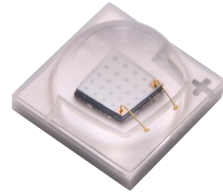


Product Brief

High Power Ceramic 3535 3W Blue Series



Description

- This surface-mount LED size is standard package: 3.45x3.45x2.26mm.
- The SP35C series is designed for high flux output applications with high current operation capability.

Features And Benefits

- Designed for high current operation
- Low thermal resistance
- Superior corrosion robustness
- Superior high efficacy at rated current enables outstanding lm/W at system level
- Viewing angle at 50%I_v : 120°
- Lumen Maintenance: Test results according to IESNA LM-80 available
- RoHS certification

Applications)

- Outdoor lighting
- Landscape lighting
- Exhibition hall lighting
- Plant lighting

Table 1. Product overview

Parameter	Dominant Wavelength(nm)	Luminous Flux Rank (lm)
CL-SFV3535DNB-B-02	Rank	IF=700mA
	430-485	16-120

Performance Characteristics

Table 2. Product For Dominant Wavelength 430-485nm Electro Optical Characteristics
, IF = 700mA ,Ta = 25°C, RH60%

Parameter	Dominant Wavelength(nm)	Voltage Rank(V)	Luminous Flux Rank (lm)
Model No.	Rank	IF=700mA	IF=700mA
CL-SFV3535DNB-B-02(430)	430-435	3.0-3.4	16-24
CL-SFV3535DNB-B-02(450)	450-455	2.8-3.2	36-42
CL-SFV3535DNB-B-02(450)	450-455	2.8-3.2	44-50
CL-SFV3535DNB-B-02(455)	455-460	3.0-3.4	50-60
CL-SFV3535DNB-B-02(460)	460-465	3.0-3.4	50-60
CL-SFV3535DNB-B-02(465)	465-470	2.8-3.2	70-85
CL-SFV3535DNB-B-02(465)	465-470	2.8-3.2	70-85
CL-SFV3535DNB-B-02(470)	470-475	2.8-3.2	75-90
CL-SFV3535DNB-B-02(475)	475-480	2.8-3.4	90-110
CL-SFV3535DNB-B-02(480)	480-485	2.8-3.4	95-120

- Tolerance of measurements of the Luminous Flux is $\pm 7\%$.
- Tolerance of measurements of the Dominant Wavelength $\pm 2\text{nm}$.
- Voltage measurement tolerance is $\pm 0.1\text{V}$.
- The Radiometric Power was measured at the peak of the spatial pattern which may not be aligned with the mechanical axis of the LED package.
- The lumen table is only for reference.

Table 5. Electro and Thermal Characteristics , IF = 700mA , Ta = 25°C, RH60%

Item	Symbol	Min	Typ	Max	Unit	Condition
Forward Voltage	VF	2.8	-	3.4	V	IF=700mA
Reverse Current	IR	-	-	10	μA	VR=5V
View Angle	2θ1/2	-	120	-	°	IF=700mA
Thermal Resistance	(R _{th j-sp})	-	10.0	-	°C/W	IF=700mA
Electrostatic Discharge	ESD	-	2000	-	V	-

- Tolerance : VF :±0.1V.
- 2θ1/2 is the off-axis where the luminous intensity is 1/2 of the peak intensity.
- Thermal resistance : RthJS (Junction / solder) .

Table 6. Absolute Maximum Ratings , Ta = 25°C, RH60%

Item	Symbol	Absolute Maximum Ratings	Unit
Forward Current	IF	1200	mA
Pulse Forward Current	IFP	1500	mA
Power Dissipation	PD	4.08	W
Reverse Voltage	VR	5	V
Operating Temperature	T _{opr}	-40 ~ +100	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Junction Temperature	T _j	125	°C

- IFP condition with Pulse: Width≤100μs Duty cycle≤1/10.
- LED's properties might be different from suggested values like above and below tables if operation condition will be exceeded our parameter range. Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.



