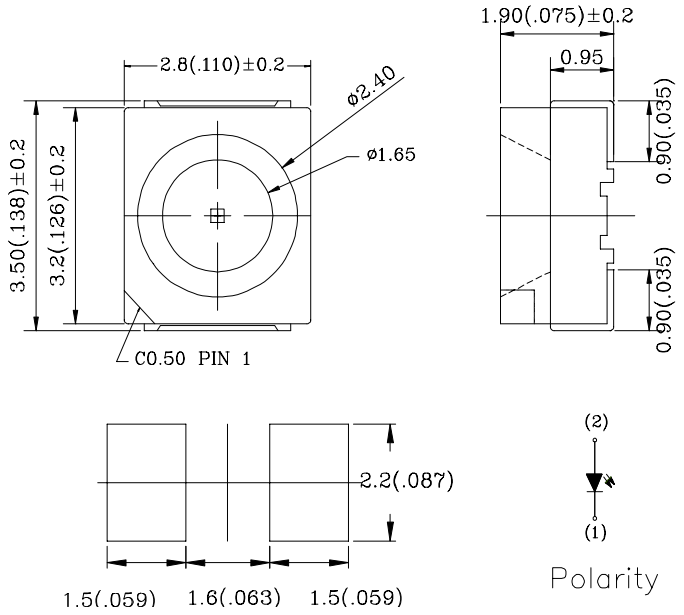
● Features:

1. Emitted Color: Super Orange Red.
2. Lens Appearance: Water Clear.
3. Mono-color type.
4. 2.8x3.5x1.9mm standard package.
5. Suitable for all SMT assembly methods.
6. Compatible with infrared and vapor phase reflow solder process.
7. Compatible with automatic placement equipment.
8. This product doesn't contain restriction Substance, comply ROHS standard.

● Applications:

1. Automotive: Dashboards, stop lamps , turn signals.
2. Backlighting: LCDs, Key pads advertising.
3. Status indicators: Consumer & industrial electronics.
4. General use.

●Package Dimensions:



NOTES:
1.All dimensions are in millimeters (inches).
2.Tolerance is ±0.10mm (0.004") unless otherwise specified.
3.Specifications are subject to change without notice.

● Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	75	mW
Forward Current	I_F	30	mA
Peak Forward Current*1	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	Topr	-40℃~100℃	-
Storage Temperature	Tstg	-40℃~100℃	-
Soldering Temperature	Tsol	See Page 7	-

*1 Condition for I_{FP} is pulse of 1/10 duty and 3 msec width.

● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf	I_F=20mA	-	2.0	2.6	V
Luminous Intensity	Iv	I_F=20mA	63	100	-	mcd
Peak Wavelength	λp	I_F=20mA	-	630	-	nm
Dominant Wavelength	λd	I_F=20mA	620	-	632	nm
Spectral Line Half-width	Δλ	I_F=20mA	-	20	-	nm
Reverse Current	I_R	V_R=5V	-	-	100	μA
Viewing Angle	$2\theta_{1/2}$	I_F=20mA	-	120	-	deg

● Typical Electro-Optical Characteristics Curves

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

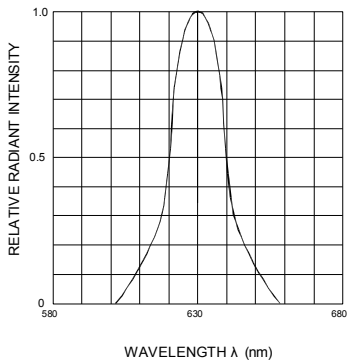


Fig.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

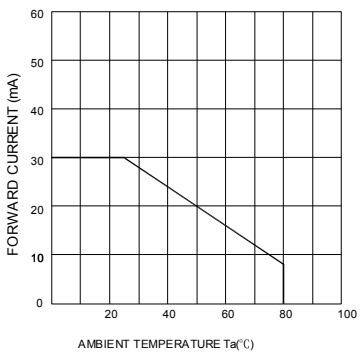


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

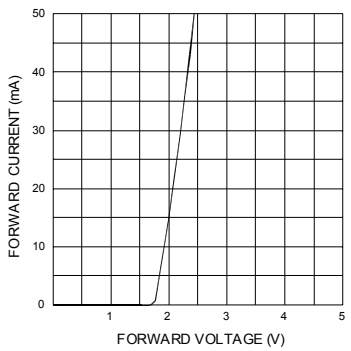


Fig.4 RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

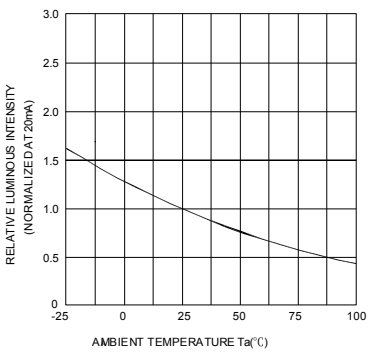


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

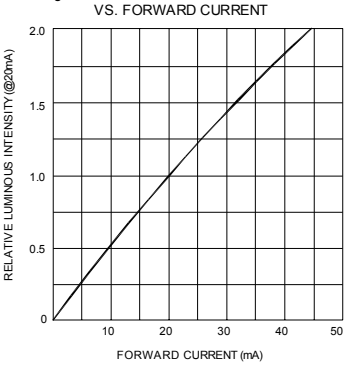
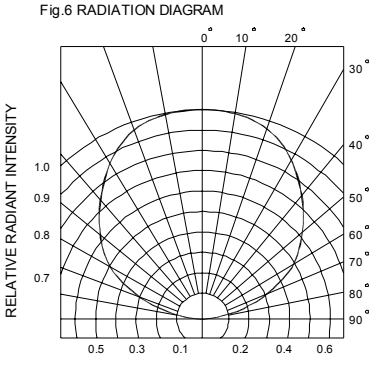
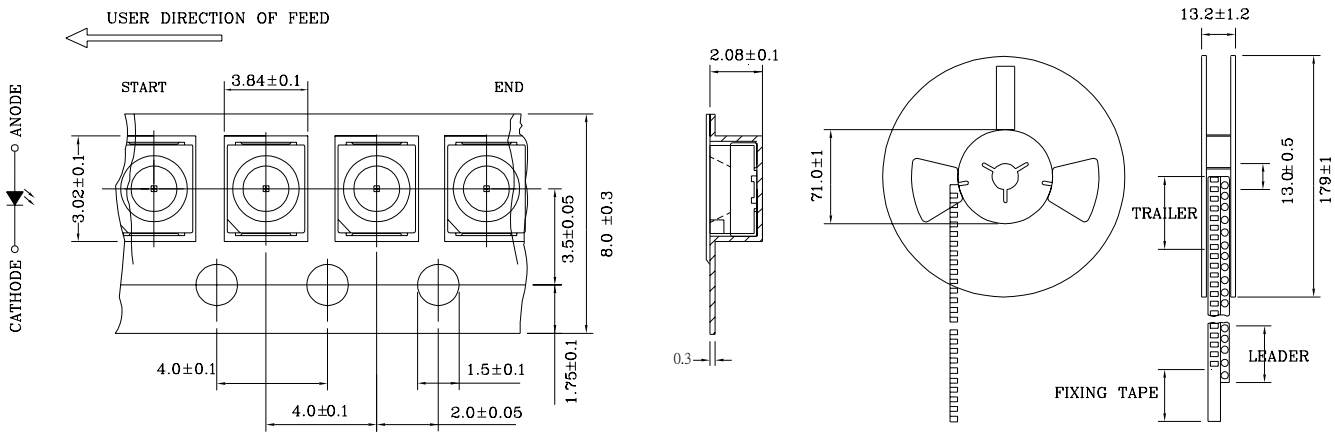


