	1.7	----	2.6	V	IF=5mA
		WK	2.6	----	3.2		
Viewing Angle	2θ 1/2	8SEF	----	120	----	deg	IF=20mA
		WK	----	120	----		

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.
2. The luminous intensity data did not including ±15% testing tolerance.

Luminous Intensity Classification

Group		Iv(mcd) at 5mA	
		Min.	Max.
8SEF	K	8	12.5
	L	12.5	20
	M	20	32
	N	32	50
WK	P	50	80
	Q	80	125
	R	125	200

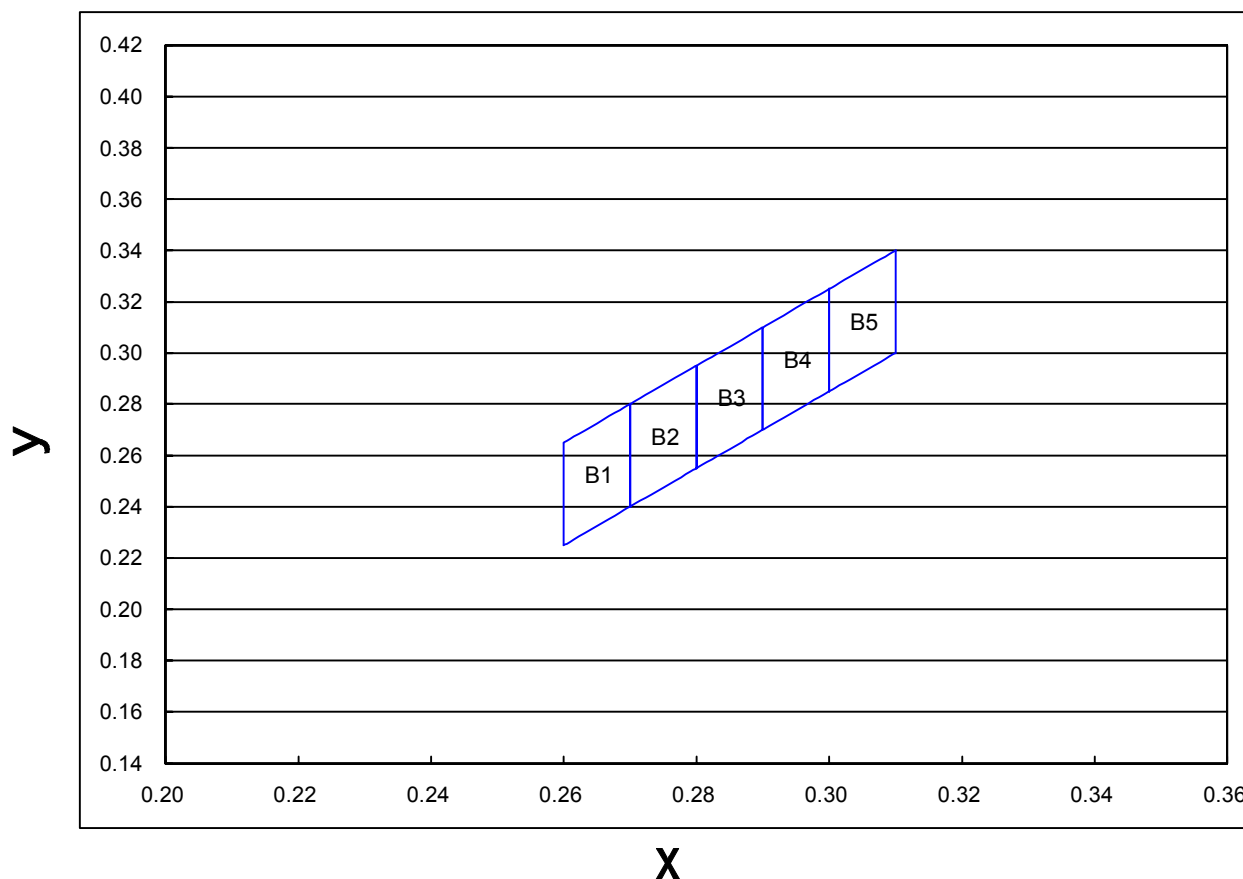
Dominant Wavelength Classification

BIN CODE		$\lambda D(nm)$ at 5mA	
		Min.	Max.
8SEF	21	600	603
	22	603	606
	23	606	609
	24	609	612

