Doc.No：DS-144-14-03

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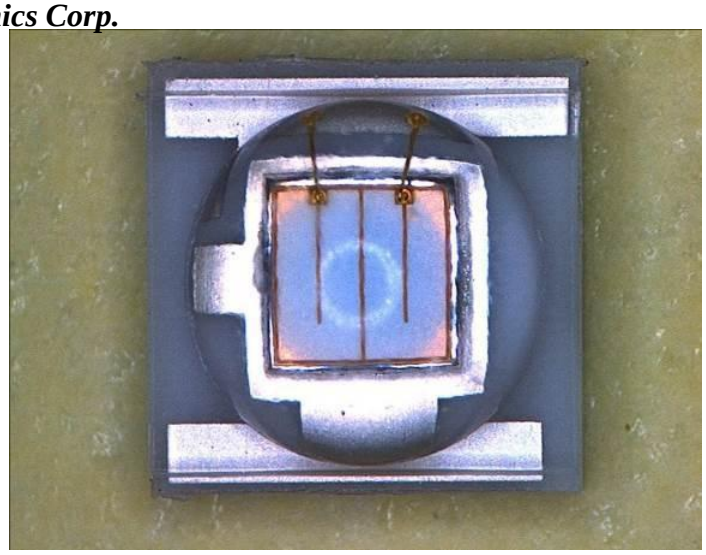

# Helixeon 3535 – UV

Helixeon 3535, a high compact and surface mounted solid-state lighting device, provides high radiometric power output with high optical efficiency. The reduced packing size remarkably promotes the flexibility on engineering design. With capability on standard lead free solder reflow process, Helixeon 3535 is applied for counterfeit currency, defect detection, medical treatment and etc.

## Features

- ☐ High compact size for more application flexibility
- ☐ RoHS certification
- ☐

## Applications

- ☐ Counterfeit currency
- ☐ Defect detection
- ☐ Medical treatment
- ☐ Party lighting

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# Product Nomenclature

**XPE UVA - L1**

X1 X2 X3

| X1 | | X2 | | X3 | |
|---|---|---|---|---|---|
| Series | | Color | | Sepcification | |
| Code | Type | Code | Type | Code | Type |
| XPE | XP-E | UVA | Ultraviolet 360-410nm | L1 | Lambertian |

## Absolute Maximum Ratings

| Parameters | Symbol | Rating | Unit |
|---|---|---|---|
| Continuous Forward current | IF | 700 | mA |
| Reverse voltage | VR | Not designed to driven in reverse bias VR≦5 | V |
| Operating temperature | Topr | -30 ~ 80 | ℃ |
| LED Storage temperature | Tstgl | -40 ~ 100 | ℃ |
| Soldering Temperature | Tsolder | 260 | ℃ |
| LED Junction temperature | Tj | 120 | ℃ |

Note:

1. Proper current derating must be observed to maintain junction temperature below the maximum.

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# Characteristics of Helixeon 3535 UV Series

Characteristics at If = 350mA (Ta=25℃):

| Parameter | Symbol | Value | | | Unit |
|---|---|---|---|---|---|
| | | Min | Typical | Max | |
| Radiometric power(1) | Po | 275 | 500 | -- | mW |
| Peak wavelength(3) | □ p | 365 | --- | 410 | nm |
| View angle | 2Θ1/2 | -- | 125 | -- | degree |
| Forward voltage(4) | VF | 3.2 | -- | 4.2 | V |

## Note:

1. The typical radiometric power of Helixeon will be upgraded per season.
2. Minimum radiometric power performance guaranteed within published operating conditions. HELIO maintains a tolerance of ±10% on radiometric power measurements.
3. HELIO maintains a tolerance of ±1 nm for peak wavelength measurement.
4. HELIO maintains a tolerance of±0.2 V on forward voltage measurement.

# Product Binning

Helixeon emitters are labeled using 6-digit alphanumeric bin code. The formats are explained as follows:

AB CD EF

Where:

AB - designates radiometric power bin.

CD - designates peak wavelength bin.

EF - designates forward voltage bin.