Fig.6 RADIATION DIAGRAM

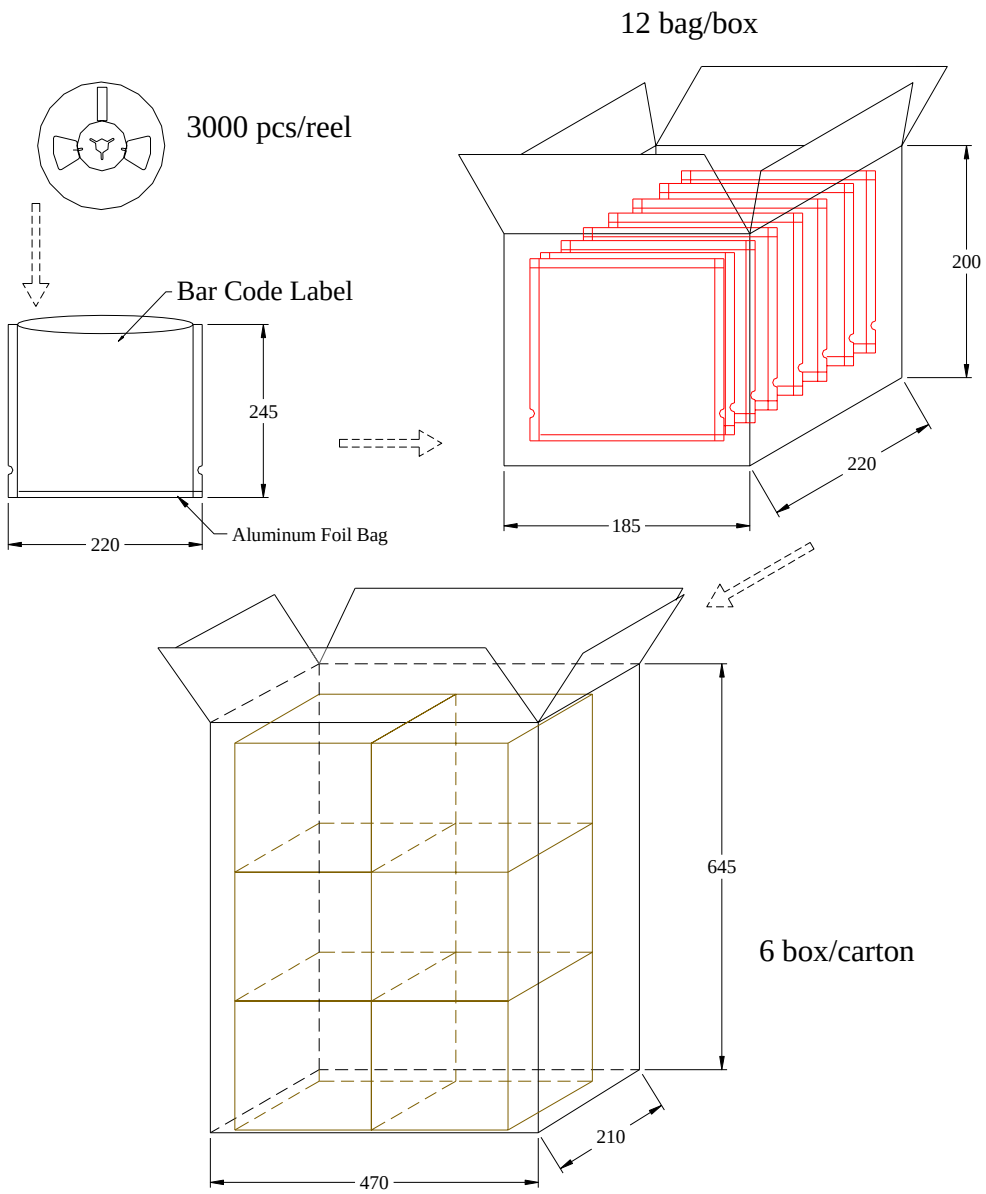


● Tapping and packaging specifications(Units: mm)



NOTE:3000 PCS PER REEL

●Package Method:(unit:mm)



● Intensity Bin Limits (At 20 mA)

BIN CODE	Min. (mcd)	Max. (mcd)
P	63	94
Q	94	140

Tolerance for each Bin limit is ±10%.

● Color Bin Limits (At 20 mA)

BIN CODE	Min. (nm)	Max. (nm)
6	620	624
7	624	628
8	628	632

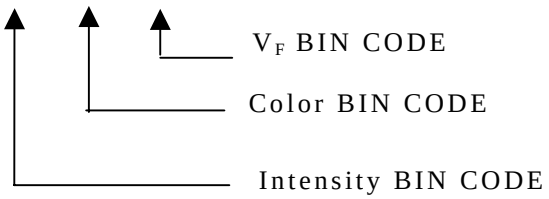
Tolerance for each Bin limit is ± 1 nm

● Forward Voltage Bin Limits (At 20 mA)

BIN CODE	Min.(V)	Max.(V)
B	1.8	2.0
C	2.0	2.2
D	2.2	2.4
E	2.4	2.6

Tolerance for each Bin limit is ± 0.02V.

● BIN : x x x



● Reliability Test

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	I_F=20mA Ta=Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	Ta=+65℃±5℃ RH=90%-95% Test time=240hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High Ta=+85℃±5℃ Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-35℃±5℃ Test time=1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-35℃ ~ +25℃ ~ +85℃ ~ +25℃ 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	-35℃±5℃ ~+85℃±5℃ 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS-C-7021 :A-1	Preheating： 140℃-160℃,within 2 minutes. Operation heating： 260℃(Max.), within 10seconds. (Max.)	0/20

● Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V_F (V)	I_F=20mA	Over U^1x1.2
Reverse current	I_R (uA)	V_R=5V	Over U^1x2
Luminous intensity	Iv (mcd)	I_F=20mA	Below S^1X0.5

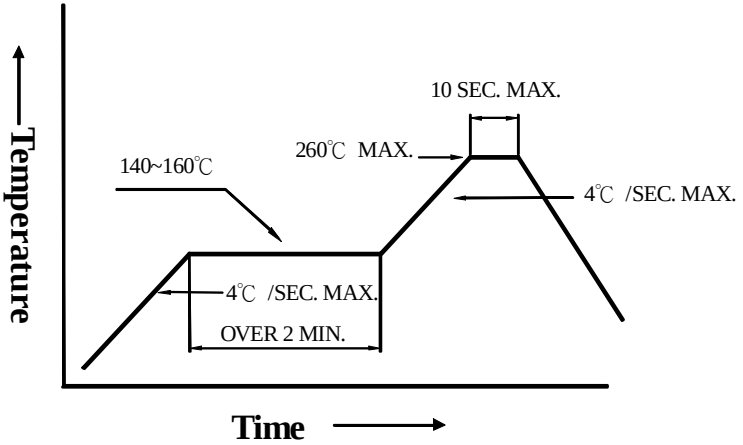
Note: 1. U means the upper limit of specified characteristics. S means initial value.

2. After each test, remove test pieces, wait for 2 hours and test pieces have returned to ambient temperature, then take next measurement.

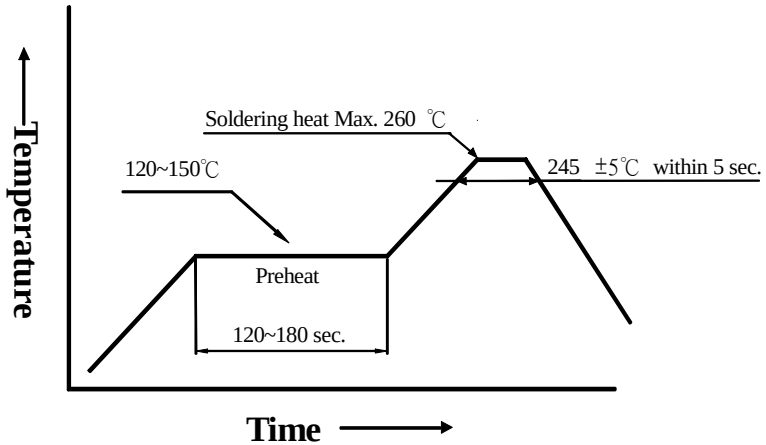
Soldering :

1. Manual Soldering
   The temperature of the iron tip should not be higher than 300℃(572℉) and Soldering time to be within 3 seconds per solder-pad.

2. Reflow Soldering
   Preheating : 140℃~160℃±5℃,within 2 minutes.
   Operation heating : 260℃(Max.) within 10 seconds.(Max)
   Gradual Cooling (Avoid quenching).



3. DIP soldering (Wave Soldering) :
   Preheating : 120℃~150℃,within 120~180 sec.
   Operation heating : 245℃±5℃ within 5 sec.260℃ (Max)
   Gradual Cooling (Avoid quenching).