CL-SFV3535DNB-B-02

Product Bin

Table 7. Luminous Flux Ranks, Ta = 25°C, RH60%, IF=700mA

Luminous Flux (lm)			Luminous Flux (lm)		
Code	Min	Max	Code	Min	Max
A16	16	18	A55	55	60
A18	18	20	A60	60	65
A20	20	22	A65	65	70
A22	22	24	A70	70	75
A36	36	38	A75	75	80
A38	38	40	A80	80	85
A40	40	42	A85	85	90
A42	42	44	A90	90	95
A44	44	46	A95	95	100
A46	46	48	WA0	100	110
A48	48	50	WA1	110	120
A50	50	55	WA2	120	130

Table 8. Forward Voltage Ranks , Ta = 25°C, RH60%, IF=700mA

Forward Voltage Ranks(V)		
Code	Min	Max
BB8	2.8	3.0
BC0	3.0	3.2
BC2	3.2	3.4

Table 9. Dominant Wavelength Ranks , Ta = 25°C, RH60%, IF=700mA

Dominant Wavelength Ranks(nm)			Dominant Wavelength Ranks(nm)		
Code	Min	Max	Code	Min	Max
43A	430.0	432.5	45D	457.5	460.0
43B	432.5	435.0	46A	460.0	462.5
43C	435.0	437.5	46B	462.5	465.0
43D	437.5	440.0	46C	465.0	467.5
44A	440.0	442.5	46D	467.5	470.0
44B	442.5	445.0	47A	470.0	472.5
44C	445.0	447.5	47B	472.5	475
44D	447.5	450.0	47C	475	477.5
45A	450.0	452.5	47D	477.5	480
45B	452.5	455.0	48A	480	482.5
45C	455.0	457.5	48B	482.5	485

Typical Characteristics Curve

Fig 1. Relative Spectral Luminous Flux Distribution for Dominant Wavelength 440-480nm, IF=700mA, Ta = 25°C, RH60%