**Radiometric power binning information (AB)**

| Bin Code | Min. | Max. | Unit |
|---|---|---|---|
| AN | 210 | 240 | mW |
| AO | 240 | 285 | |
| AP | 285 | 325 | |
| AQ | 325 | 380 | |
| AR | 380 | 440 | |
| AS | 440 | 520 | |
| AT | 520 | 600 | |
| AU | 600 | 700 | |
| AV | 700 | 800 | |

**Peak wavelength binning information (CD)**

| Bin Code | Min. | Max. | Unit |
|---|---|---|---|
| VE | 360 | 362.5 | nm |
| CF | 362.5 | 365 | |
| CG | 365 | 367.5 | |
| VH | 367.5 | 370 | |
| VI | 370 | 372.5 | |
| VJ | 372.5 | 375 | |
| VK | 375 | 377.5 | |
| VL | 377.5 | 380 | |
| VM | 380 | 382.5 | |
| VN | 382.5 | 385 | |
| VO | 385 | 387.5 | |

| | | | |
|---|---|---|---|
| VP | 387.5 | 390 | |
| VQ | 390 | 392.5 | |
| VR | 392.5 | 395 | |
| VS | 395 | 397.5 | |
| VT | 397.5 | 400 | |
| EA | 400 | 402.5 | |
| EB | 402.5 | 405 | |
| EC | 405 | 407.5 | |
| ED | 407.5 | 410 | |

**Forward voltage binning information (EF)**

| Bin Code | Min. | Max. | Unit |
|---|---|---|---|
| 8 | 2.8 | 3 | V |
| 9 | 3 | 3.2 | |
| A | 3.2 | 3.4 | |
| B | 3.4 | 3.6 | |
| C | 3.6 | 3.8 | |

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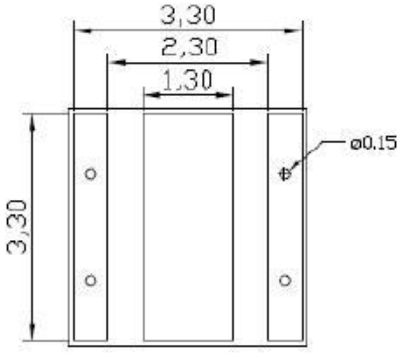
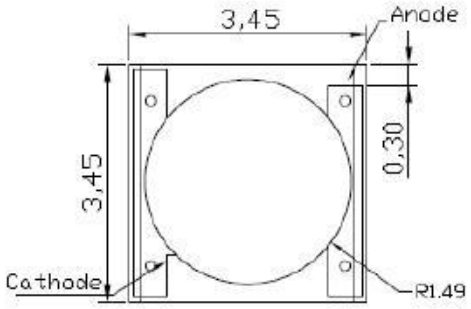
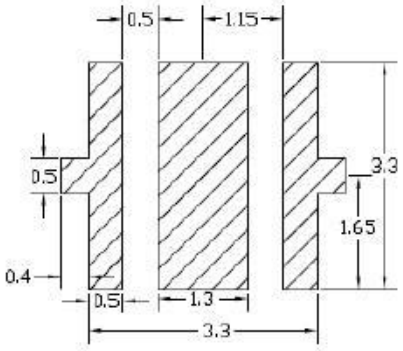
# Mechanical Dimensions

# XPE UVA-L1

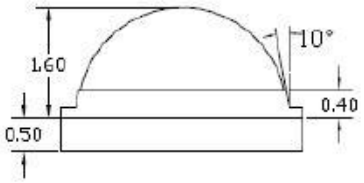


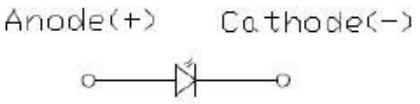

Bottom Layout




Recommended Solder Pad




Dimension




CirCuit Diagram

Note:

