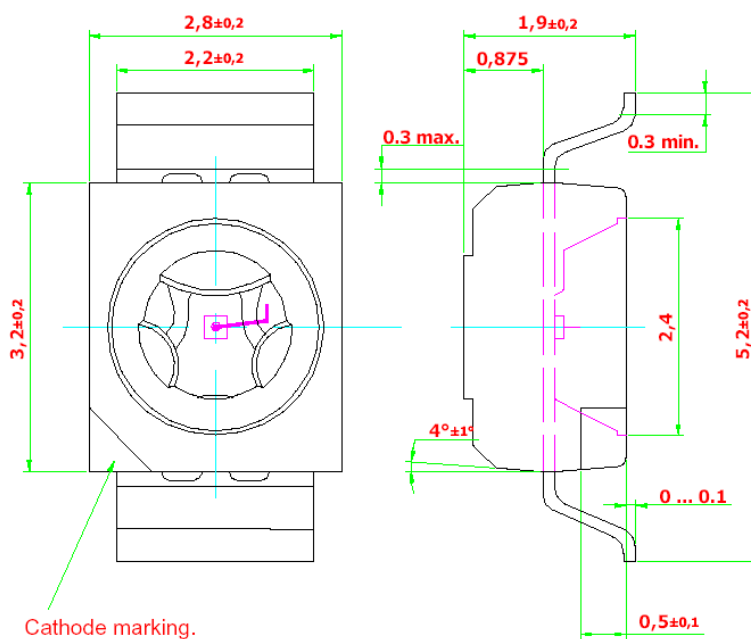




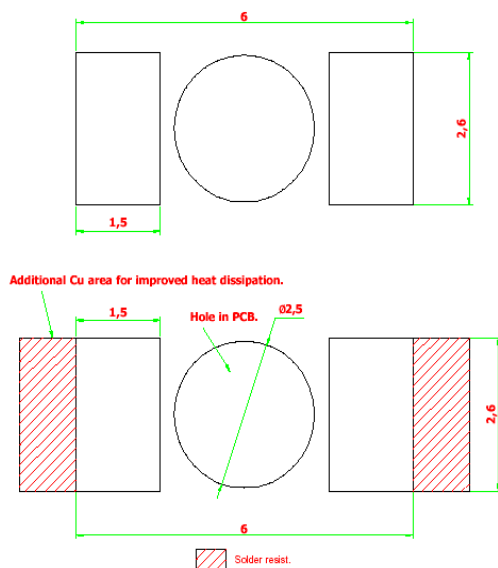
### ● Feature:

1. High brightness surface mount LED.
2. Based on InGaN technology.
3. 120° viewing angle.
4. Small package outline (LxWxH) of 2.8 x 3.2 x 1.8 mm.
5. Qualified according to JEDEC moisture sensitivity Level 2.
6. Compatible to both IR reflow soldering and TTW soldering.
7. RoHS compliance