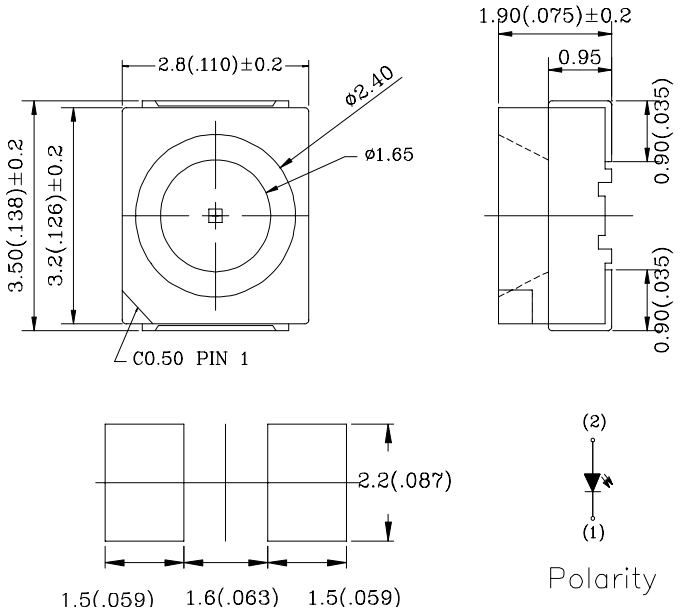
● Features:

1. Emitted Color: Green.
2. Lens Appearance: Water Clear.
3. Mono-color type.
4. 2.8x3.5x1.9mm standard package.
5. Suitable for all SMT assembly methods.
6. Compatible with infrared and vapor phase reflow solder process.
7. Compatible with automatic placement equipment.
8. This product doesn't contain restriction Substance, comply ROHS standard.

● Applications:

1. Automotive: Dashboards, stop lamps , turn signals.
2. Backlighting: LCDs, Key pads advertising.
3. Status indicators: Consumer & industrial electronics.
4. General use.

●Package Dimensions:



NOTES:
1.All dimensions are in millimeters (inches).
2.Tolerance is ±0.10mm (0.004") unless otherwise specified.
3.Specifications are subject to change without notice.

● Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	75	mW
Forward Current	I_F	30	mA
Peak Forward Current*1	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	Topr	-40℃~100℃	-
Storage Temperature	Tstg	-40℃~100℃	-
Soldering Temperature	Tsol	See Page 7	-

*1 Condition for I_{FP} is pulse of 1/10 duty and 3 msec width.

● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf	I_F=20mA	-	2.0	2.6	V
Luminous Intensity	Iv	I_F=20mA	28	60	-	mcd
Peak Wavelength	λp	I_F=20mA	-	570	-	nm
Dominant Wavelength	λd	I_F=20mA	566	-	576	nm
Spectral Line Half-width	Δλ	I_F=20mA	-	30	-	nm
Reverse Current	I_R	V_R=5V	-	-	100	μA
Viewing Angle	$2\theta_{1/2}$	I_F=20mA	-	120	-	deg

● Typical Electro-Optical Characteristics Curves

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

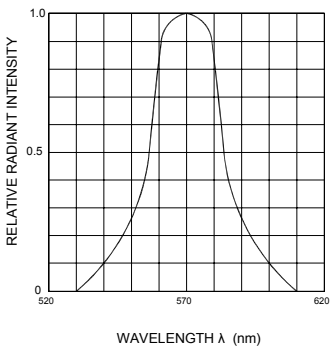


Fig.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

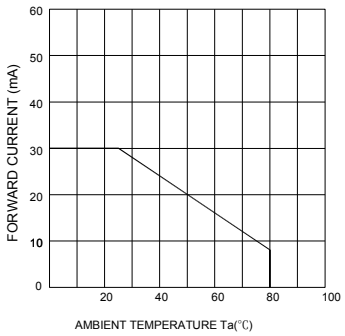


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

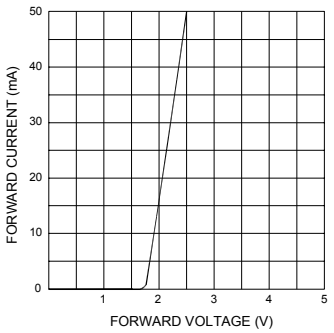


Fig.4 RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

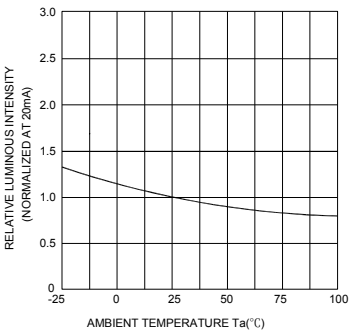


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

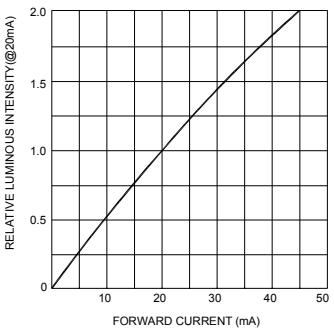
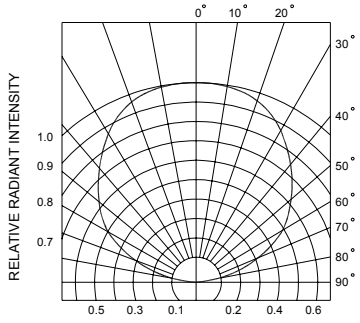
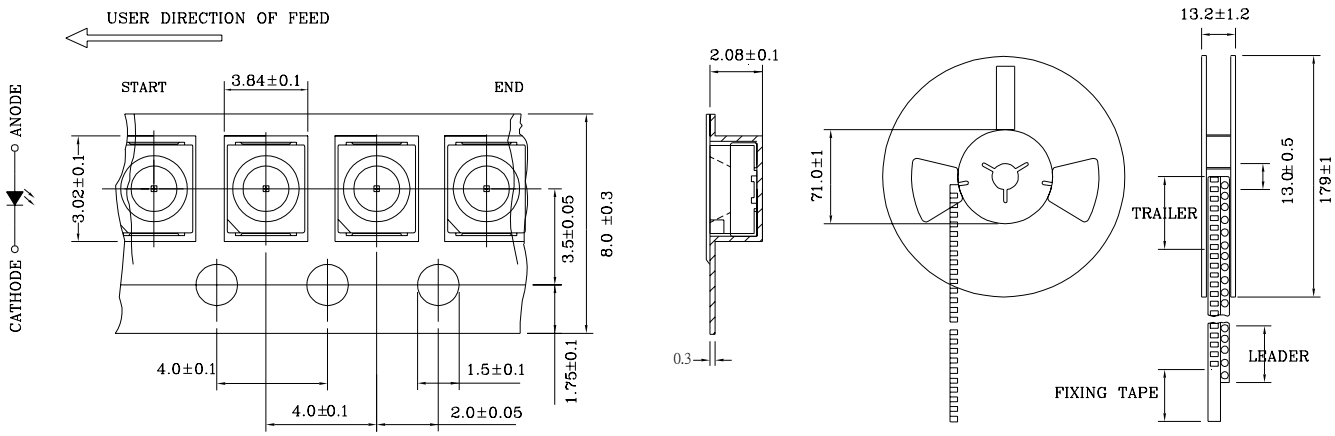