Chromaticity Coordinates Specifications For Bin Grading

BIN CODE	Color Coordiante at5mA							
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
B1	0.26	0.265	0.26	0.225	0.27	0.24	0.27	0.28
B2	0.27	0.28	0.27	0.24	0.28	0.225	0.28	0.295
B3	0.28	0.295	0.28	0.255	0.29	0.27	0.29	0.31
B4	0.29	0.31	0.29	0.27	0.3	0.285	0.3	0.325
B5	0.3	0.325	0.3	0.285	0.31	0.3	0.31	0.34

CIE Chromaticity Diagram



Typical Electro-Optical Characteristics Curve

WK CHIP

Fig.1 Forward current vs. Forward Voltage

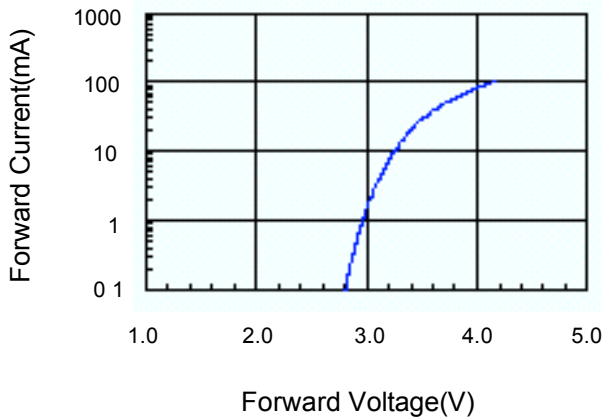


Fig.2 Relative Intensity vs. Forward Current

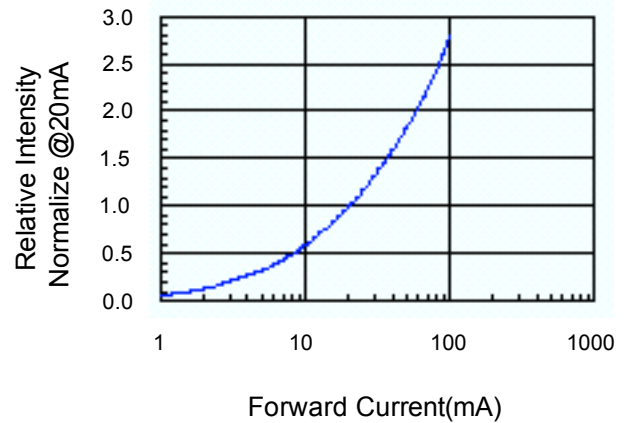


Fig.3 Forward Voltage vs. Temperature

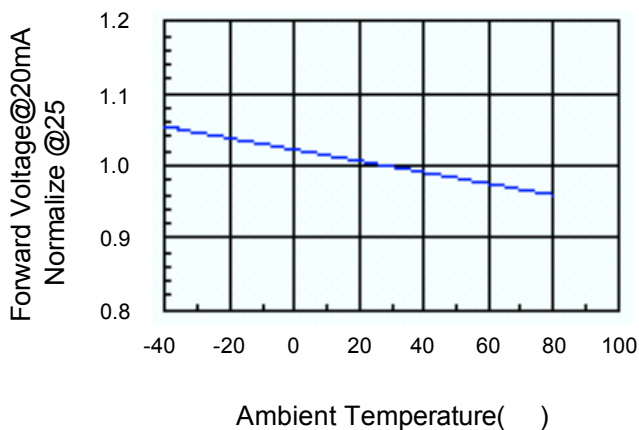


Fig.4 Relative Intensity vs. Temperature

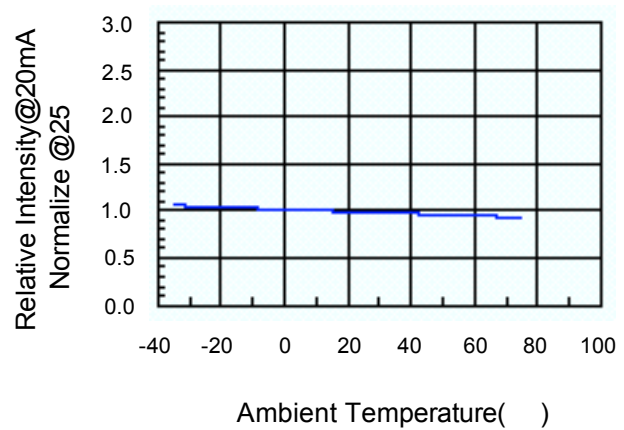


Fig.5 Luminous Spectrum (Ta=25 °C)