### ● Package Dimension:



### Recommended Solder Pad



**● Optical Characteristics:**

| Part Number                                                                                                               | Chip Technology / Color       | Viewing angle | Luminous Intensity @ If = 20mA<br>Iv ( mcd )                                                       |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|----------------------------------------------------------------------------------------------------|
| <b>BL-PDB-CRS-C10</b> <ul style="list-style-type: none"><li>BIN P1</li><li>BIN P2</li><li>BIN Q1</li><li>BIN Q2</li></ul> | InGaN /<br>Blue, 470 nm       | 120           | <b>45.0 ... 112.5</b><br>45.0 ... 56.0<br>56.0 ... 71.5<br>71.5 ... 90.0<br>90.0 ... 112.5         |
| <b>BL-PDB-SRS-C10</b> <ul style="list-style-type: none"><li>BIN Q1</li><li>BIN Q2</li><li>BIN R1</li><li>BIN R2</li></ul> |                               |               | <b>71.5 ... 180.0</b><br>71.5 ... 90.0<br>90.0 ... 112.5<br>112.5 ... 140.0<br>140.0 ... 180.0     |
| <b>BL-PDB-URS-C10</b> <ul style="list-style-type: none"><li>BIN R1</li><li>BIN R2</li><li>BIN S1</li></ul>                |                               |               | <b>112.5 ... 224.0</b><br>112.5 ... 140.0<br>140.0 ... 180.0<br>180.0 ... 224.0                    |
| <b>BL-PDC-CRS-C10</b> <ul style="list-style-type: none"><li>BIN R1</li><li>BIN R2</li><li>BIN S1</li><li>BIN S2</li></ul> | InGaN /<br>Cyan, 505 nm       | 120           | <b>112.5 ... 285.0</b><br>112.5 ... 140.0<br>140.0 ... 180.0<br>180.0 ... 224.0<br>224.0 ... 285.0 |
| <b>BL-PDC-SRS-C10</b> <ul style="list-style-type: none"><li>BIN S1</li><li>BIN S2</li><li>BIN T1</li><li>BIN T2</li></ul> |                               |               | <b>180.0 ... 450.0</b><br>180.0 ... 224.0<br>224.0 ... 285.0<br>285.0 ... 355.0<br>355.0 ... 450.0 |
| <b>BL-PDT-CRS-C10</b> <ul style="list-style-type: none"><li>BIN R1</li><li>BIN R2</li><li>BIN S1</li><li>BIN S2</li></ul> | InGaN /<br>True Green, 525 nm | 120           | <b>112.5 ... 285.0</b><br>112.5 ... 140.0<br>140.0 ... 180.0<br>180.0 ... 224.0<br>224.0 ... 285.0 |
| <b>BL-PDT-SRS-C10</b> <ul style="list-style-type: none"><li>BIN S1</li><li>BIN S2</li><li>BIN T1</li><li>BIN T2</li></ul> |                               |               | <b>180.0 ... 450.0</b><br>180.0 ... 224.0<br>224.0 ... 285.0<br>285.0 ... 355.0<br>355.0 ... 450.0 |
| <b>BL-PDT-URS-C10</b> <ul style="list-style-type: none"><li>BIN T1</li><li>BIN T2</li><li>BIN U1</li><li>BIN U2</li></ul> |                               |               | <b>285.0 ... 715.0</b><br>285.0 ... 355.0<br>355.0 ... 450.0<br>450.0 ... 560.0<br>560.0 ... 715.0 |



| Part Number                                                                                                                       | Chip Technology / Color | Viewing angle | Luminous Intensity @ If = 20mA<br>Iv ( mcd )                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------|----------------------------------------------------------------------------------------------------|
| <b>BL-PDW-CRD-C10</b> <ul style="list-style-type: none"><li>• BIN R1</li><li>• BIN R2</li><li>• BIN S1</li><li>• BIN S2</li></ul> | InGaN /<br>White        | 120           | <b>112.5 ... 285.0</b><br>112.5 ... 140.0<br>140.0 ... 180.0<br>180.0 ... 224.0<br>224.0 ... 285.0 |
| <b>BL-PDW-SRD-C10</b> <ul style="list-style-type: none"><li>• BIN S1</li><li>• BIN S2</li><li>• BIN T1</li><li>• BIN T2</li></ul> |                         |               | <b>180.0 ... 450.0</b><br>180.0 ... 224.0<br>224.0 ... 285.0<br>285.0 ... 355.0<br>355.0 ... 450.0 |
| <b>BL-PDW-URD-C10</b> <ul style="list-style-type: none"><li>• BIN T1</li><li>• BIN T2</li><li>• BIN U1</li><li>• BIN U2</li></ul> |                         |               | <b>285.0 ... 715.0</b><br>285.0 ... 355.0<br>355.0 ... 450.0<br>450.0 ... 560.0<br>560.0 ... 715.0 |
| <b>BL-PDW-URD-C20</b> <ul style="list-style-type: none"><li>• BIN U1</li><li>• BIN U2</li><li>• BIN V1</li></ul>                  |                         |               | <b>450.0 ... 900.0</b><br>450.0 ... 560.0<br>560.0 ... 715.0<br>715.0 ... 900.0                    |

**NOTE:**

1. Other luminous intensity groups are also available upon request.
2. Luminous intensity is measured with an accuracy of  $\pm 11\%$ .
3. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.
4. An optional Vf binning is also available upon request. Binning scheme is as per following table.

