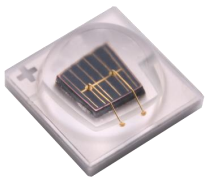
CL-SFV3535IR-850-C-02

Product Brief

High Power Ceramic 3535 3W IR



Description

•This surface-mount LED size is standard package: 3.45x3.45x2.26mm.
•The SP35I 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:Testresults according to IESNA LM-80 available
- RoHS certification

Applications

- Visual inspection
- Medical Equipment
- Automotive night vision
- Security monitoring
- Identification
- Surveillance Systems
- Scanning

Table 1. Product overview)

Parameter	Peak Wavelength(nm)	Radiometric Power (mW)
CL-SFV3535IR-850-C-02	Rank	IF=700mA
	845-855	850-1000

Performance Characteristics

Table 2. Product For Peak Wavelength 850nm Electro Optical Characteristics , IF = 700mA ,Ta = 25℃, RH60%

Parameter	Peak Wavelength (nm)	Voltage Rank(V)	Main Radiometric Power Rank (mW)
Model No.	Rank	F=700mA	IF=700mA
CL-SFV3535IR-850-C-02	845-855	2.8-3.4	850-1000

- Tolerance of measurements of the Radiometric Power is ±7%.
- Tolerance of measurements of the Peak Wavelength is ±2nm.
- Voltage measurement tolerance is ±0.1V.
- 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℃, 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	($R_{th\ j\text{-}sp}$)	-	9.0	-	℃/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℃, RH60%

Item	Symbol	Absolute Maximum Ratings	Unit
Forward Current	IF	1000	mA
Pulse Forward Current	IFP	1200	mA
Power Dissipation	PD	3.4	W
Reverse Voltage	VR	5	V
Operating Temperature	T_{opr}	-40 ~ +100	℃
Storage Temperature	T_{stg}	-40 ~ +100	℃
Junction Temperature	T_j	115	℃

• 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.

Product Bin

Table 7. Radiometric Power Ranks, Ta = 25℃, RH60%, IF=700mA

Radiometric Power (mW)		
Code	Min	Max
PH5	850	900
PI0	900	950
PI5	950	1000

Table 8. Forward Voltage Ranks , Ta = 25℃, 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. Peak Wavelength Ranks , Ta = 25℃, RH60%, IF=700mA

Peak Wavelength Ranks(nm)		
Code	Min	Max
84F	845	850
85E	850	855

Typical Characteristics Curve

Fig 1. Relative Spectral Radiometric Power Distaibution for Peak Wavelength 850nm, IF=700mA,Ta = 25℃, RH60%