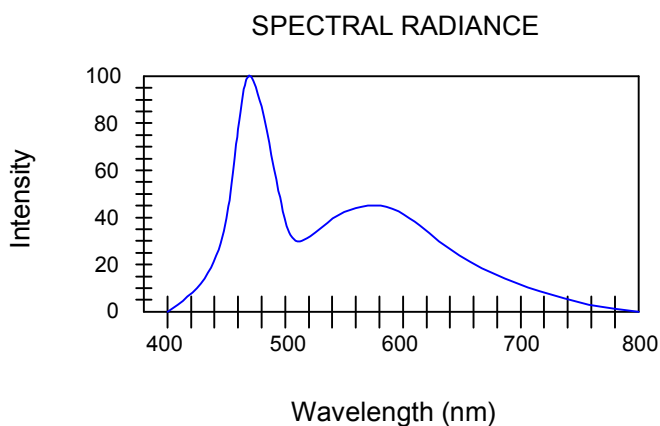
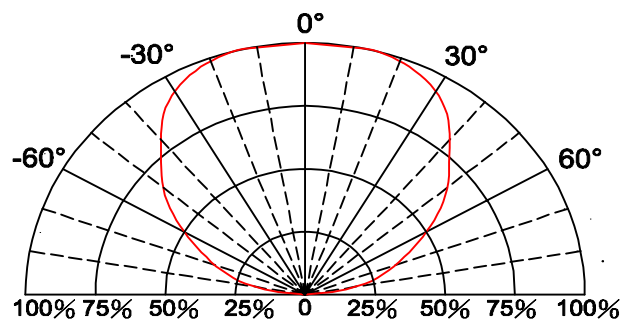