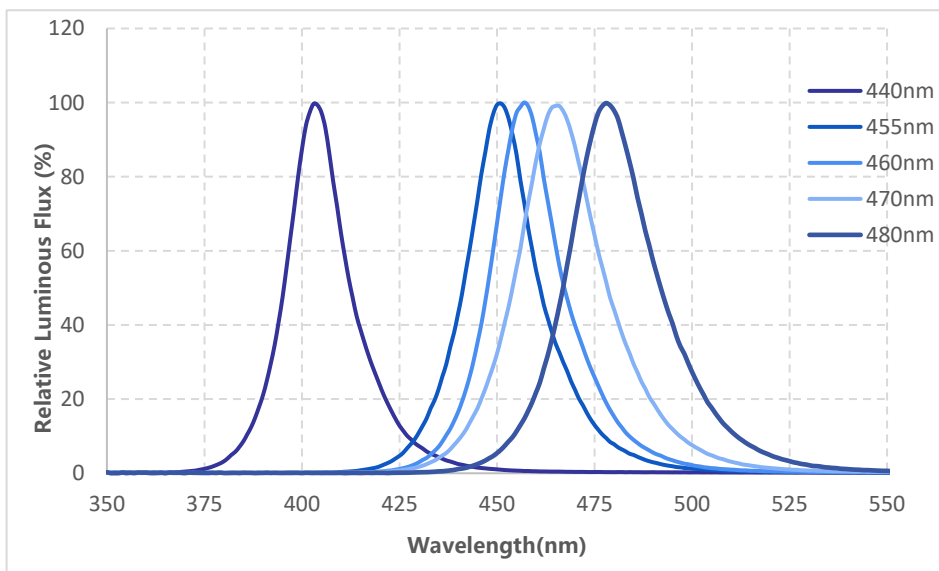


Fig 2. Viewing Angle Distribution , IF=700mA, Ta = 25°C, RH60%

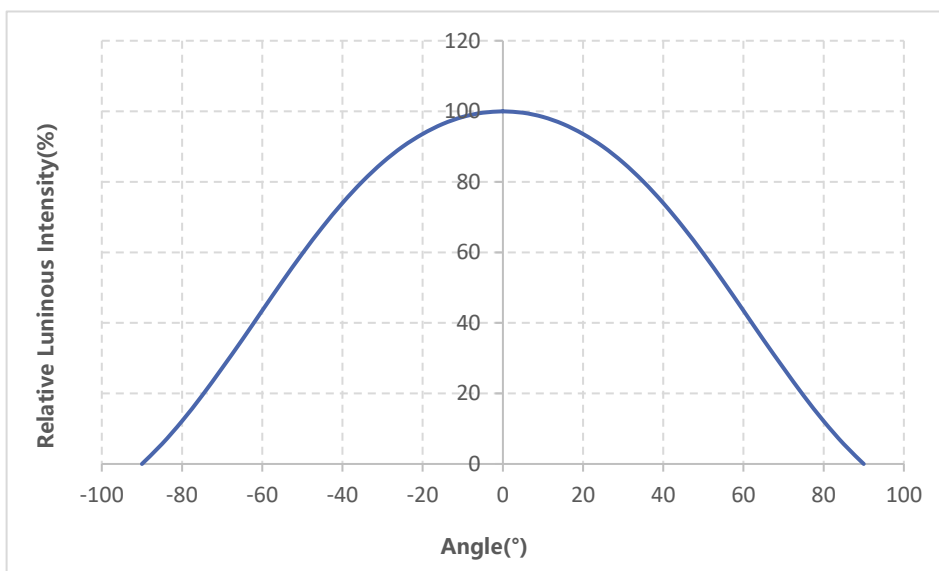


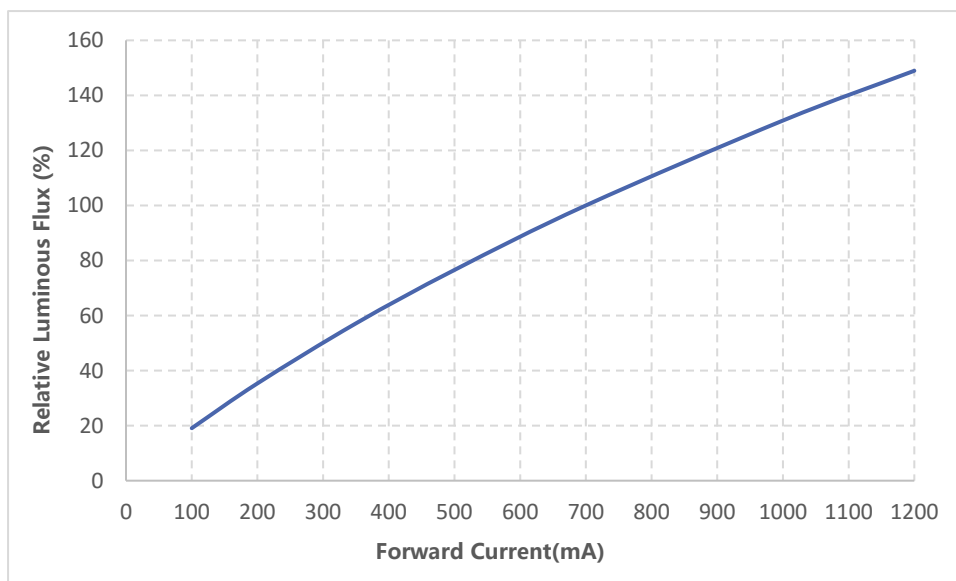
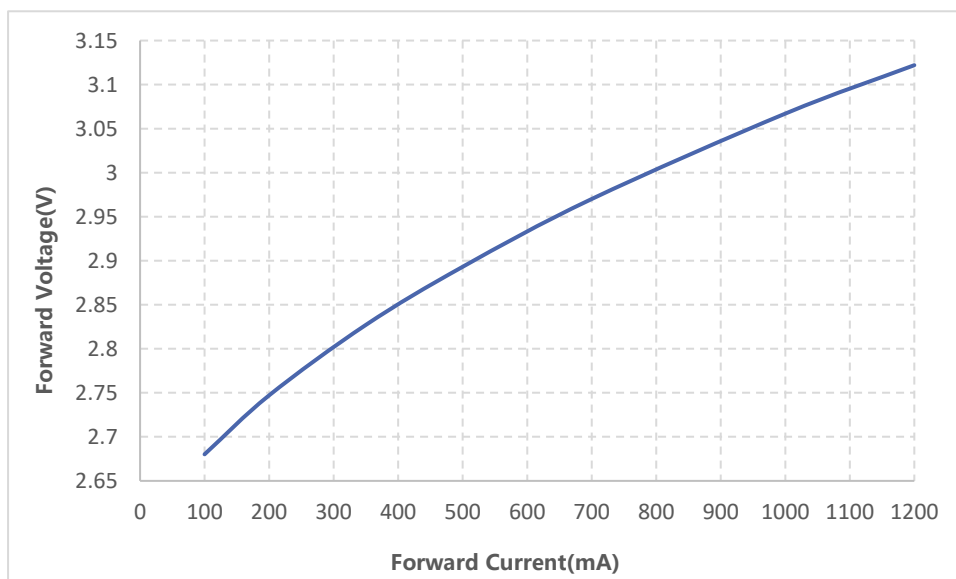
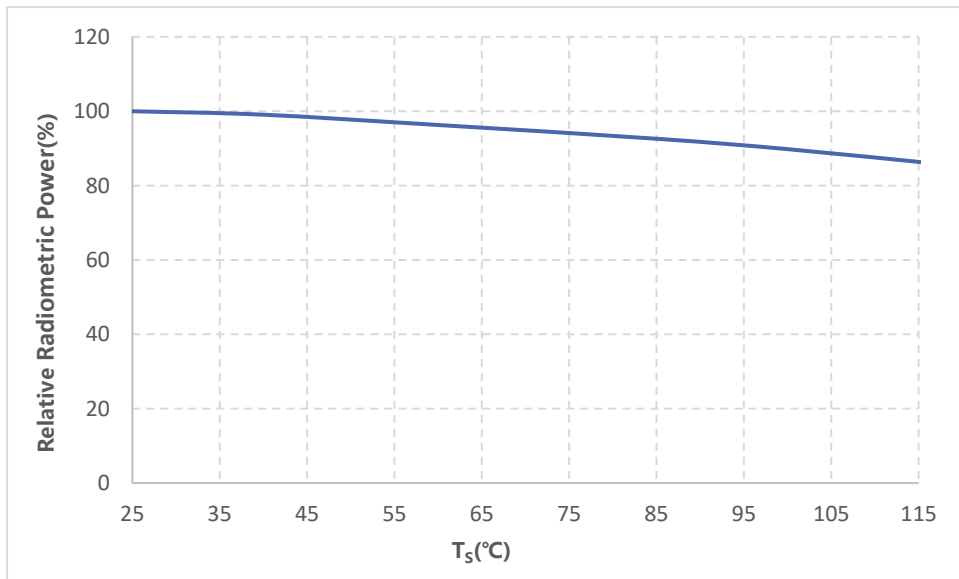