**● Absolute Maximum Ratings:**

| Parameter                                                       | Maximum Value | Unit |
|-----------------------------------------------------------------|---------------|------|
| DC forward current.                                             | 20            | mA   |
| Peak pulse current; ( $t_p \leq 10 \mu s$ , Duty cycle = 0.005) | 200           | mA   |
| Reverse voltage.                                                | 5             | V    |
| LED junction temperature.                                       | 125           | °C   |
| Operating temperature.                                          | -40 ... +100  | °C   |
| Storage temperature.                                            | -40 ... +100  | °C   |
| Power dissipation ( at room temperature )                       | 85            | mW   |

**● Vf Binning:**

| Vf Bin @ 20mA | Forward voltage (V) |
|---------------|---------------------|
| Standard      | 3.35 ... 4.25       |
| 01            | 3.35 ... 3.65       |
| 02            | 3.65 ... 3.95       |
| 03            | 3.95 ... 4.25       |

Forward voltage, Vf is measured with an accuracy of  $\pm 0.1$  V.

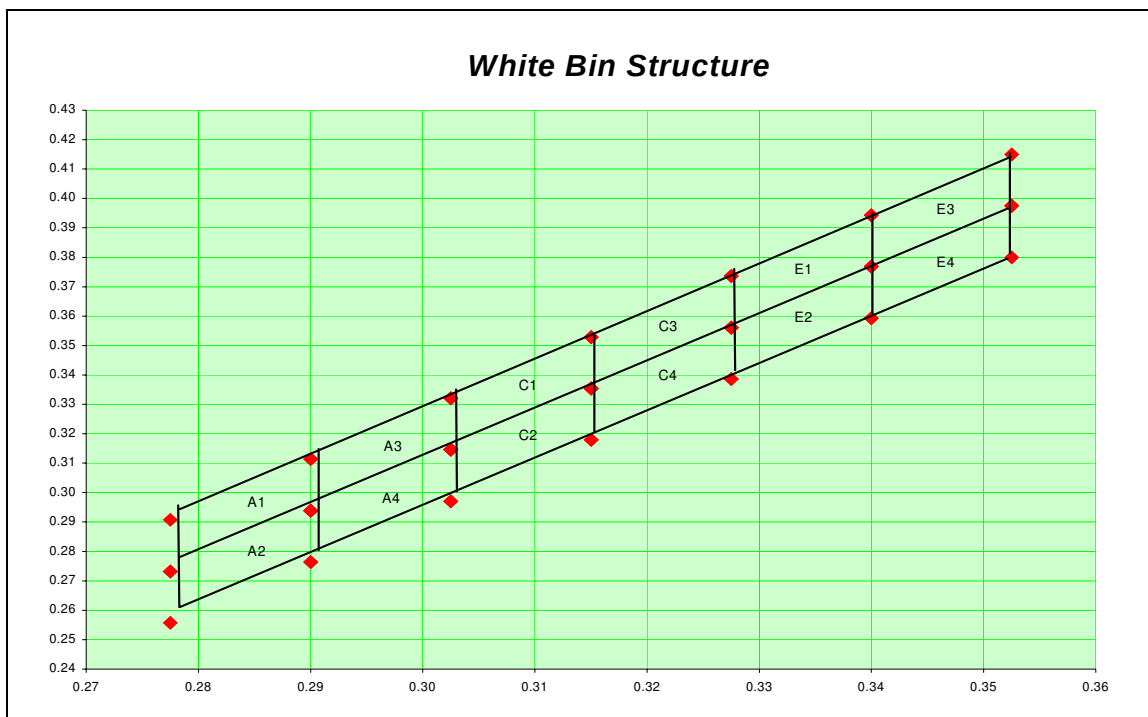
**● Wavelength Grouping:**

| Color              | Group | Wavelength distribution (nm) |
|--------------------|-------|------------------------------|
| BL-PDB; Blue       | Full  | 464 - 476                    |
|                    | W     | 464 - 468                    |
|                    | X     | 468 - 472                    |
|                    | Y     | 472 - 476                    |
| BL-PDC; Cyan       | Full  | 499 - 511                    |
|                    | W     | 499 - 503                    |
|                    | X     | 503 - 507                    |
|                    | Y     | 507 - 511                    |
| BL-PDT; True Green | Full  | 520 - 536                    |
|                    | W     | 520 - 524                    |
|                    | X     | 524 - 528                    |
|                    | Y     | 528 - 532                    |