Fig.6 Directive Radiation



Typical Electro-Optical Characteristics Curve

8SEF CHIP

Fig.1 Forward current vs. Forward Voltage

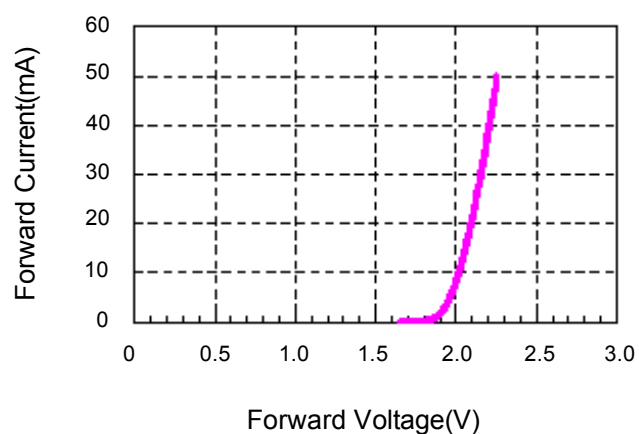


Fig.2 Relative Intensity vs. Forward Current

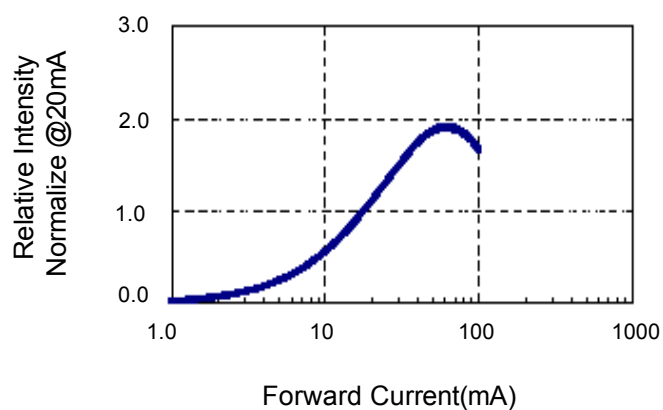


Fig.3 Forward Voltage vs. Temperature

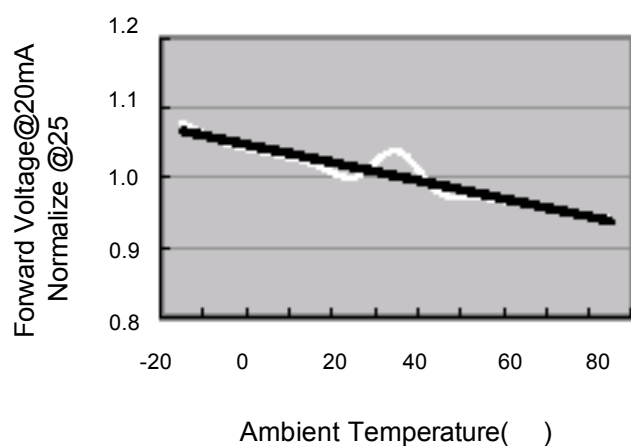


Fig.4 Relative Intensity vs. Temperature

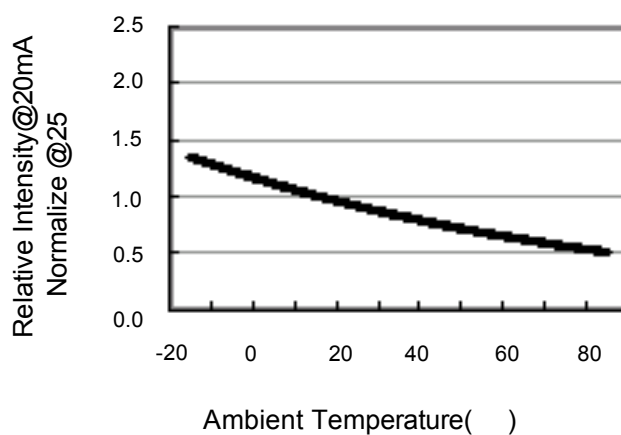


Fig.5 Relative Intensity vs. Wavelength

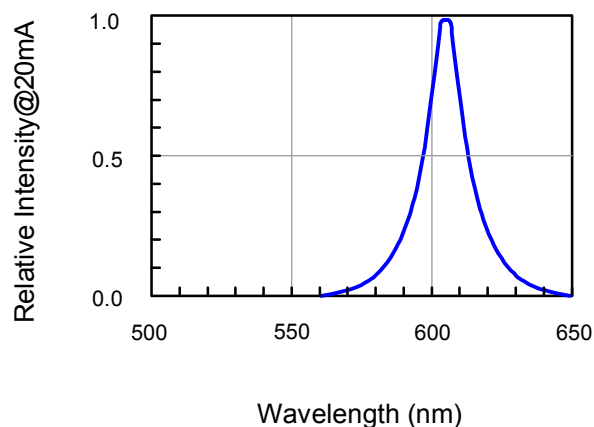
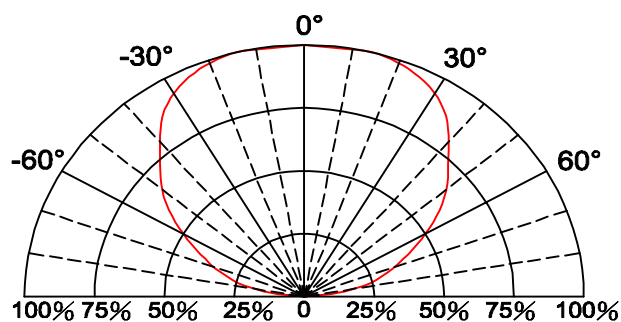


Fig.6 Directive Radiation



Label Explanation

	LIGITEK ELECTRONICS CO., LTD.	
PART :	LG-195-8SEF/WK-DT/T-P-1-C01	
LOT :	GS1-080168	
QTY(PCS) :	4000PCS	VF:1.8-2.0
BIN/HUE :	L/23-Q/B2	VF:2.8-3.6

BIN N : Orange Chip Luminous Intensity

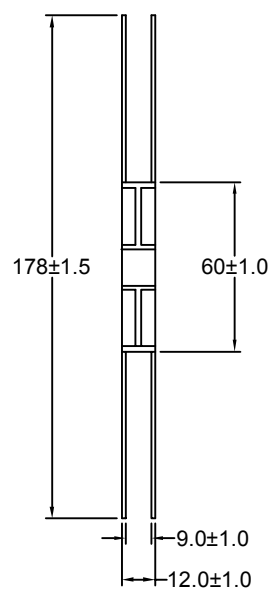
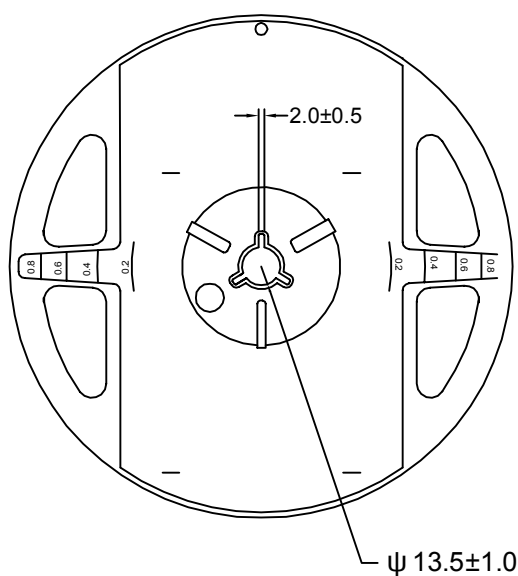
BIN Q: WK Chip Luminous Intensity