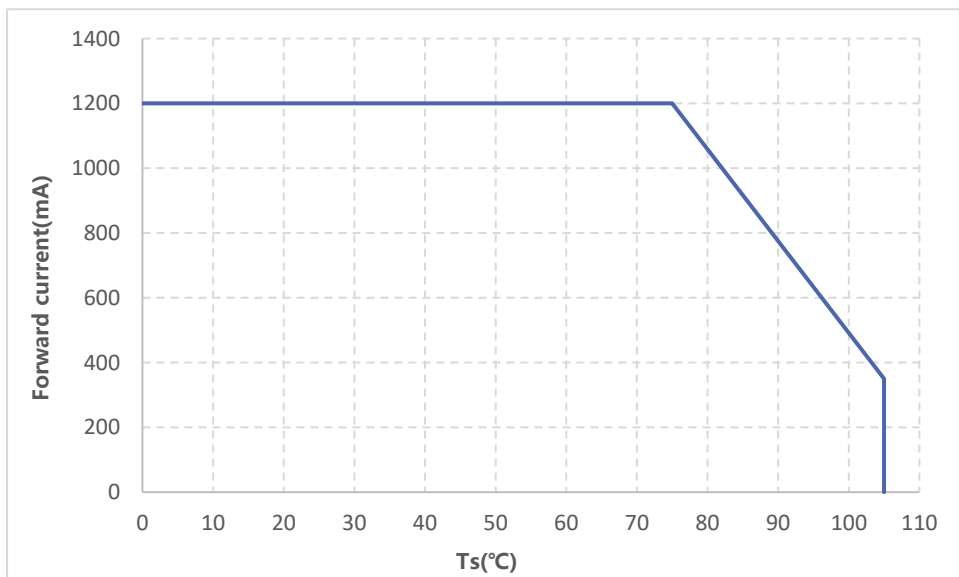
Fig 3. Relative Luminous Flux VS Forward Current, Ta = 25°C, RH60%**Fig 4. Forward Voltage VS Forward Current Ta = 25°C, RH60%**

Fig 5. Relative Radiometric Power VS Solder Temperature , IF=700mA**Fig 6. Forward Current VS Solder Temperature**