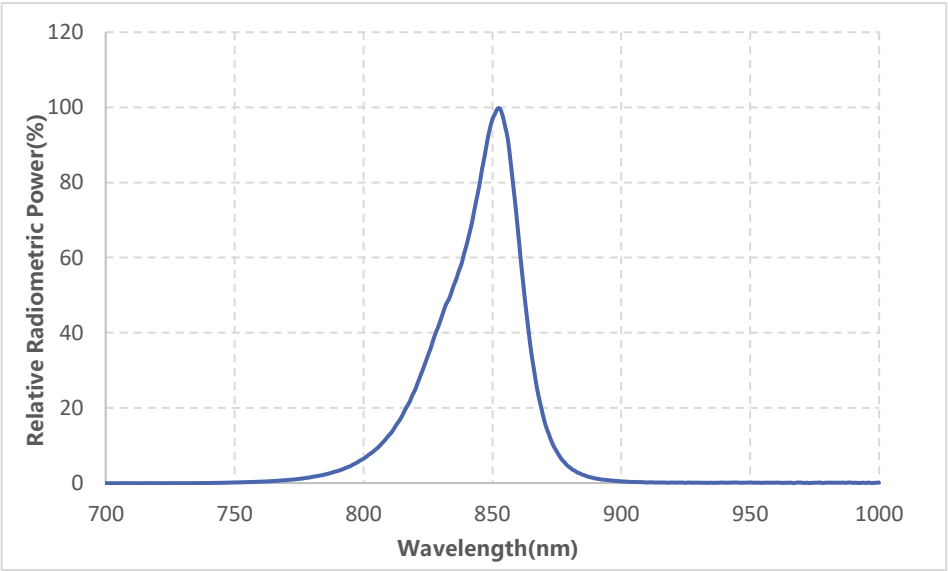


Fig 2. Viewing Angle Distribution , IF=700mA,Ta = 25℃, RH60%

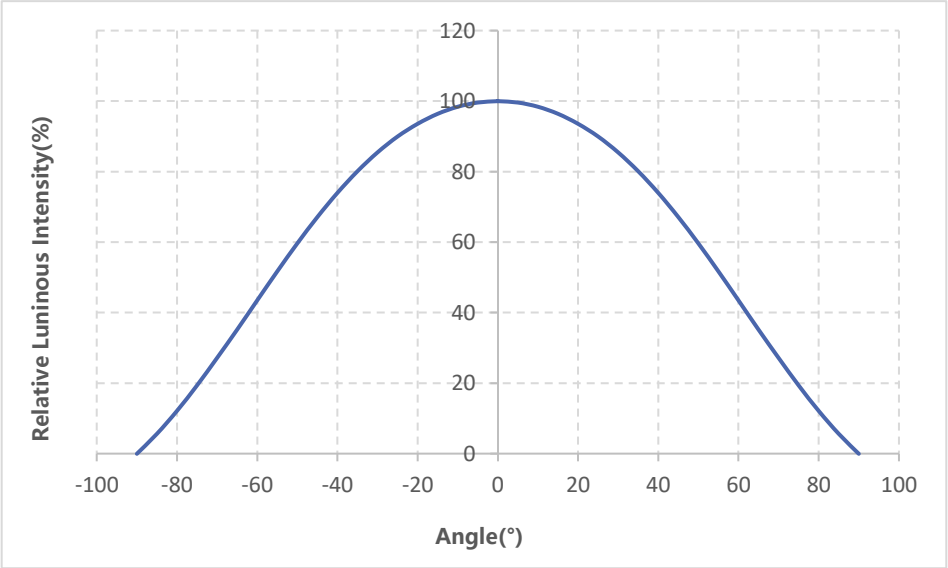


Fig 3. Relative Radiometric Power VS Forward Current,Ta = 25℃, RH60%

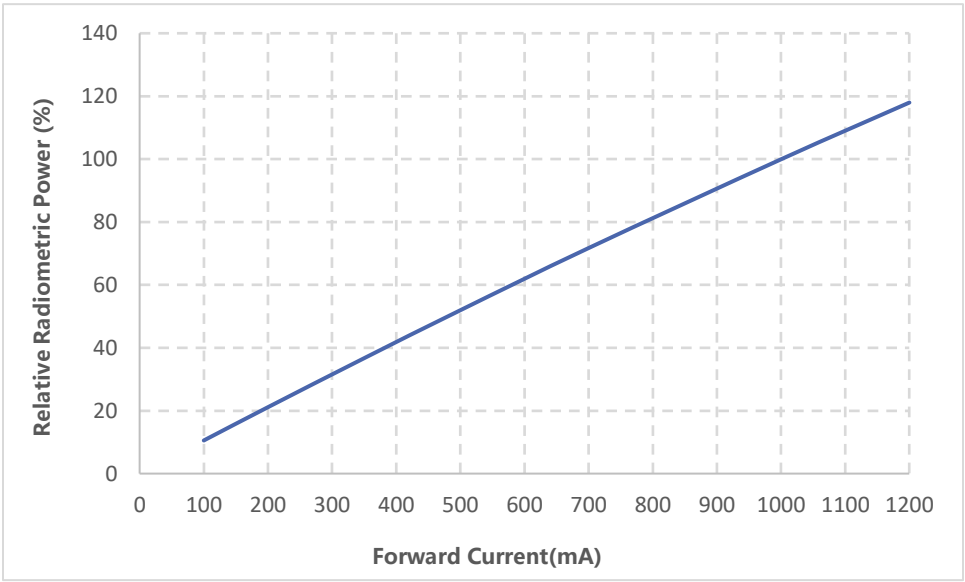