Fig.6 RADIATION DIAGRAM

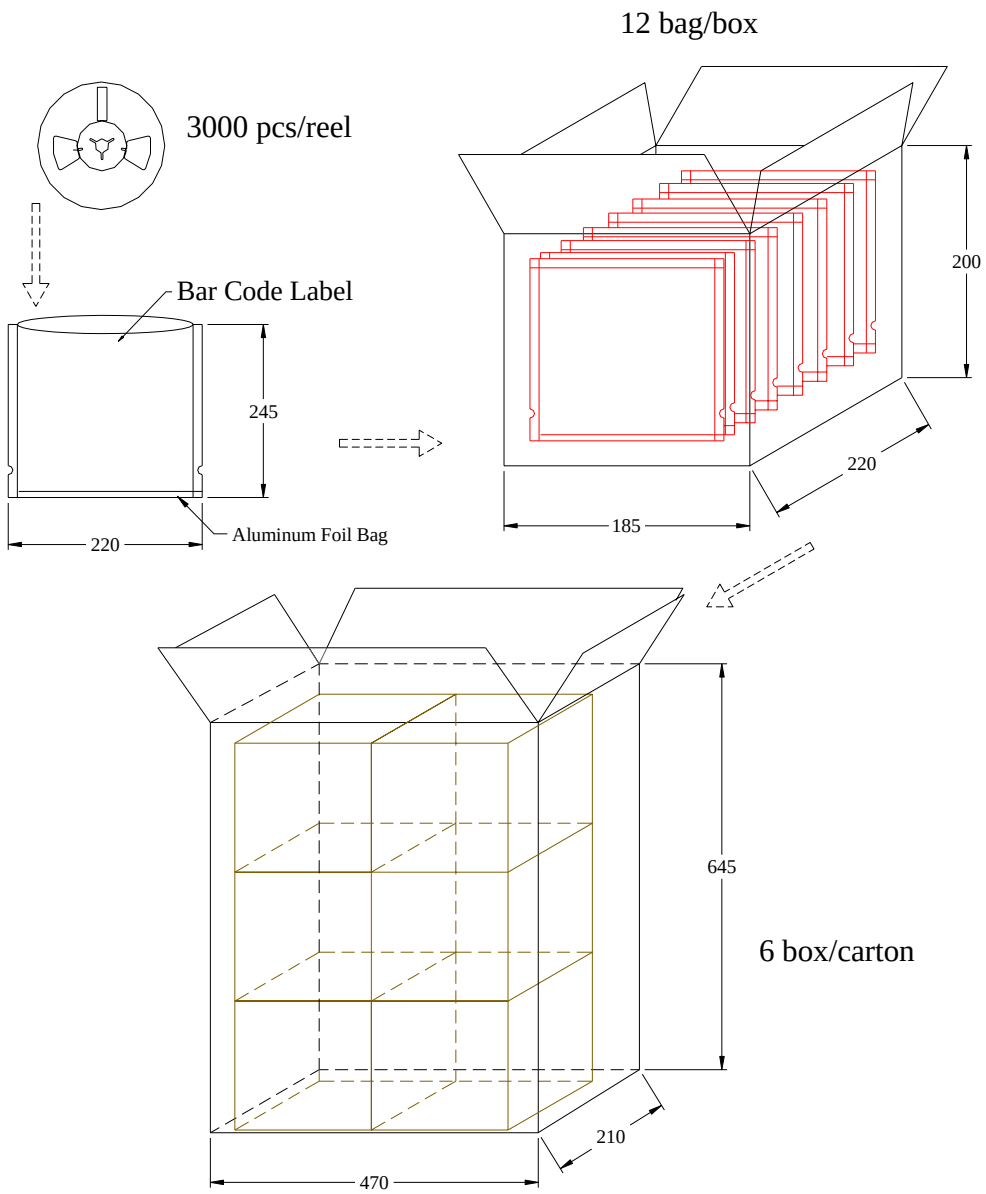


● Tapping and packaging specifications(Units: mm)



NOTE:3000 PCS PER REEL

●Package Method:(unit:mm)



● Intensity Bin Limits (At 20 mA)

BIN CODE	Min. (mcd)	Max. (mcd)
M	28	42
N	42	63
P	63	94

Tolerance for each Bin limit is ±10%.

● Color Bin Limits (At 20 mA)

BIN CODE	Min. (nm)	Max. (nm)
4	566	568
5	568	570
6	570	572
7	572	574
8	574	576

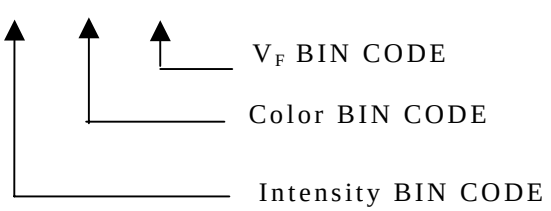
Tolerance for each Bin limit is ± 1 nm.

● Forward Voltage Bin Limits (At 20 mA)

BIN CODE	Min.(V)	Max.(V)
B	1.8	2.0
C	2.0	2.2
D	2.2	2.4
E	2.4	2.6

Tolerance for each Bin limit is ± 0.02V.

● BIN : x x x



● Reliability Test

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	I_F=20mA Ta=Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	Ta=+65℃±5℃ RH=90%-95% Test time=240hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High Ta=+85℃±5℃ Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-35℃±5℃ Test time=1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-35℃ ~ +25℃ ~ +85℃ ~ +25℃ 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	-35℃±5℃ ~+85℃±5℃ 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS-C-7021 :A-1	Preheating： 140℃-160℃,within 2 minutes. Operation heating： 260℃(Max.), within 10seconds. (Max.)	0/20

● Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V_F (V)	I_F=20mA	Over U^1x1.2
Reverse current	I_R (uA)	V_R=5V	Over U^1x2
Luminous intensity	Iv (mcd)	I_F=20mA	Below S^1X0.5

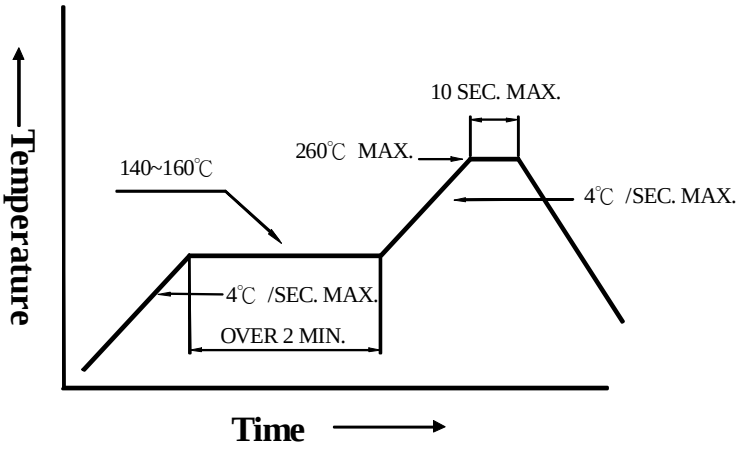
Note: 1. U means the upper limit of specified characteristics. S means initial value.

2. After each test, remove test pieces, wait for 2 hours and test pieces have returned to ambient temperature, then take next measurement.

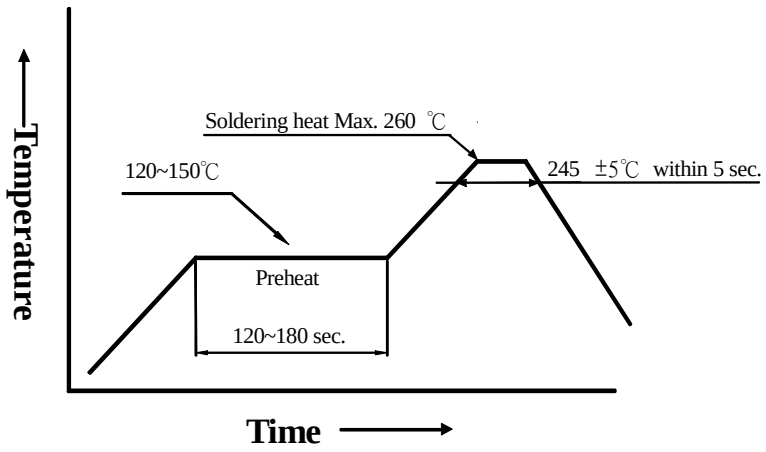
● Soldering :

1. Manual Soldering
   The temperature of the iron tip should not be higher than 300°C(572°F) and Soldering time to be within 3 seconds per solder-pad.

2. Reflow Soldering
   Preheating : 140°C~160°C±5°C,within 2 minutes.
   Operation heating : 260°C(Max.) within 10 seconds.(Max)
   Gradual Cooling (Avoid quenching).



3. DIP soldering (Wave Soldering) :
   Preheating : 120℃~150℃,within 120~180 sec.
   Operation heating : 245℃±5℃ within 5 sec.260℃ (Max)
   Gradual Cooling (Avoid quenching).



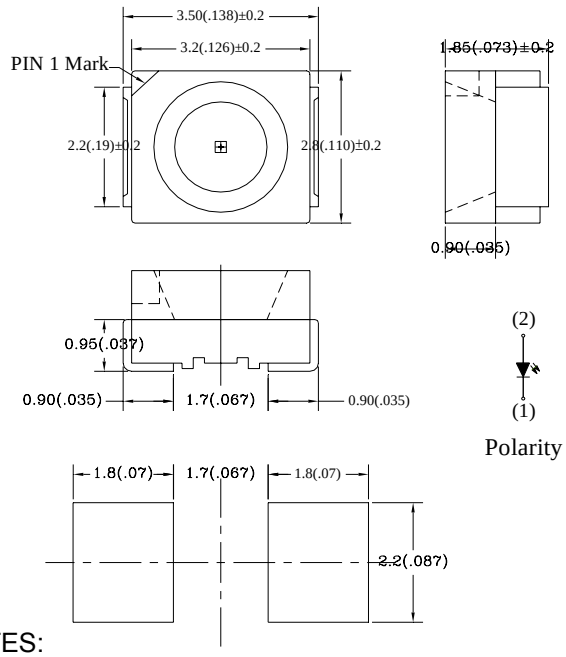
● Features:

1. Emitted Color: Super Blue
2. Lens Appearance: Water Clear.
3. 3.5x2.8x1.9mm standard package.
4. Suitable for all SMT assembly methods.
5. Compatible with infrared and vapor phase reflow solder process.
6. Compatible with automatic placement equipment.
7. This product doesn't contain restriction Substance, comply ROHS standard.

