

## Application Note 1-1

**Z-POWER LED series****Binning and Labeling**

Z-Power series is designed for high current operation and high flux output applications.



Z-Power LED's thermal management perform exceeds other power LED solutions.

It incorporates state of the art SMD design and Thermal emission material.

Z-Power LED is ideal light sources for general illumination applications, custom designed solutions, automotive large LCD backlights

This application note provides binning and labeling information of Z-Power LED series.

It includes the Z-Power LED bins for luminous flux, wavelength (or x,y coordinates), correlated color temperature (CCT) for white and forward voltage.

**Z1****Features**

- Super high flux output and high luminance
- Designed for high current operation
- Low thermal resistance
- SMT solderability
- Lead free product
- RoHS compliant

**Applications**

- Mobile phone flash
- Automotive interior / Exterior lighting
- Automotive signal lighting
- Automotive forward lighting
- Torch
- Architectural lighting
- LCD TV / Monitor backlight
- Projector light source
- Traffic signals
- Task lighting
- Decorative / Pathway lighting
- Remote / Solar powered lighting
- Household appliances

## Full Code of Z-Power LED Series

Full code form :  $X_1 X_2 X_3 X_4 X_5 X_6 X_7 - X_8 X_9 - X_{10} X_{11} X_{12} X_{13} X_{14}$

### 1. Part Number

- $X_1$  : Color
- $X_2$  : New Z-Power LED - 'Z'
- $X_3$  : New Z-Power LED series number
- $X_4$  : LENS type
- $X_5$  : Chip quantity (or Power Dissipation)
- $X_6$  : Package outline size
- $X_7$  : Type of PCB

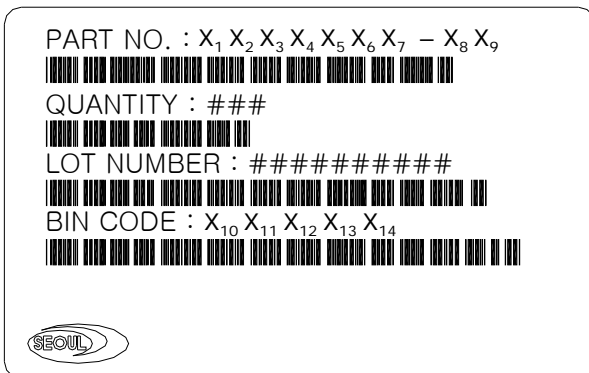
### 2. Internal Number

- $X_8$
- $X_9$

### 3. Code Labeling

- $X_{10}$  : Luminous flux (or Radiant flux for royal blue)
- $X_{11} X_{12} X_{13}$  : Dominant wavelength (or x,y coordinates rank code)
- $X_{14}$  : Forward voltage

### 4. Sticker Diagram on Reel & Aluminum Vinyl Bag



For more information about binning and labeling, refer to the Application Note -1

**Part Number**

Part numbers specify color, New Z-Power series, Lens type, P<sub>d</sub>, size and PCB type of New Z-Power LED.

- Example: X<sub>1</sub> X<sub>2</sub> X<sub>3</sub> X<sub>4</sub> X<sub>5</sub> X<sub>6</sub> X<sub>7</sub> – X<sub>8</sub>X<sub>9</sub><sup>1)</sup>

| X <sub>1</sub> | Color          |
|----------------|----------------|
| W              | Pure White     |
| N              | Warm White     |
| S              | Natural White* |
| D              | Royal Blue*    |
| B              | Blue*          |
| C              | Cyan*          |
| G              | Green*         |
| A              | Amber*         |
| R              | Red*           |

| X <sub>2</sub> | Z-Power Series     |
|----------------|--------------------|
| Z              | New Z-Power Series |

| X <sub>3</sub> | Z-Power Series |
|----------------|----------------|
| 1              | Z1             |
| 2              | Z2             |

| X <sub>4</sub> | LENS Type |
|----------------|-----------|
| 0              | Flat Type |

Note:

- 1) X<sub>8</sub> X<sub>9</sub> is a internal code number
- 2) Hemispherical dome type
- 3) \* : Not yet available.



| <b>X<sub>5</sub></b> | <b>Chip Quantity (or Power Dissipation)</b> |
|----------------------|---|
| 1                    | 1 chip (1W)                                 |
| 3                    | X chip (3.5W)                               |

| <b>X<sub>6</sub></b> | <b>Package Outline Size</b> |
|----------------------|-----------------------------|
| 6                    | 5.8 X 11.3 mm               |
| 5                    | 5 X 6 mm                    |

| <b>X<sub>7</sub></b> | <b>Metal PCB Type</b> |
|----------------------|-----------------------|
| 0                    | Emitter Only          |

## Code Labeling

### 1. Luminous Flux Bins

- Luminous flux bin structure for pure white, warm white, blue, cyan, green, amber and red Z-Power.

| Bin Code |    | Luminous Flux [lm] |
|----------|----|--------------------|
| J        |    | 6 ~ 8.5            |
| K        |    | 8.5 ~ 11.0         |
| L        |    | 11.0 ~ 14.5        |
| M        |    | 14.5 ~ 19.0        |
| O        |    | 19.0 ~ 24.5        |
| P        |    | 24.5 ~ 32.0        |
| Q        |    | 32.0 ~ 41.5        |
| R        |    | 41.5 ~ 54.0        |
| S        | S1 | 54.0 ~ 60.0        |
|          | S2 | 60.0 ~ 70.0        |
| T        | T1 | 70.0 ~ 80.0        |
|          | T2 | 80.0 ~ 91.0        |
| U        | U1 | 91.0 ~ 100.0       |
|          | U2 | 100.0 ~ 118.5      |
| V        |    | 118.5 ~ 154.0      |
| W        | W1 | 154.0 ~ 177.0      |
|          | W2 | 177.0 ~ 200.0      |
| X        | X1 | 200.0 ~ 230.0      |
|          | X2 | 230.0 ~ 260.0      |
| Y        | Y1 | 260.0 ~ 300.0      |
|          | Y2 | 300.0 ~ 340.0      |

The list explains the photometric luminous flux bins for Z-Power LED. Z-Power LED are tested and binned by photometric luminous flux. Not all bins are available in all colors.