Fig 4. Forward Voltage VS. Forward Current Ta = 25℃, RH60%

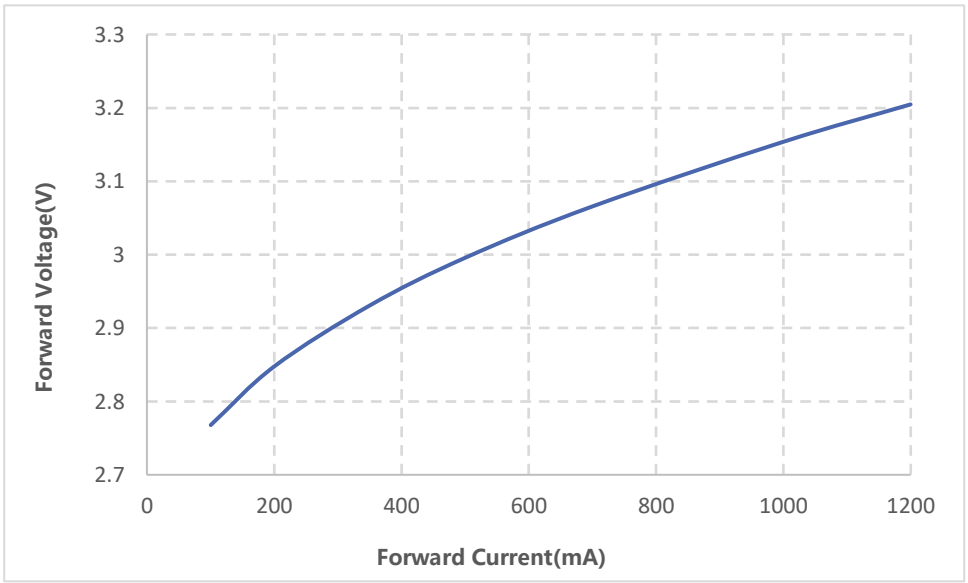


Fig 5. Relative Radiometric Power VS. Solder Temperature , IF=700mA

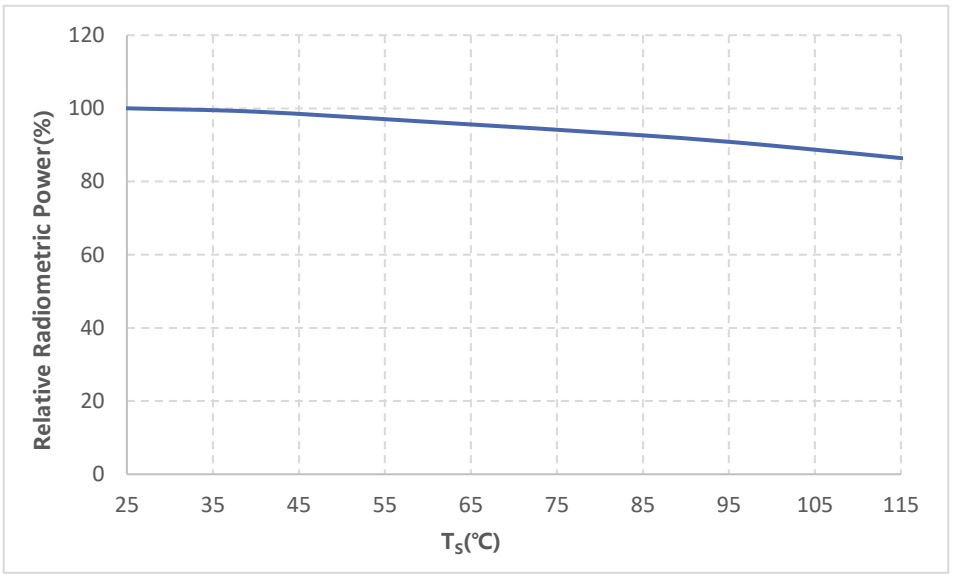
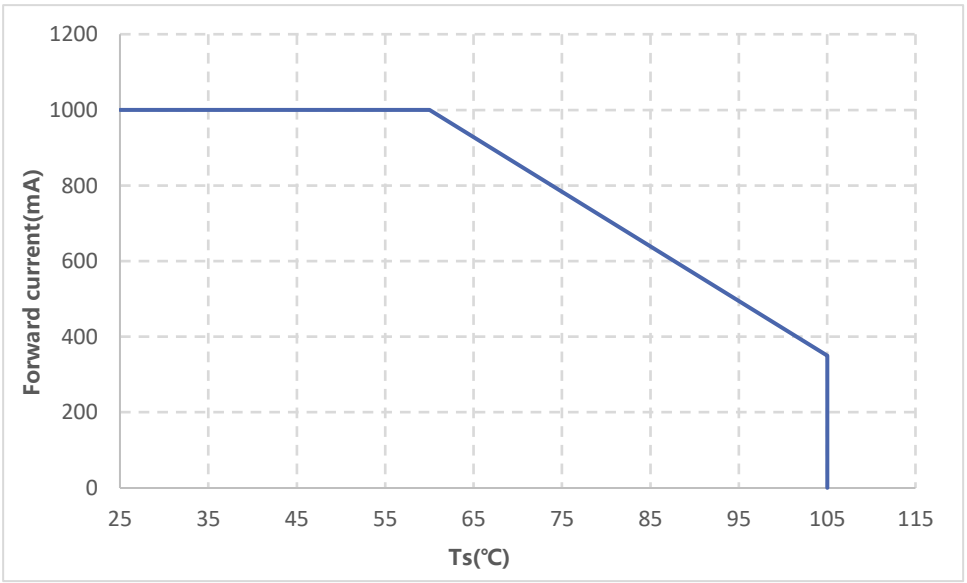