|                    | Z     | 532 - 536                    |

Wavelength is measured with an accuracy of  $\pm 1$  nm.



### ● BL-PDW: White Color Grouping



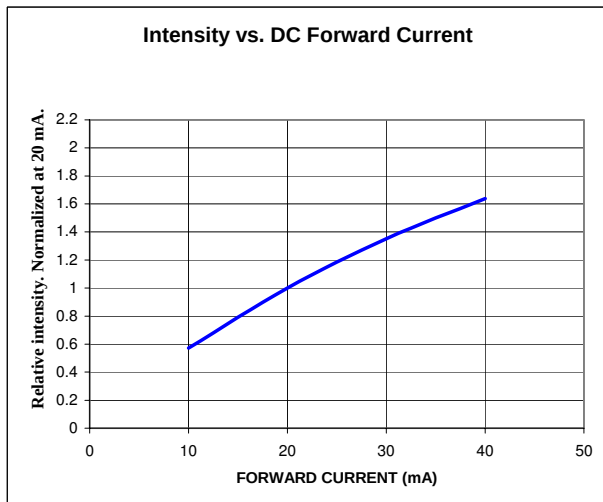
Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$ .

| W   |    |        |        |        |        | X   |    |        |        |        |        |
|-----|----|--------|--------|--------|--------|-----|----|--------|--------|--------|--------|
| Bin |    |        |        |        |        | Bin |    |        |        |        |        |
| A1  | Cx | 0.2775 | 0.2900 | 0.2900 | 0.2775 | E1  | Cx | 0.3275 | 0.3400 | 0.3400 | 0.3275 |
|     | Cy | 0.2732 | 0.2939 | 0.3114 | 0.2907 |     | Cy | 0.3561 | 0.3768 | 0.3943 | 0.3736 |
| A2  | Cx | 0.2775 | 0.2900 | 0.2900 | 0.2775 | E2  | Cx | 0.3275 | 0.3400 | 0.3400 | 0.3275 |
|     | Cy | 0.2557 | 0.2764 | 0.2939 | 0.2732 |     | Cy | 0.3386 | 0.3593 | 0.3768 | 0.3561 |
| A3  | Cx | 0.2900 | 0.3025 | 0.3025 | 0.2900 | E3  | Cx | 0.3400 | 0.3525 | 0.3525 | 0.3400 |
|     | Cy | 0.2939 | 0.3146 | 0.3321 | 0.3114 |     | Cy | 0.3768 | 0.3975 | 0.4150 | 0.3943 |
| A4  | Cx | 0.2900 | 0.3025 | 0.3025 | 0.2900 | E4  | Cx | 0.3400 | 0.3525 | 0.3525 | 0.3400 |
|     | Cy | 0.2764 | 0.2971 | 0.3146 | 0.2939 |     | Cy | 0.3593 | 0.3800 | 0.3975 | 0.3768 |
| C1  | Cx | 0.3025 | 0.3150 | 0.3150 | 0.3025 |     |    |        |        |        |        |
|     | Cy | 0.3146 | 0.3354 | 0.3529 | 0.3321 |     |    |        |        |        |        |
| C2  | Cx | 0.3025 | 0.3150 | 0.3150 | 0.3025 |     |    |        |        |        |        |
|     | Cy | 0.2971 | 0.3179 | 0.3354 | 0.3146 |     |    |        |        |        |        |
| C3  | Cx | 0.3150 | 0.3275 | 0.3275 | 0.3150 |     |    |        |        |        |        |
|     | Cy | 0.3354 | 0.3561 | 0.3736 | 0.3529 |     |    |        |        |        |        |
| C4  | Cx | 0.3150 | 0.3275 | 0.3275 | 0.3150 |     |    |        |        |        |        |
|     | Cy | 0.3179 | 0.3386 | 0.3561 | 0.3354 |     |    |        |        |        |        |