1. Drawing is not to scale.
2. All dimensions are in millimeter.
3. Dimensions are ±0.13mm unless otherwise indicated.

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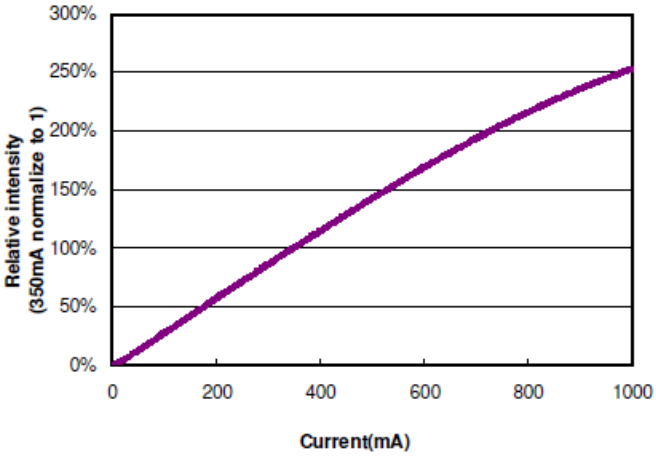
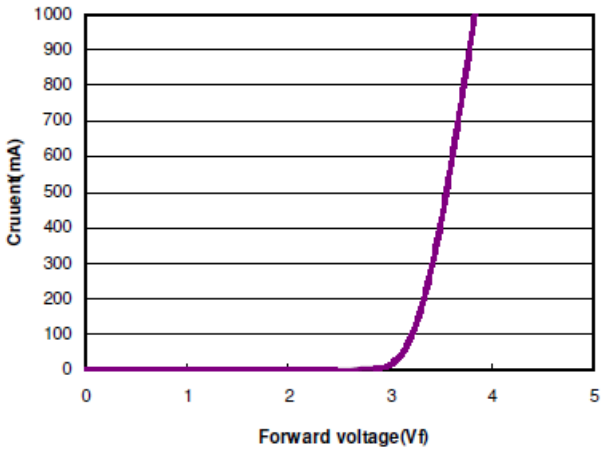
# Electrical & Optical characteristics

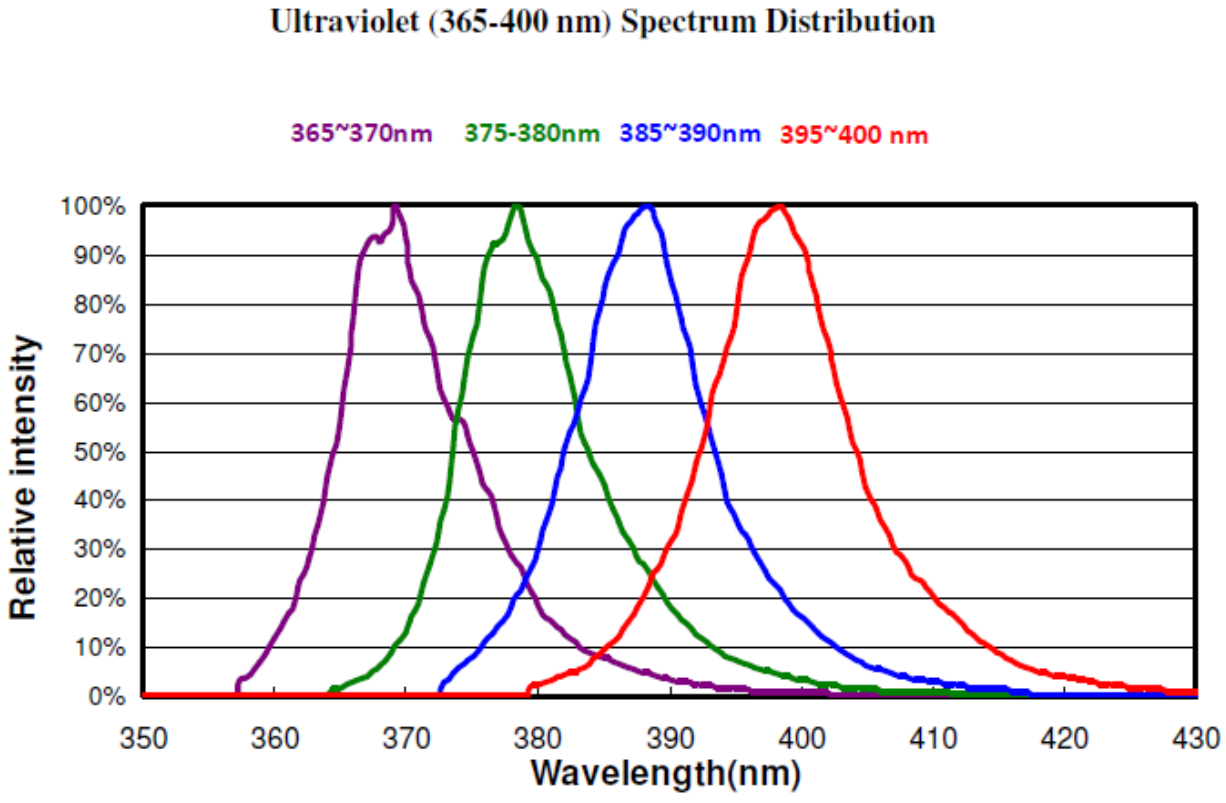
Luminous flux (Φe) vs Current(IF)