● Applications:

1. Automotive lighting.
2. Backlighting: LCDs, Key pads advertising.
3. Status indicators: Consumer & industrial electronics.
4. General use.

●Package Dimensions:



NOTES:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.10mm (0.004") unless otherwise specified.
3. Specifications are subject to change without notice.

● Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	120	mW
Forward Current	I_F	30	mA
Peak Forward Current*1	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	Topr	-40℃~80℃	-
Storage Temperature	Tstg	-40℃~100℃	-
Soldering Temperature	Tsol	See Page 6	-

*1 Condition for I_{FP} is pulse of 1/10 duty and 3 msec width.

● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf	I_F=20mA	-	3.2	3.6	V
Luminous Intensity	Iv	I_F=20mA	63	120	210	mcd
Peak Wavelength	I_R	V_R=5V	-	-	10	μA
Dominant Wavelength	λp	I_F=20mA	-	470	-	Nm
Spectral Line Half-width	λd	I_F=20mA	465	-	470	Nm
Reverse Current	Δλ	I_F=20mA	-	30	-	Nm
Viewing Angle	$2\theta_{1/2}$	I_F=20mA	-	120	-	Deg

● Typical Electro-Optical Characteristics Curves

Fig.1 Relative intensity vs. wavelength

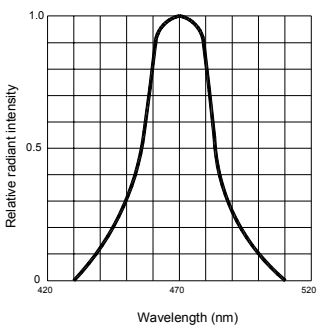


Fig.2 Forward current derating curve vs. ambient temperature

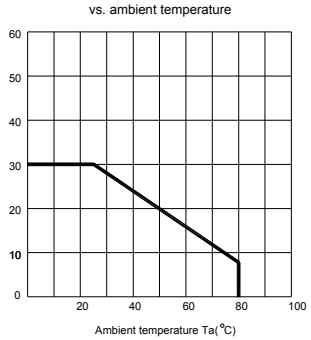


Fig.3 Forward current vs. forward voltage

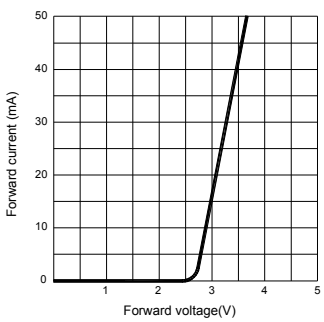


Fig.4 Relative luminous intensity vs. ambient temperature

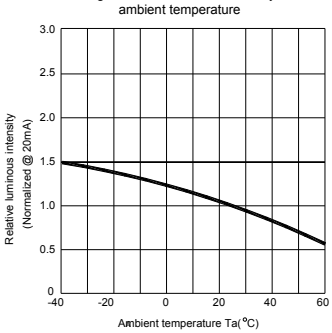


Fig.5 Relative luminous intensity vs. forward current

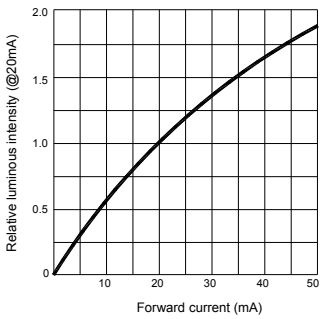
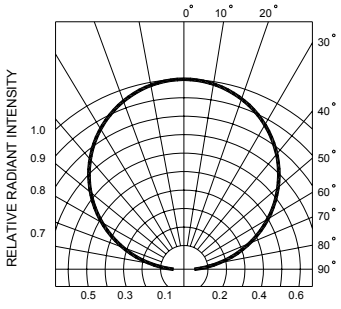
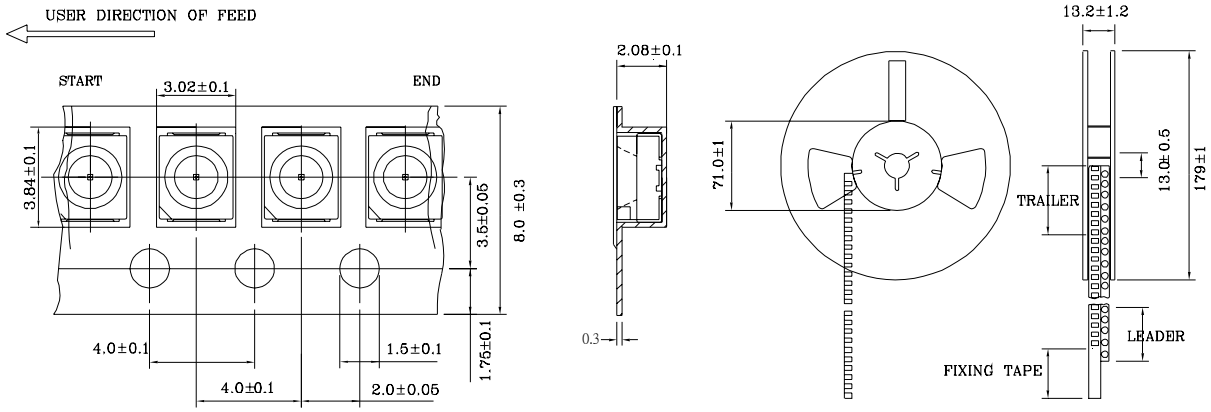


Fig.6 Radiation diagram

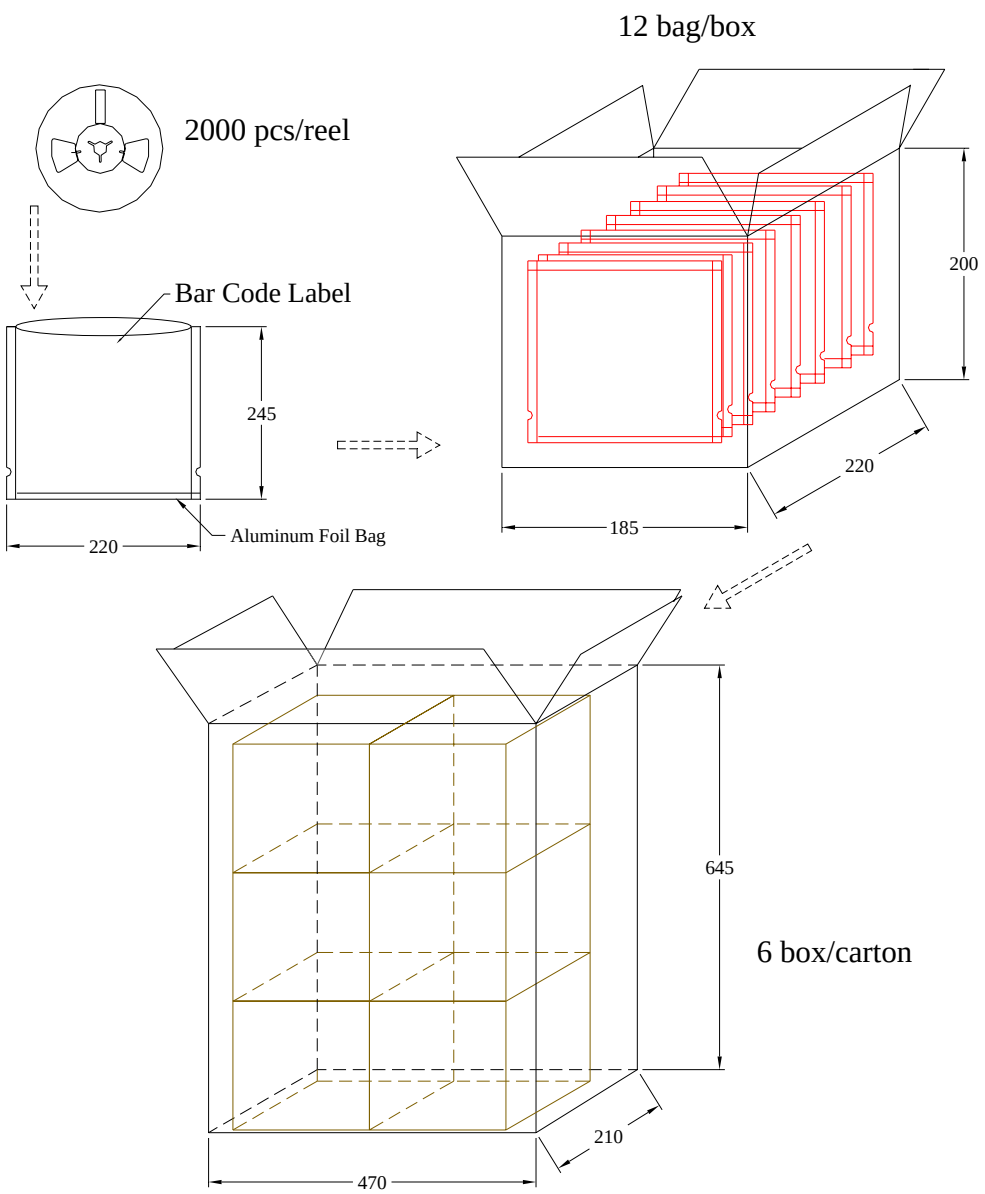


● Tapping and packaging specifications(Units: mm)



NOTE:2000 PCS PER REEL

● Package Method:(unit: mm)Vacuum



● Intensity Bin Limits (At 20 mA)

BIN CODE	Min. (mcd)	Max. (mcd)
P	63	94
Q	94	140
R	140	210

Tolerance for each Bin limit is ±10%.