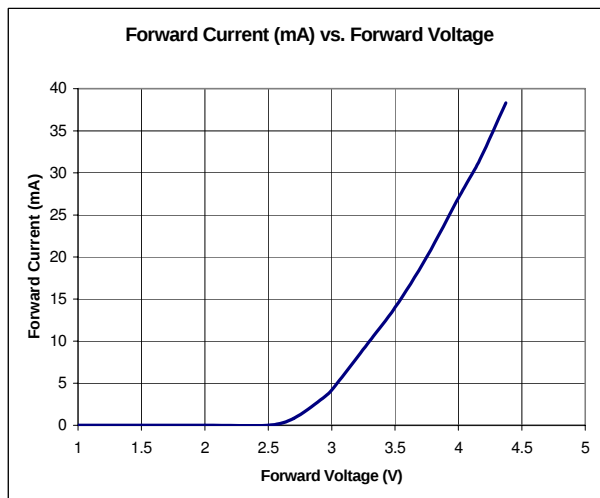


● Typical electro-optical characteristics curves:

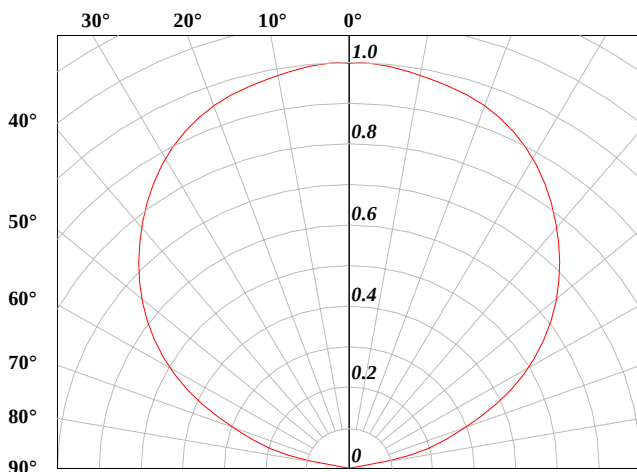
**Fig. 1** Relative luminous intensity vs. forward current.



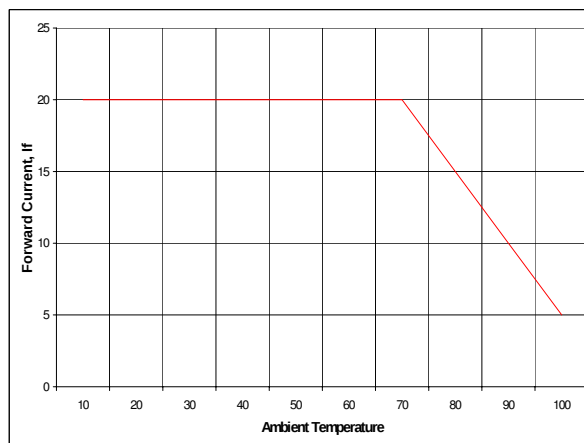
**Fig. 2** Forward current vs. forward voltage.



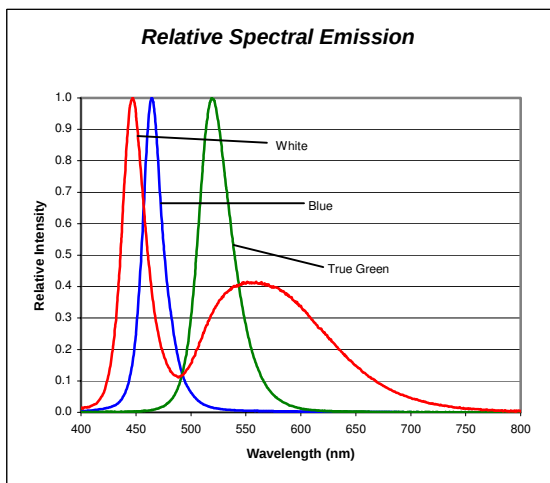
**Fig. 3** Radiation pattern.