Outline Vs. Recommended Solder Pad

Fig 7. Mechanical Dimensions

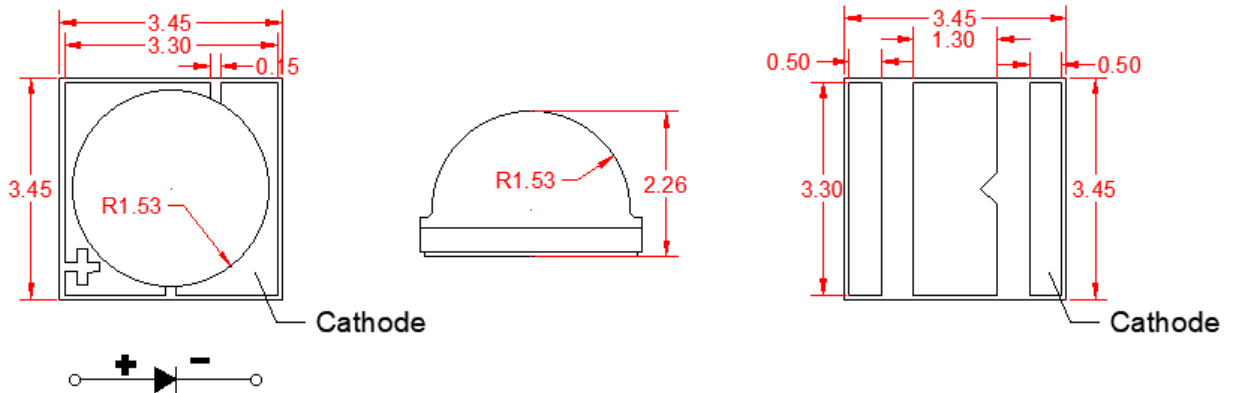
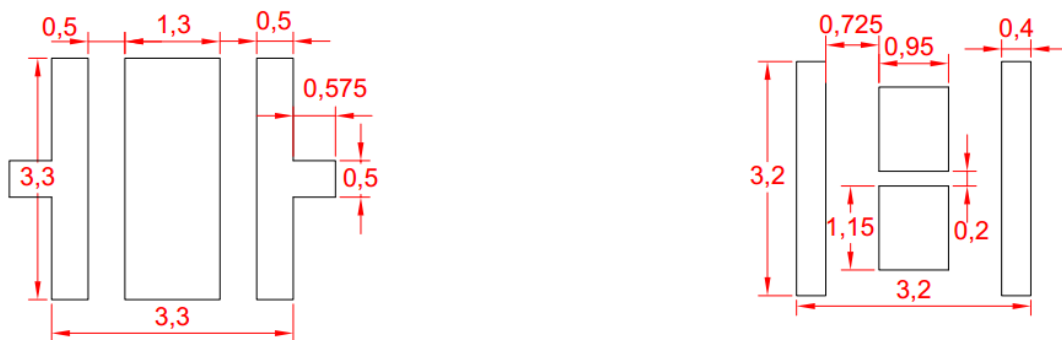