Fig 6. Forward Current VS Solder Temperature



Outline Vs. Recommended Solder Pad

Fig 7. Mechanical Dimensions

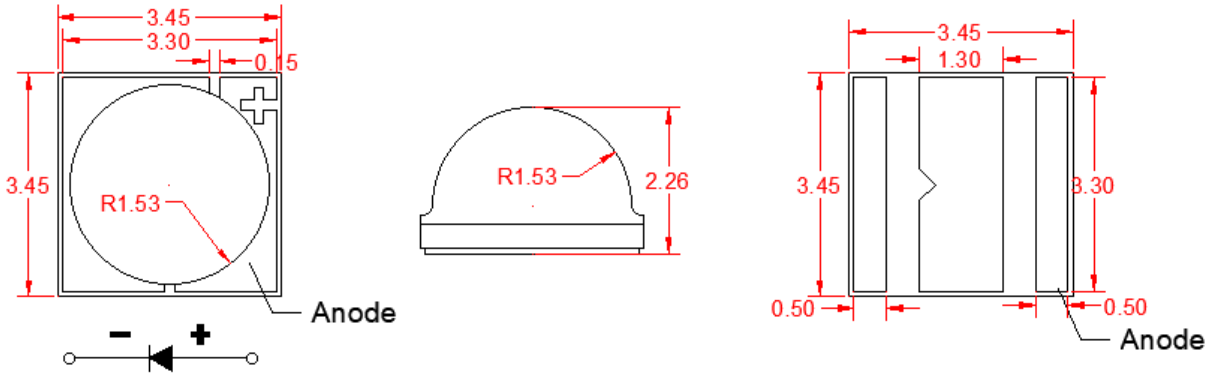
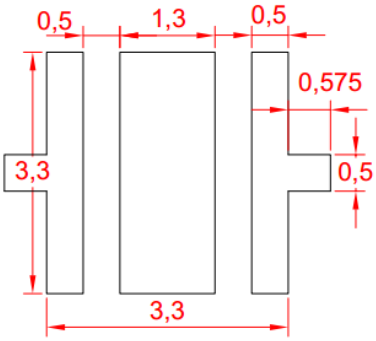
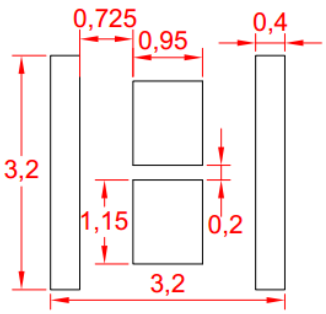