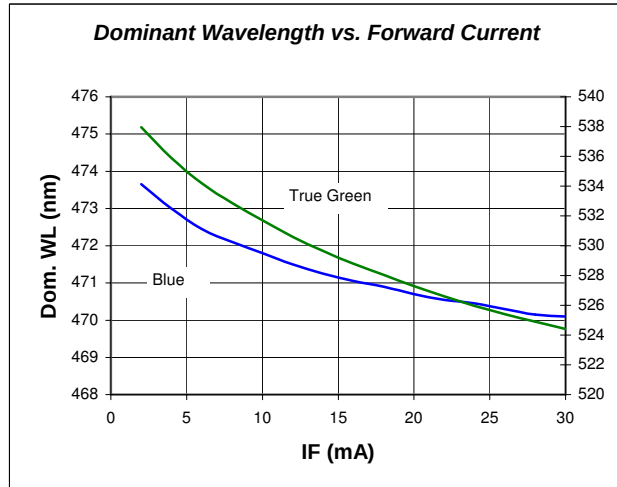
**Fig. 4** Maximum forward current vs. temperature.



**Fig. 5** Relative Intensity vs. Wavelength

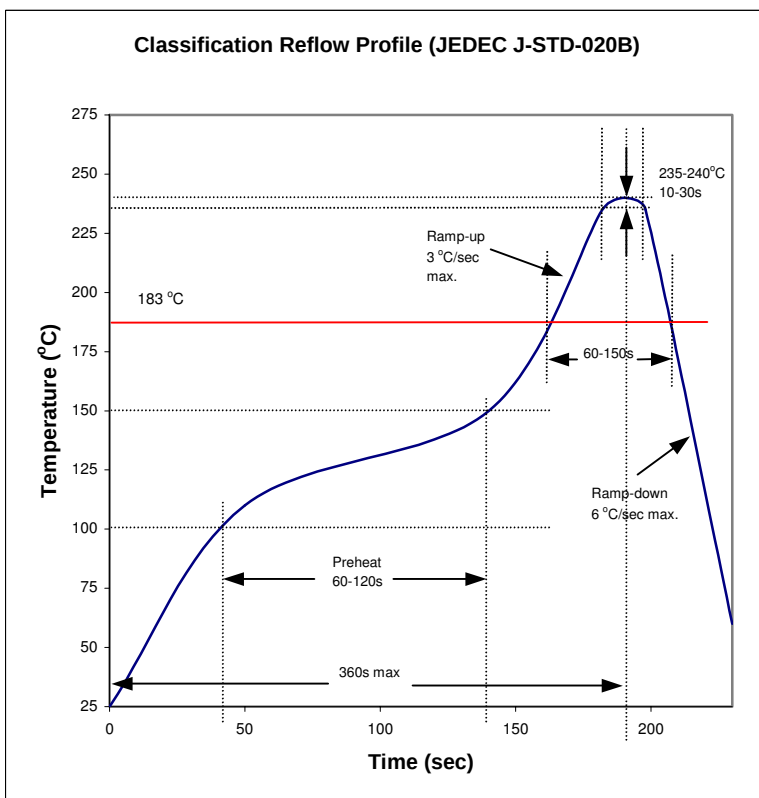


**Fig. 6** Dominant Wavelength vs. Forward Current

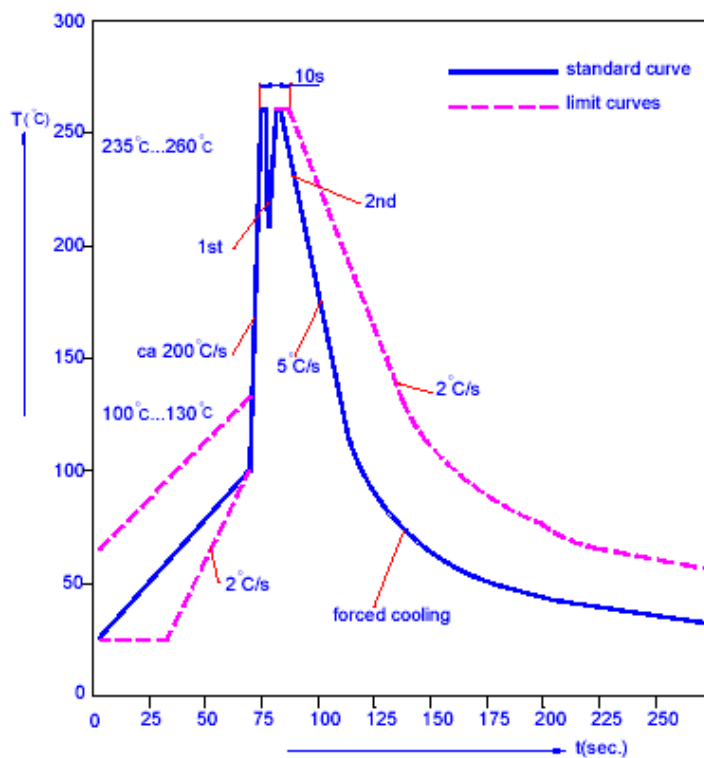




**Fig. 7 Recommended IR-reflow Soldering Profile.