Current(IF) vs Voltage(VF)

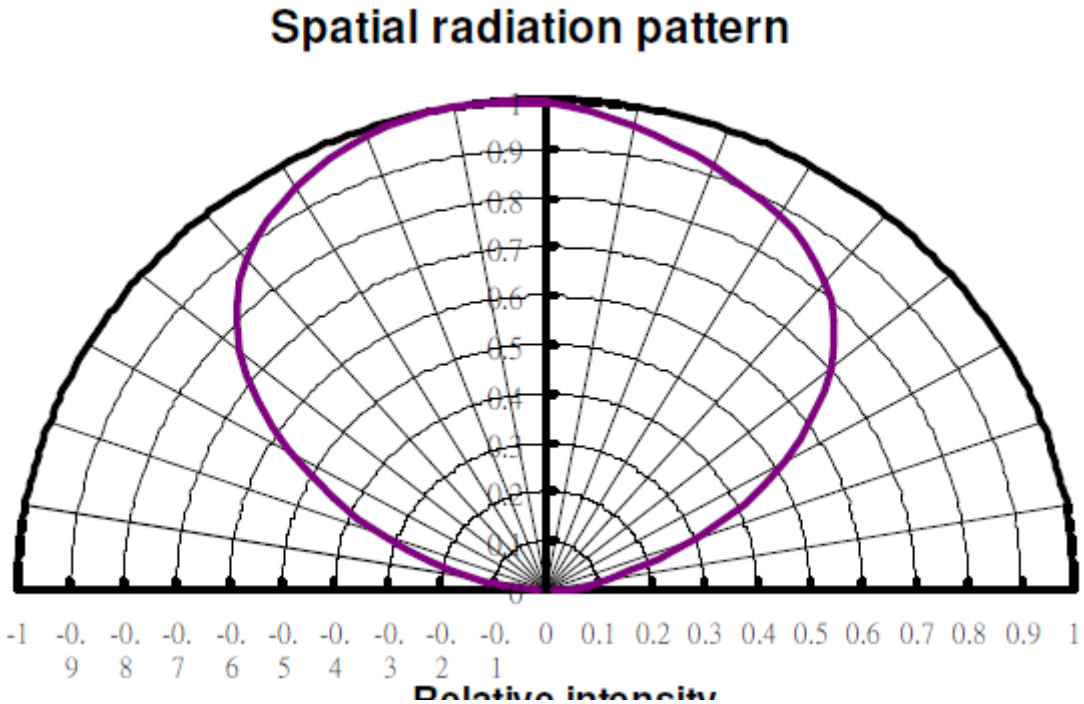



## Emission spectrum

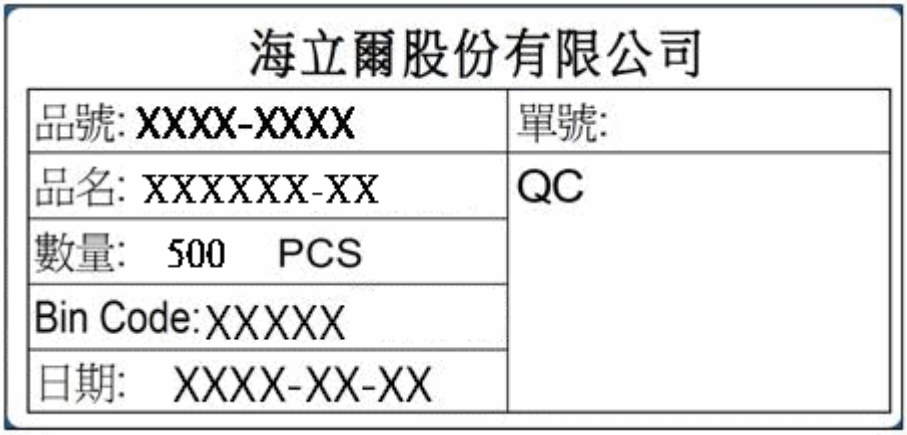