● Color Bin Limits (At 20 mA)

BIN CODE	Min. (nm)	Max. (nm)
4	465	470

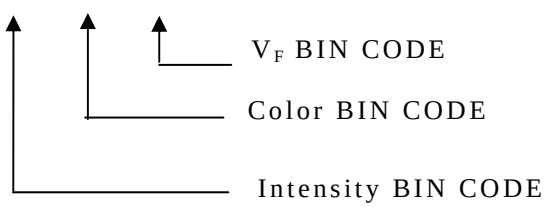
Tolerance for each Bin limit is ± 1 nm.

● Forward Voltage Bin Limits (At 20 mA)

BIN CODE	Min.(V)	Max.(V)
G	2.8	3.0
H	3.0	3.2
J	3.2	3.4
K	3.4	3.6

Tolerance for each Bin limit is ± 0.02V.

● BIN : X X X



● Reliability Test

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	I_F=20mA Ta=Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	Ta=+65℃±5℃ RH=90%-95% Test time=240hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High Ta=+85℃±5℃ Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-35℃±5℃ Test time=1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-35℃ ~ +25℃ ~ +85℃ ~ +25℃ 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	-35℃±5℃ ~+85℃±5℃ 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS-C-7021 :A-1	Preheating： 140℃-160℃,within 2 minutes. Operation heating： 260℃(Max.), within 10seconds. (Max.)	0/20

● Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V_F (V)	I_F=20mA	Over U^1x1.2
Reverse current	I_R (uA)	V_R=5V	Over U^1x2
Luminous intensity	Iv (mcd)	I_F=20mA	Below S^1X0.5

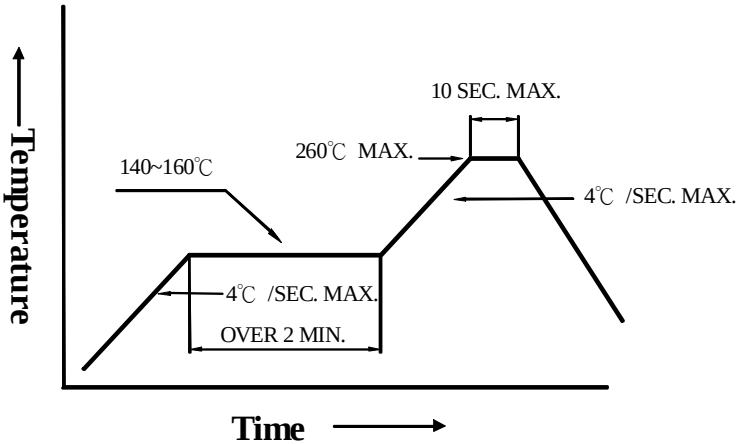
Note: 1. U means the upper limit of specified characteristics. S means initial value.

2. After each test, remove test pieces, wait for 2 hours and test pieces have returned to ambient temperature, then take next measurement.

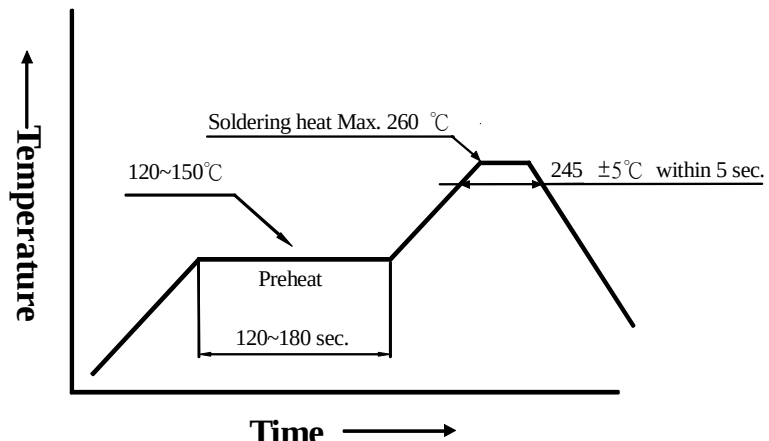
● Soldering :

1. Manual Soldering
   The temperature of the iron tip should not be higher than 300℃(572℉) and Soldering time to be within 3 seconds per solder-pad.

2. Reflow Soldering
   Preheating : 140℃~160℃±5℃,within 2 minutes.
   Operation heating : 260℃(Max.) within 10 seconds.(Max)
   Gradual Cooling (Avoid quenching).



3. DIP soldering (Wave Soldering) :
   Preheating : 120℃~150℃,within 120~180 sec.
   Operation heating : 245℃±5℃ within 5 sec.260℃ (Max)
   Gradual Cooling (Avoid quenching).



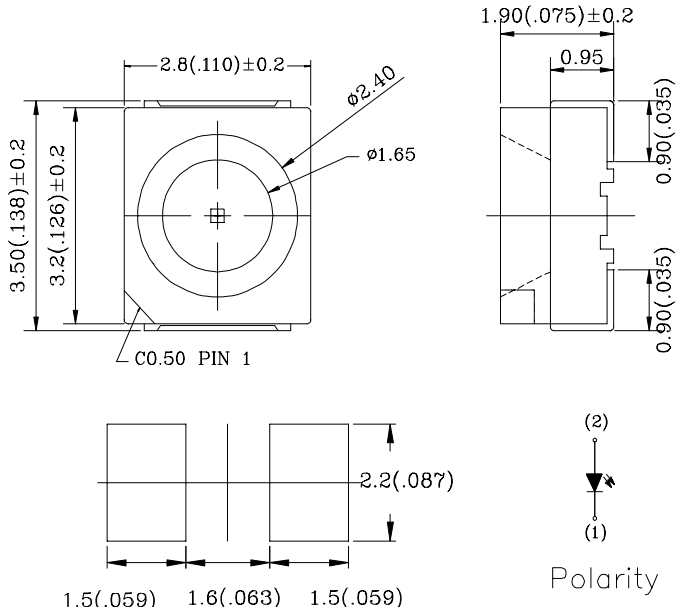
● Features:

1. Emitted Color: White.
2. Lens Appearance: Water Clear.
3. Mono-color type.
4. 2.8x3.5x1.9mm standard package.
5. Suitable for all SMT assembly methods.
6. Compatible with infrared and vapor phase reflow solder process.
7. Compatible with automatic placement equipment.
8. Non-YAG phosphor.
9. This product doesn't contain restriction Substance, comply ROHS standard.

● Applications:

1. Automotive: Dashboards, stop lamps , turn signals.
2. Backlighting: LCDs, Key pads advertising.
3. Status indicators: Consumer & industrial electronics.
4. General use.

●Package Dimensions:



NOTES:
1.All dimensions are in millimeters (inches).
2.Tolerance is ±0.10mm (0.004") unless otherwise specified.
3.Specifications are subject to change without notice.

● Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	105	mW
Forward Current	I_F	30	mA
Peak Forward Current*1	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	Topr	-40℃~100℃	-
Storage Temperature	Tstg	-40℃~100℃	-
Soldering Temperature	Tsol	See Page 7	-

*1 Condition for I_{FP} is pulse of 1/10 duty and 3 msec width.

● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf	I_F=20mA	-	3.3	3.5	V
Luminous Intensity	Iv	I_F=20mA	873	1200	-	mcd
Reverse Current	I_R	V_R=5V	-	-	100	μA
Chromaticity Coordinates	x	I_F=20mA	0.26	0.28	0.30	-
	y		0.24	0.27	0.30	
Viewing Angle	$2\theta_{1/2}$	I_F=20mA	-	120	-	deg

● Typical Electro-Optical Characteristics Curves

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

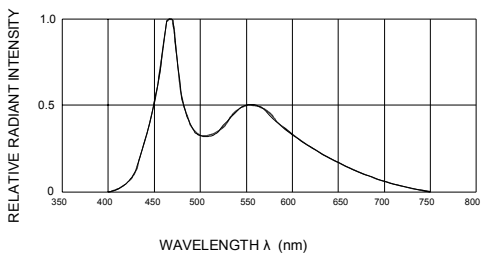


Fig.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

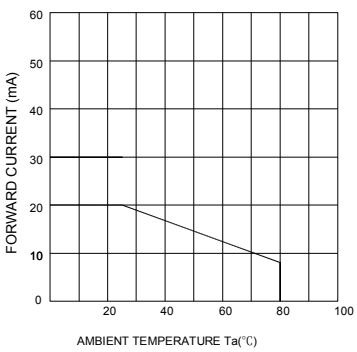


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

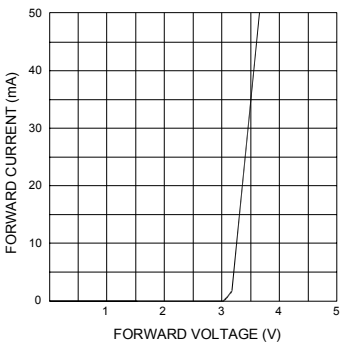


Fig.4 RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

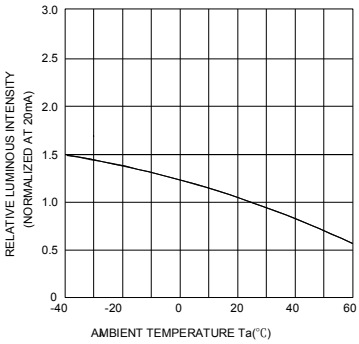


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

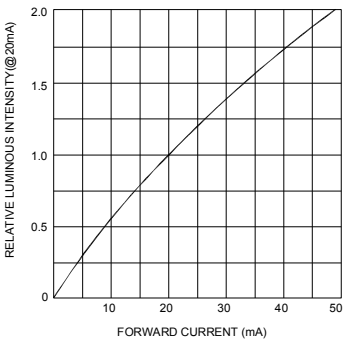


Fig.6 RADIATION DIAGRAM

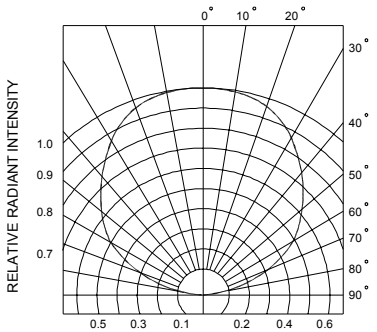


Fig.7 FORWARD CURRENT VS. CHROMATICITY COORDINATE

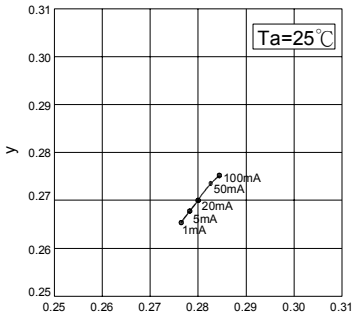
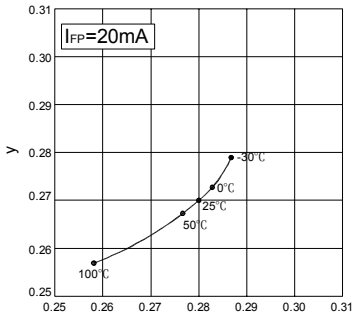
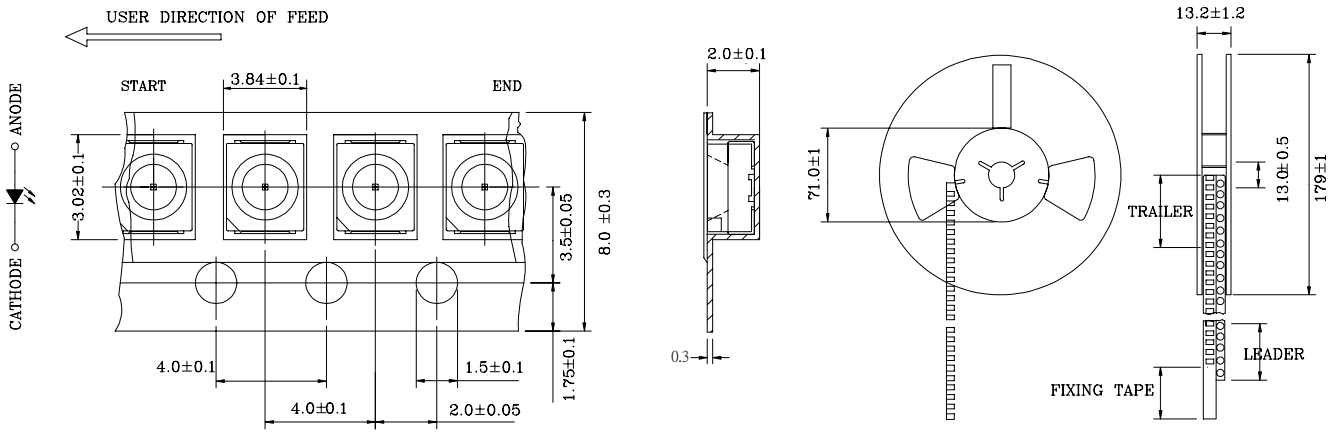


Fig.8 AMBIENT TEMPERATURE VS. CHROMATICITY COORDINATE

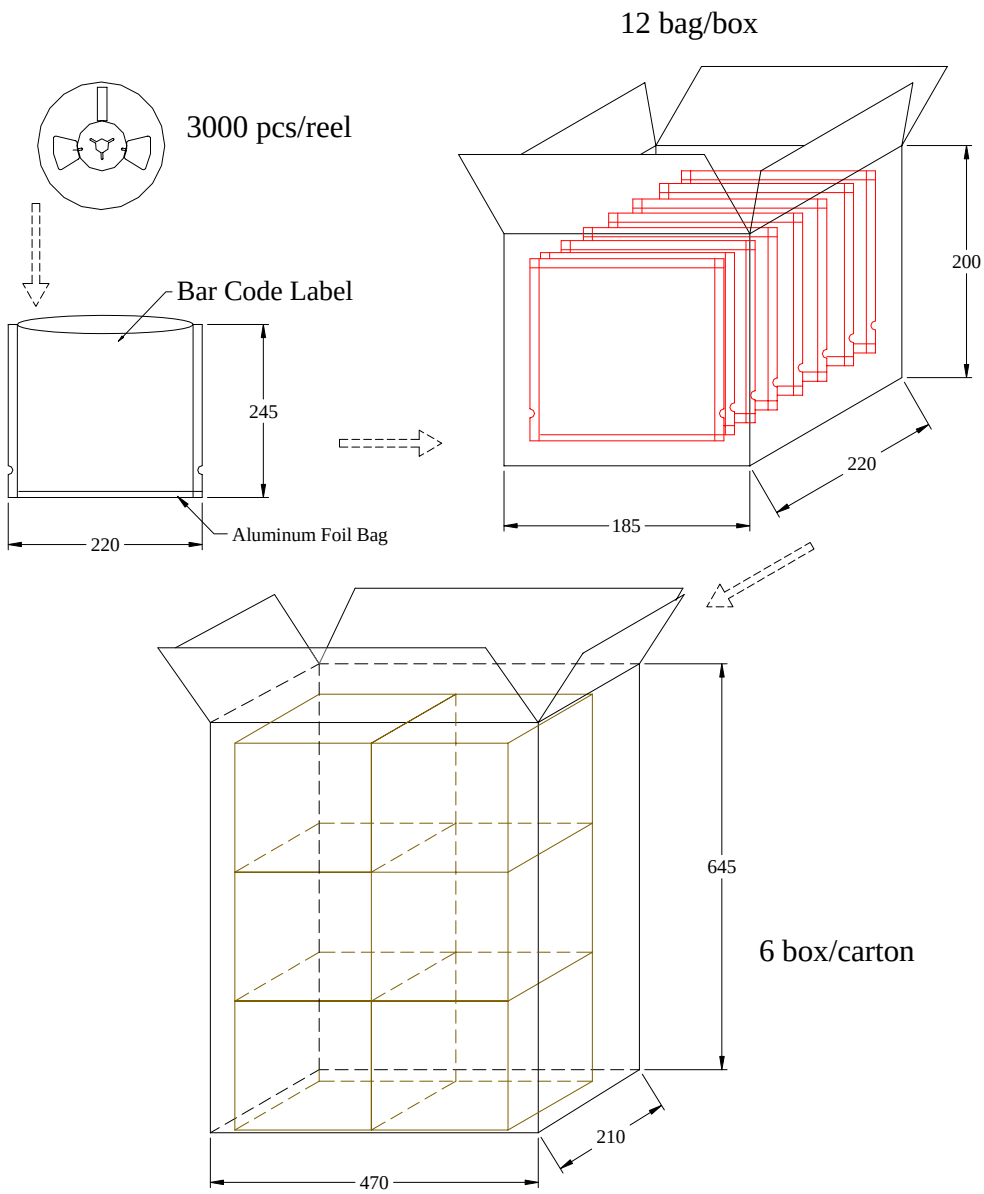


● Tapping and packaging specifications(Units: mm)