HUE 18 : Orange Chip Dominant Wavelength

HUE 9 : WK Chip Dominant Wavelength

1.8 - 2.0 : Forward Voltage

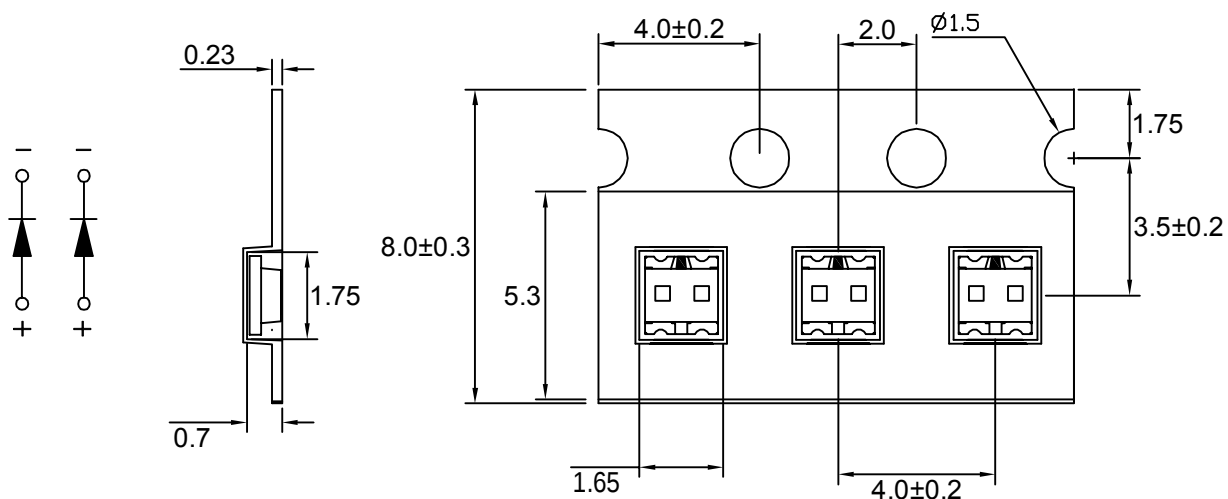
Reel Dimensions



PART NO. LG-195-8SEF/WK-DT/T-P-1-C01

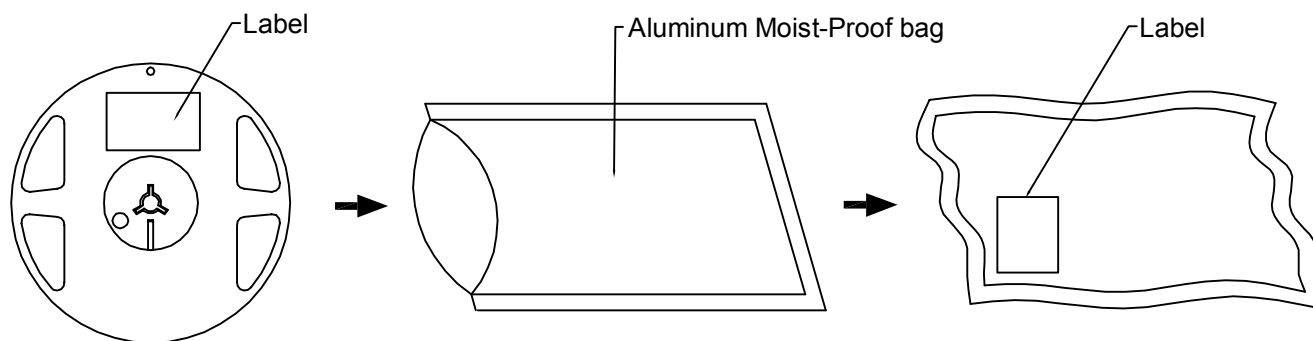
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Carrier Tape Dimensions



Note : The tolerances unless mentioned is $\pm 0.1\text{mm}$, Angle $\pm 0.5^\circ$. Unit=mm.