# Radiation Pattern

XPE XXX-L1




- Label



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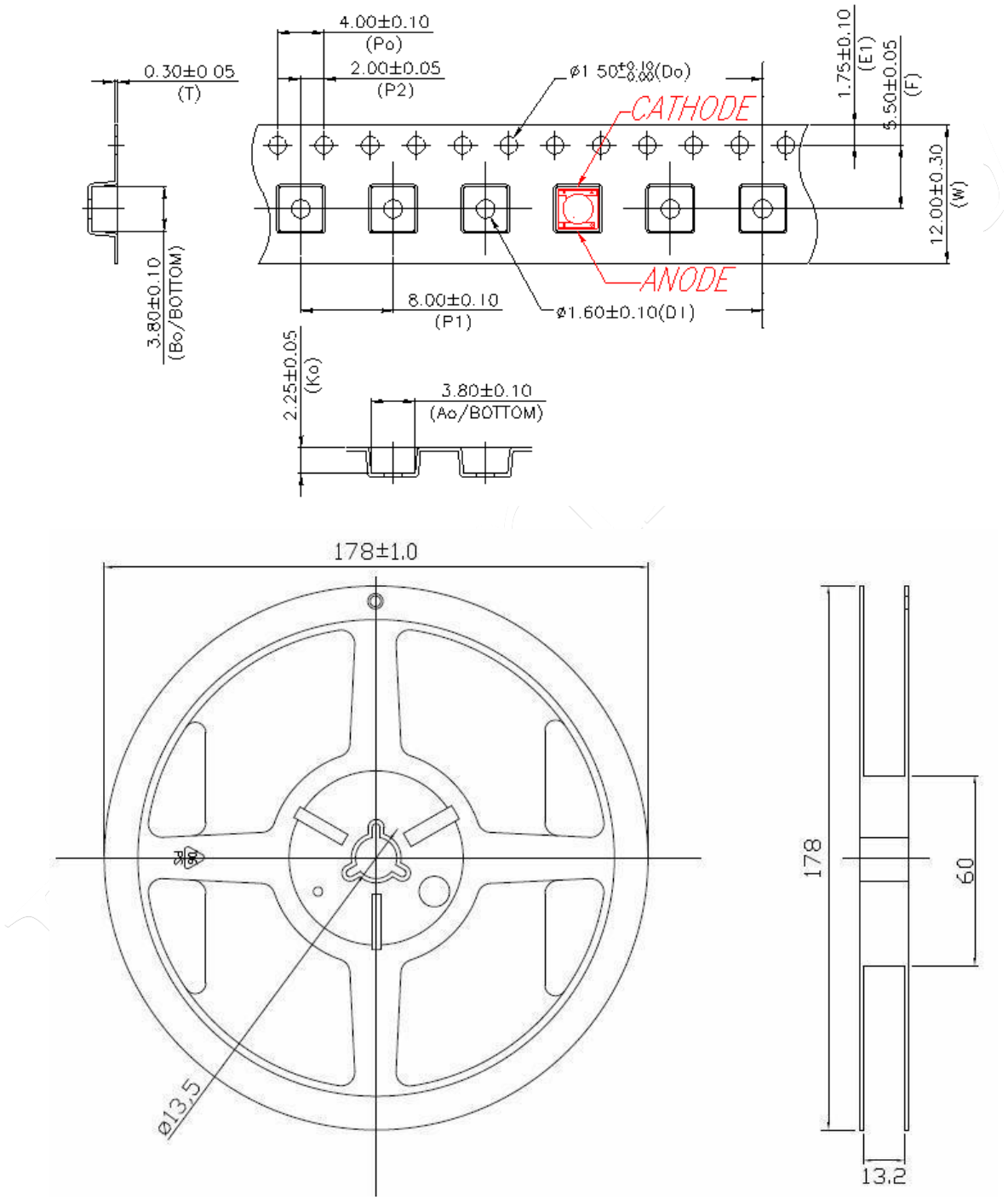
# Package Specifications