Fig 8. Recommended Solder Pad



Recommended PCB Solder Pad

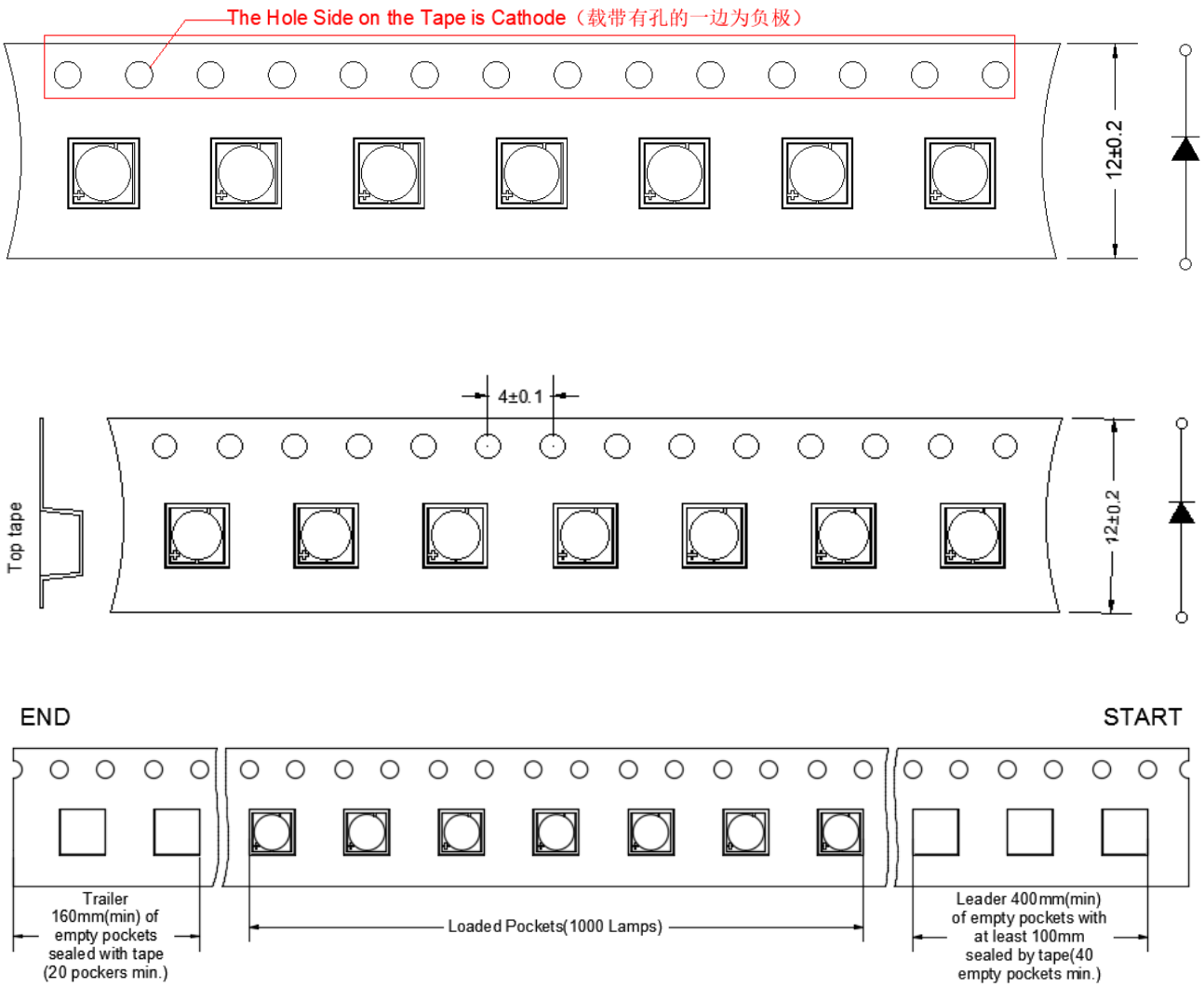


Recommended Stencil Pattern Stencil:0.12mm

·All dimensions are in millimeters.
·Scale: none.
·Undefined tolerance is ±0.1mm.

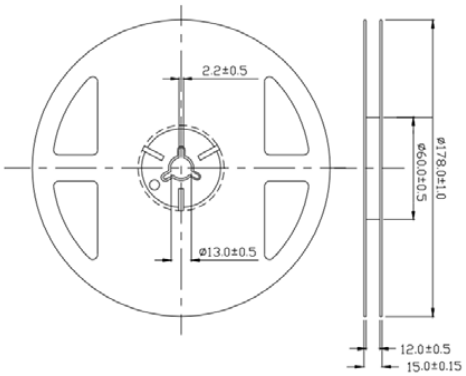
Packaging Information

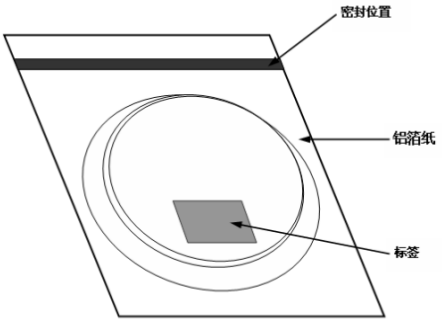
Fig 9. Reel Packaging 1000pcs/Reel



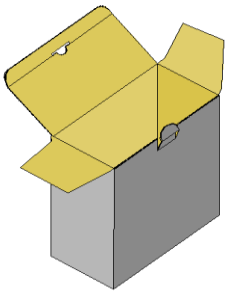
- Quantity : Max 1000pcs/Reel
- Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ±0.25mm
- Adhesion Strength of Cover Tape Adhesion strength to be 0.1-0.7N when the cover tape is turned off from the carrier tape at the angle of 10˚ to the carrier tape.
- Package : P/N, Manufacturing data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