Packing Specifications

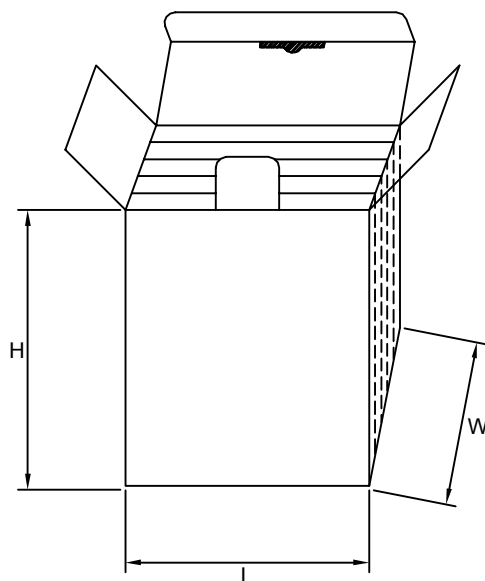


Part No.	Description	Quantity/Reel
LG-195-8SEF/WK-DT/T-P-1-C01	8.0mm tape, 7" reel	4000 devices

Box Explanation

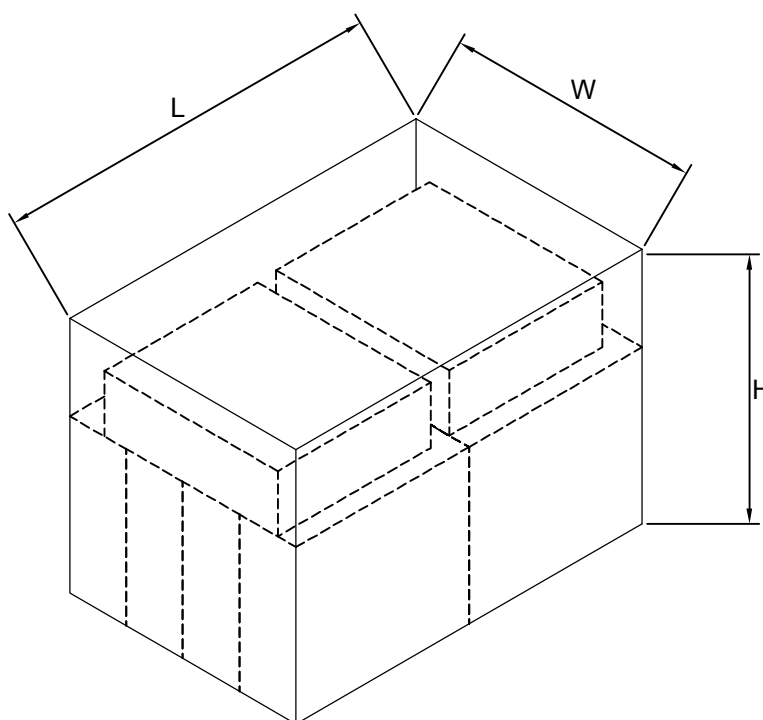
1. 5 BAG / INNER BOX

2. INNER BOX SIZE : L X W X H 23cm X 8.5cm x 26cm



3. 10 INNER BOXES / CARTON

4. CARTON SIZE : L X W X H 58cm X 34cm x 35cm

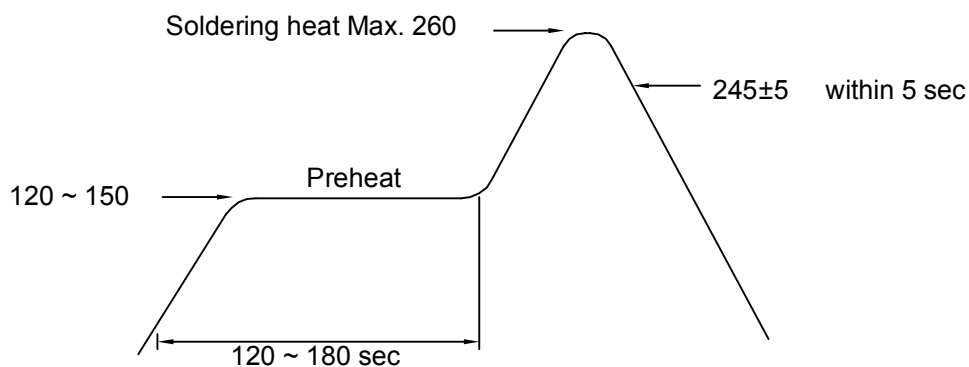


Recommended Soldering Conditions

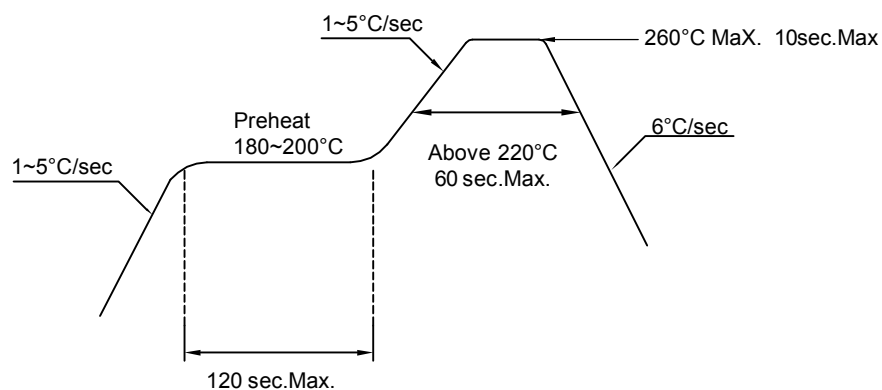
1. Hand Solder

Basic spec is 280 3 sec one time only.

2. Wave Solder



3. PB-Free Reflow Solder



Note:

- 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.

Precautions For Use:**Storage time:**

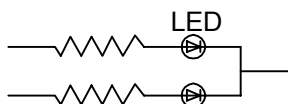
- 1.The operation of Temperatures and RH are : 5 ~35 ,RH60%.
- 2.Once the package is opened, the products should be used within a week.
Otherwise, they should be kept in a damp proof box with descanting agent.
Considering the tape life, we suggest our customers to use our products within
a year at < 30 and < 90% relative humidity(RH). (from production date).
- 3.If opened more than one week in an atmosphere 5 ~ 35 ,RH60%,
they should be treated at 60 ±5 fo r 15hrs.

Drive Method:

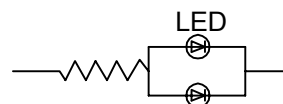
LED is a current operated device, and therefore, requirer some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.