Fig 8. Recommended Solder Pad



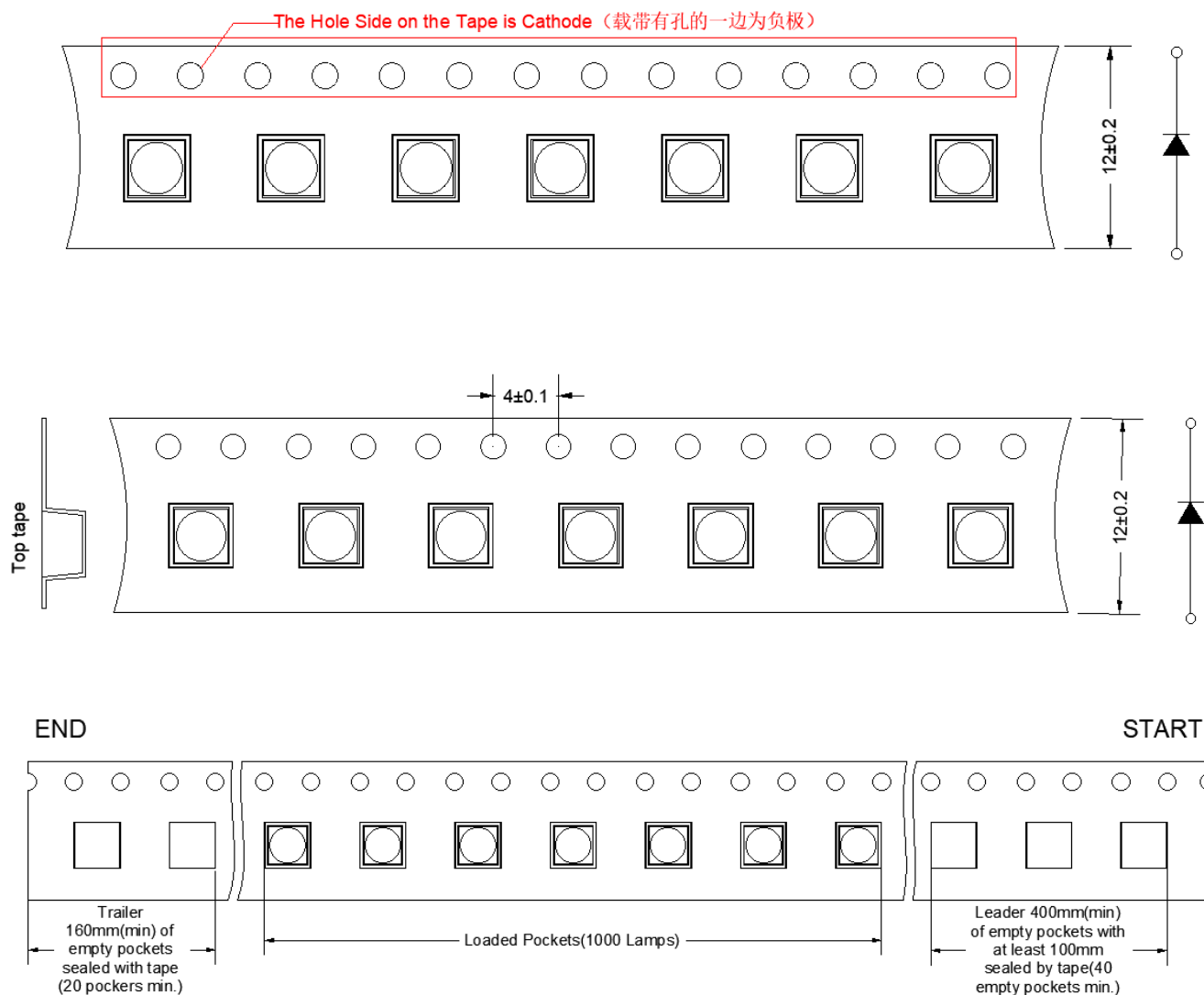
Recommended PCB Solder Pad

Recommended Stencil Pattern Stencil:0.12mm

- All dimensions are in millimeters.
- Scale: none.
- Undefined tolerance is $\pm 0.1\text{mm}$.

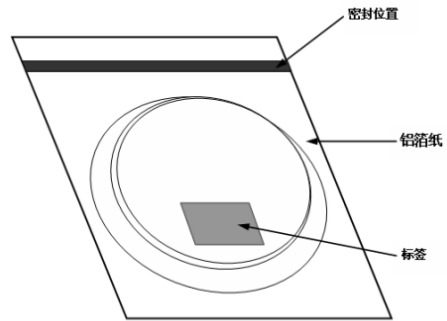
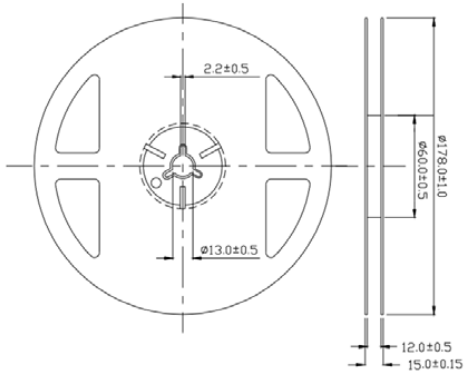
Packaging Information

Fig 9. Reel Packaging 1000pcs/Reel

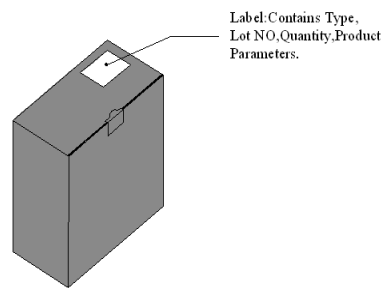
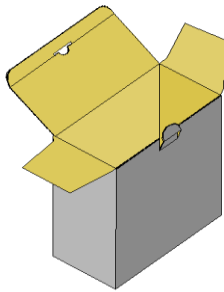


- Quantity : Max 1000pcs/Reel.
- Cumulative Tolerance : Cumulative Tolerance/10 pitches to be $\pm 0.25\text{mm}$.
- Adhesion Strength of Cover Tape Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier tape at the angle of 10° to the carrier tape.
- Package : P/N, Manufacturing data Code No. and Quantity to be indicated on a damp proof Package.