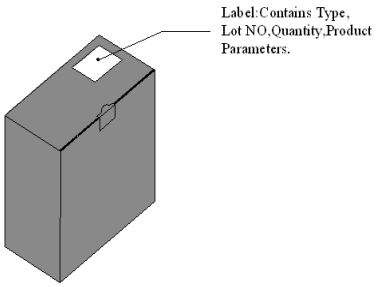
Reels





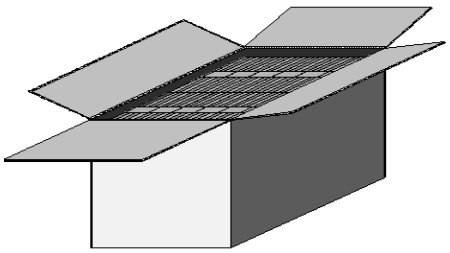
Inner Box

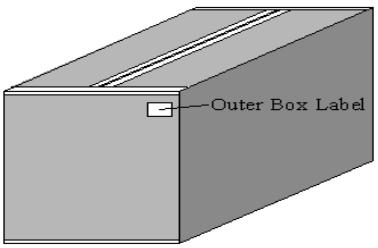




•Capacity 5 or 10 reels per box

Outer Box





Reflow Soldering

Recommended Mid-Temperature Solder Paste

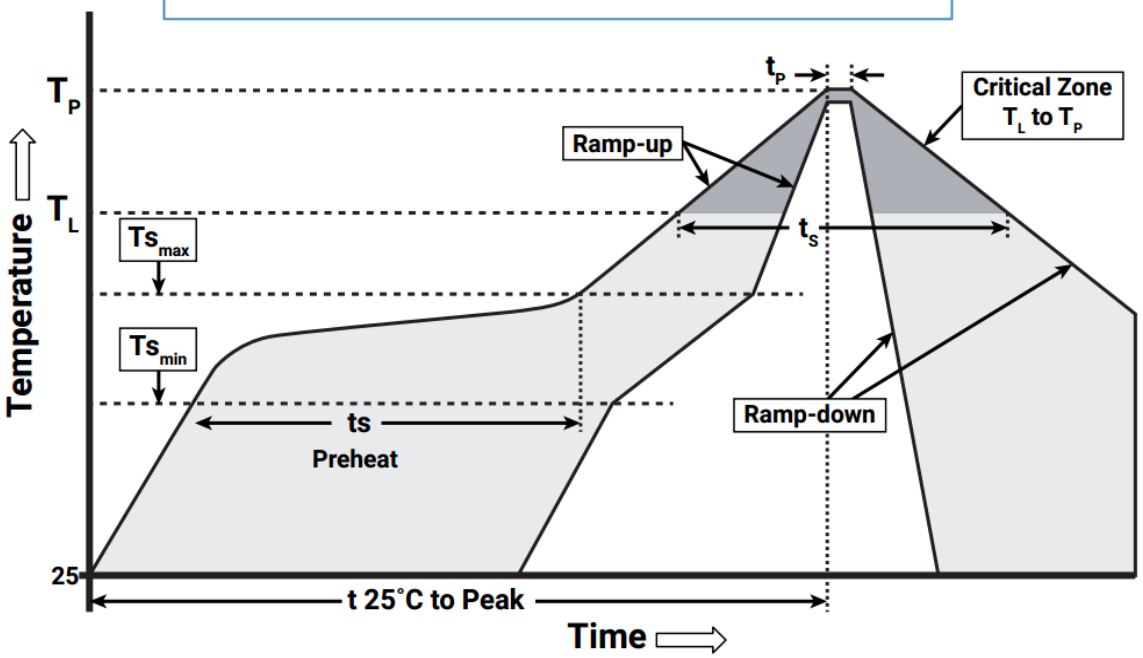


Table 11. Reflow profile characteristics

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