**



**Fig. 8 Recommended TTW Soldering Profile.**

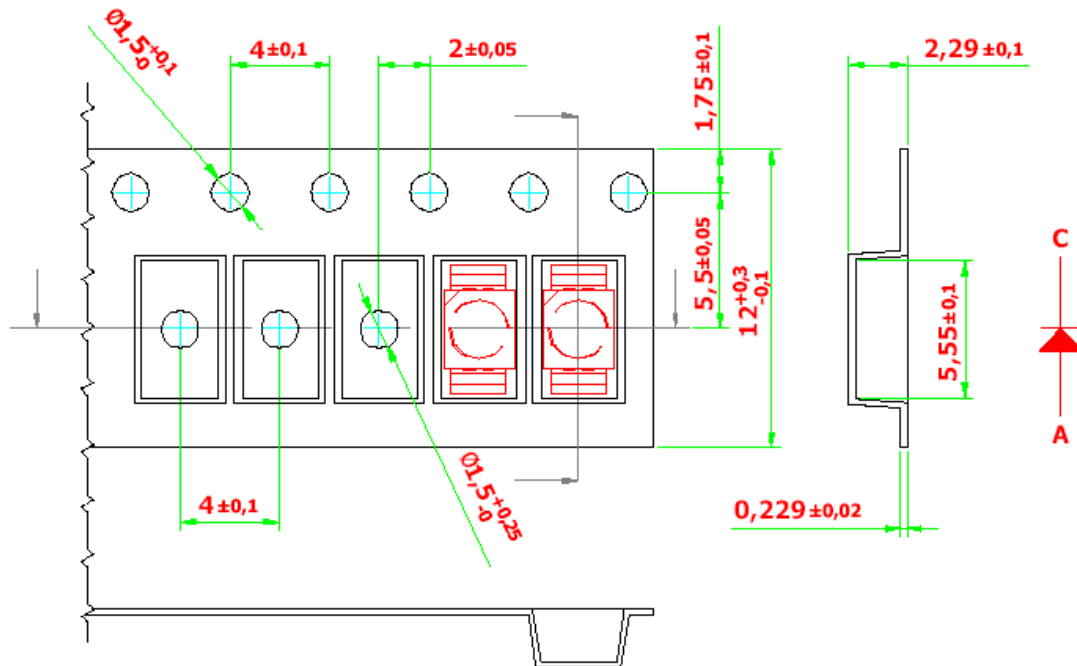




### ● Taping And Orientation.

Reels come in quantity of 8000 units or 2000 units.

Reel diameters are 330 mm and 180 mm respectively.



200 mm min. for Ø180 reel.

480 mm min. for Ø180 reel.

200 mm min. for Ø330 reel.

960 mm min. for Ø330 reel.