Consider worst case voltage variations than 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 anti-electrosatic glove is recommended when handing these LED. All devices, equipment and machinery must be properly grounded.

Reliability Test:

Classification	Test Item	Test Condition	Reference Standard
Endurance Test	Operating Life Test	1.Ta=Under Room Temperature As Per Data Sheet Maximum Rating. 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	MIL-STD-750D: 1026 MIL-STD-883D: 1005 JIS C 7021: B-1
	High Temperature Storage Test	1.Ta=105 ±5 2.t=1000 hrs (-24hrs, +72hrs)	MIL-STD-883D:1008 JIS C 7021: B-10
	Low Temperature Storage Test	1.Ta=-40 ±5 2.t=1000 hrs (-24hrs, +72hrs)	JIS C 7021: B-12
	High Temperature High Humidity Storage Test	1.Ta=65 ±5 2.RH=90%~95% 3.t=1000hrs; 2hrs	MIL-STD-202F:103B JIS C 7021: B-11
Environmental Test	Thermal Shock Test	1.Ta=105 ±5 & -40 ±5 (10min) (10min) 2.total 10 cycles	MIL-STD-202F: 107D MIL-STD-750D: 1051 MIL-STD-883D: 1011
	Solderability Test	1.T.Sol=235 ±5 2.Immersion time 2±0.5sec 3.Coverage 95% of the dipped surface	MIL-STD-202F: 208D MIL-STD-750D: 2026 MIL-STD-883D: 2003 IEC 68 Part 2-20 JIS C 7021: A-2
	Temperature Cycling	1.105 ~ 25 ~ -55 ~ 25 30mins 5mins 30mins 5mins 2.10 Cycles	MIL-STD-202F: 107D MIL-STD-750D: 1051 MIL-STD-883D: 1010 JIS C 7021: A-4
	IR Reflow	1.T=260°C Max. 10sec.Max. 2. 6 Min	MIL-STD-750D:2031.2 J-STD-020