## Tape and Reel



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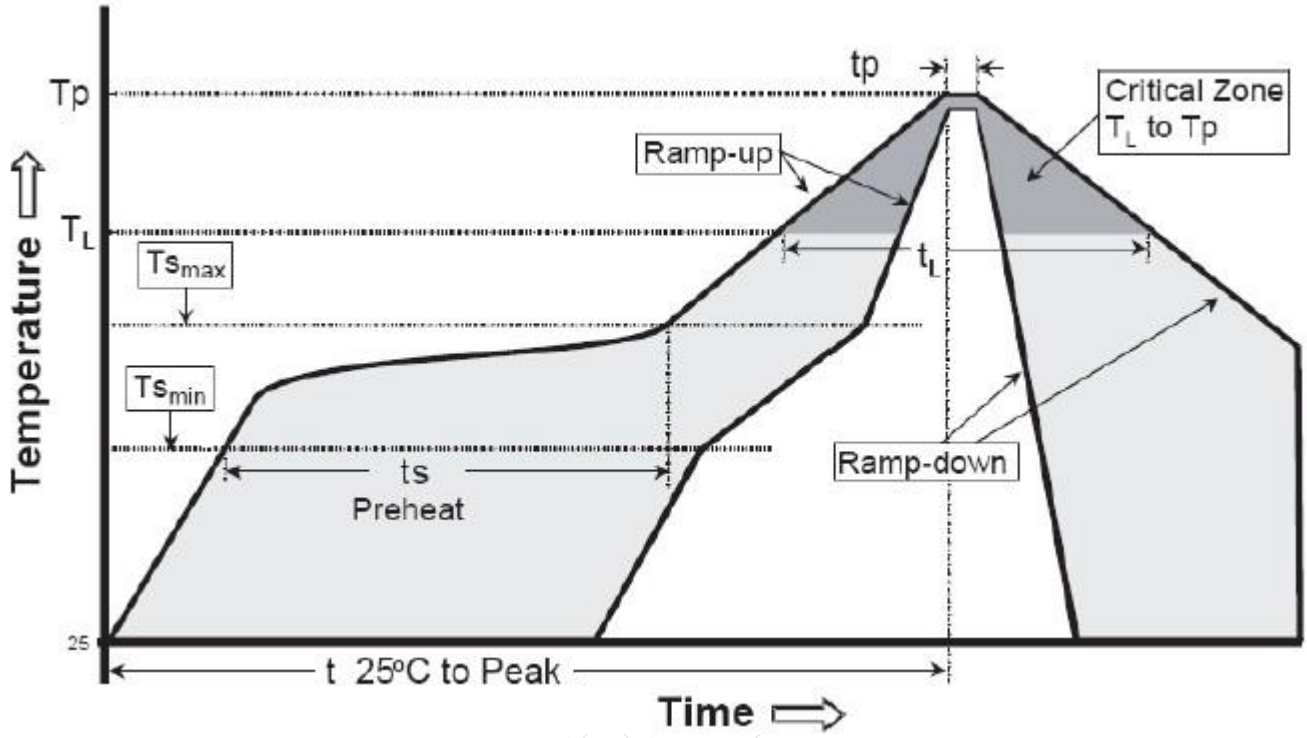
# Reflow soldering conditions




| Profile Feature | Typical parameters |
|---|---|
| Average Ramp-Up Rate ($Ts_{max}$ to Tp) | 3 ℃/second max. |
| Preheat Temperature Min ($Ts_{min}$) | 150 ℃ |
| Preheat Temperature Max ($Ts_{max}$) | 200 ℃ |
| Time ($Ts_{min}$ to $Ts_{max}$) | 60-180 seconds |
| Time maintained above Temperature (TL) | 217 ℃ |
| Time maintained above Time (TL) | 60-150 seconds |
| Peak/Classification Temperature (Tp) | 240 ℃ |
| Time within 5 ℃ of Actual Peak Temperature (Tp) | 5 seconds |
| Ramp-Down Rate | 6 ℃/second max. |
| Time 25 ℃ to Peak Temperature | 8 minutes max. |