NOTE:3000 PCS PER REEL

●Package Method:(unit:mm)



● Intensity Bin Limits (At 20 mA)

BIN CODE	Min. (mcd)	Max. (mcd)
VB	873	1070
WA	1070	1305
WB	1305	1600
XA	1600	1958

Tolerance for each Bin limit is ±10%.

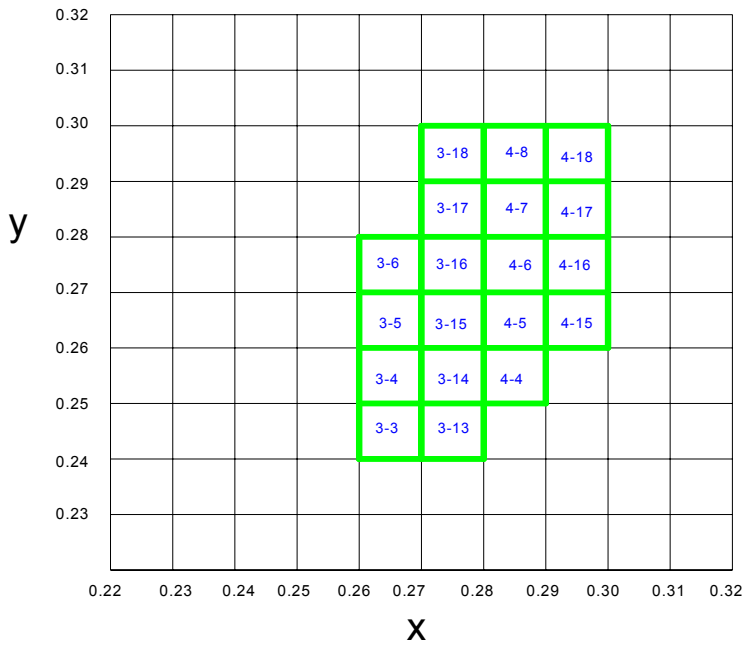
● Forward Voltage Bin Limits (At 20 mA)

BIN CODE	Min.(V)	Max.(V)
G2	2.9	3.0
H1	3.0	3.1
H2	3.1	3.2
J1	3.2	3.3
J2	3.3	3.4
K1	3.4	3.5

Tolerance for each Bin limit is ± 0.02V.

● Color Bin Limits (At 20 mA)

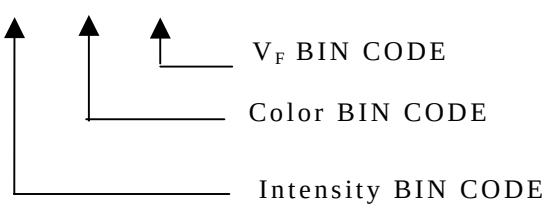
C.I.E CHROMATICITY DIAGRAM



BIN	Chromaticity Coordinates				
3-3	x	0.270	0.260	0.260	0.270
	y	0.240	0.240	0.250	0.250
3-4	x	0.270	0.260	0.260	0.270
	y	0.250	0.250	0.260	0.260
3-5	x	0.270	0.260	0.260	0.270
	y	0.260	0.260	0.270	0.270
3-6	x	0.270	0.260	0.260	0.270
	y	0.270	0.270	0.280	0.280
3-13	x	0.280	0.270	0.260	0.280
	y	0.240	0.240	0.250	0.250
3-14	x	0.280	0.270	0.260	0.280
	y	0.250	0.250	0.260	0.260
3-15	x	0.280	0.270	0.270	0.280
	y	0.260	0.260	0.270	0.270
3-16	x	0.280	0.270	0.270	0.280
	y	0.270	0.270	0.280	0.280
3-17	x	0.280	0.270	0.270	0.280
	y	0.280	0.280	0.290	0.290
3-18	x	0.28	0.270	0.270	0.280
	y	0.290	0.290	0.300	0.300
4-4	x	0.290	0.280	0.280	0.290
	y	0.250	0.250	0.260	0.260
4-5	x	0.290	0.280	0.280	0.290
	y	0.260	0.260	0.270	0.270
4-6	x	0.290	0.280	0.280	0.290
	y	0.270	0.270	0.280	0.280
4-7	x	0.290	0.280	0.280	0.290
	y	0.280	0.280	0.290	0.290
4-8	X	0.290	0.280	0.280	0.290
	y	0.290	0.290	0.300	0.300
4-15	x	0.300	0.290	0.290	0.300
	y	0.260	0.260	0.270	0.270
4-16	x	0.300	0.290	0.290	0.300
	y	0.270	0.270	0.280	0.280
4-17	x	0.300	0.290	0.290	0.300
	y	0.280	0.280	0.290	0.290
4-18	x	0.300	0.290	0.290	0.300
	y	0.290	0.290	0.300	0.300

Tolerance for each Bin limit is ± 0.005.

● BIN : x x x



● Reliability Test

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	I_F=20mA Ta=Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	Ta=+65℃±5℃ RH=90%-95% Test time=240hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High Ta=+85℃±5℃ Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-35℃±5℃ Test time=1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-35℃ ~ +25℃ ~ +85℃ ~ +25℃ 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	-35℃±5℃ ~+85℃±5℃ 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS-C-7021 :A-1	Preheating： 140℃-160℃,within 2 minutes. Operation heating： 235℃(Max.), within 10seconds. (Max.)	0/20

● Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgement criteria for failure
Forward voltage	V_F (V)	I_F=20mA	Over U^1x1.2
Reverse current	I_R(uA)	V_R=5V	Over U^1x2
Luminous intensity	Iv (mcd)	I_F=20mA	Below S^1X0.5

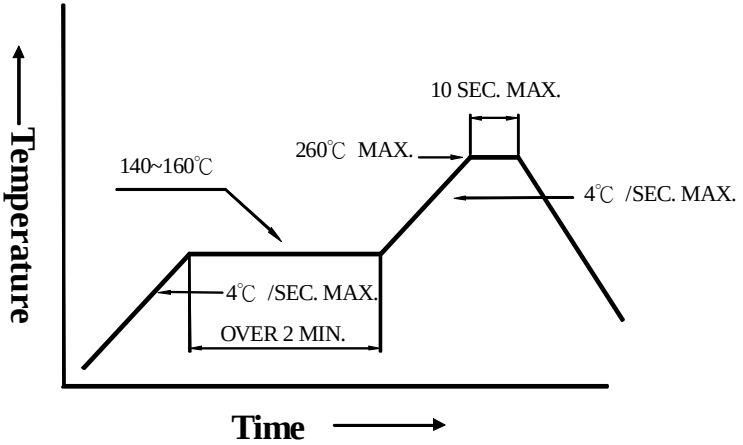
Note: 1. U means the upper limit of specified characteristics. S means initial value.

2. After each test, remove test pieces, wait for 2 hours and test pieces have returned to ambient temperature, then take next measurement.

Soldering :

1. Manual Soldering
   The temperature of the iron tip should not be higher than 300℃(572℉) and Soldering time to be within 3 seconds per solder-pad.

2. Reflow Soldering
   Preheating : 140℃~160℃±5℃,within 2 minutes.
   Operation heating : 260℃(Max.) within 10 seconds.(Max)
   Gradual Cooling (Avoid quenching).



3. DIP soldering (Wave Soldering) :
   Preheating : 120℃~150℃,within 120~180 sec.
   Operation heating : 245℃±5℃ within 5 sec.260℃ (Max)
   Gradual Cooling (Avoid quenching).