Reels

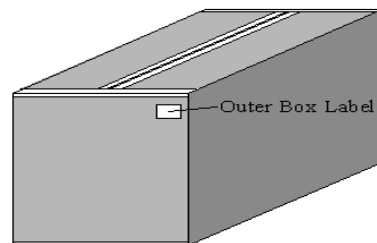
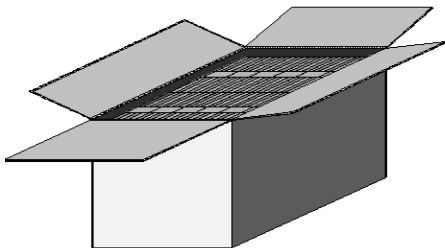


Inner Box (内箱)



•Capacity 5 or 10 reels per box

Outer Box



Reflow Soldering

Recommended Mid-Temperature Solder Paste

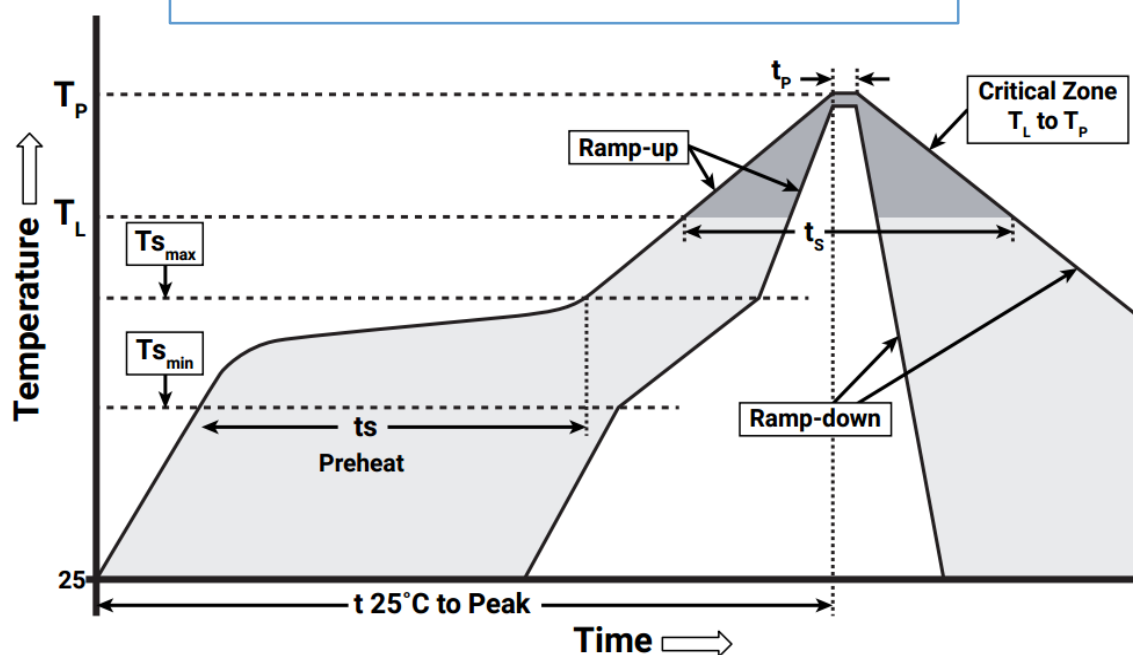


Table 11. Reflow profile characteristics

Profile Feature	Lead-Free Solder
Average Ramp-Up Rate($T_{s_{max}}$ to T_P)	1.2°C/second
Preheat:Temperature Min($T_{s_{min}}$)	120°C
Preheat:Temperature Max($T_{s_{max}}$)	170°C
Preheat:Time Max($t_{s_{min}}$ to $t_{s_{max}}$)	65-150 seconds
Time Maintained Above:Temperature(T_L)	217°C
Time Maintained Above:Time(t_l)	45-90 seconds
Peak/Classification Temperature(T_P)	235-245°C
Time Within 5°C of Actual Peak Temperature(t_p)	20-40 seconds
Ramp-Down Rate	1-6°C/ seconds
Time 25°C to Peak Temperature	4 minutes max