Tolerance :  $\pm 10\%$  of Luminous flux value

## 2. Color Bins

Z-Power are tested and binned for dominant wavelength (blue, green, red) or x,y coordinates (pure white, warm white)

2 -1 Blue, Green, Red

| Bin Code | Color  | Dominant Wavelength [nm] |
|----------|--------|--------------------------|
| BB1      | Blue*  | 455 ~ 460                |
| BB2      |        | 460 ~ 465                |
| BB3      |        | 465 ~ 470                |
| BB4      |        | 470 ~ 475                |
| GG1      | Green* | 520 ~ 525                |
| GG2      |        | 525 ~ 530                |
| GG3      |        | 530 ~ 535                |
| RR1      | Red*   | 618 ~ 625                |
| RR2      |        | 625 ~ 632                |

Tolerance

Dominant wavelength :  $\pm 0.5$  nm

Peak wavelength :  $\pm 2.0$  nm

\* : **Not yet available**

2-2. Pure White CIE

Pure white product tested and binned by x,y coordinates and CCT

- Pure white bin structure

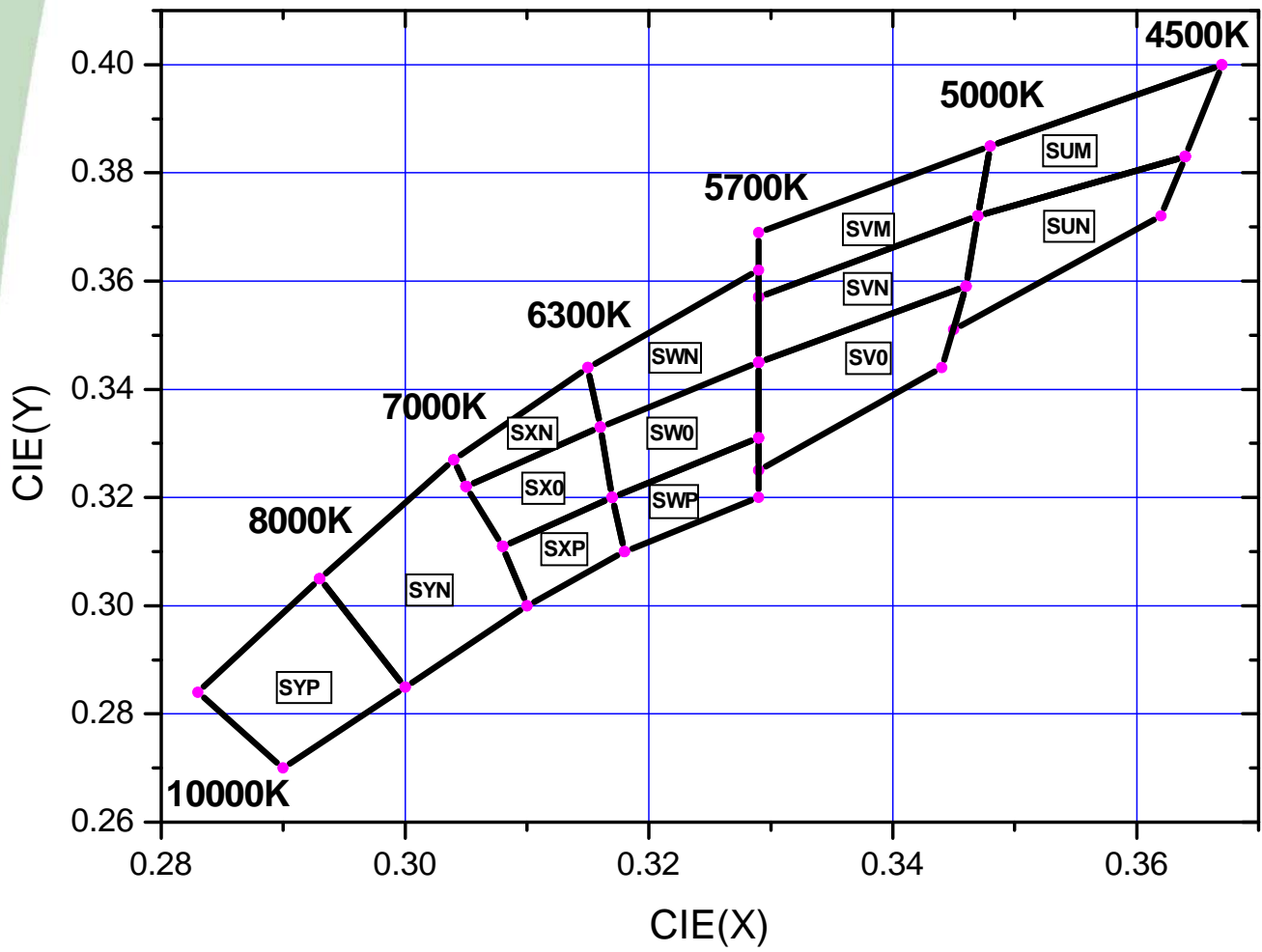
| Bin   | CHR_X | CHR_Y | CCT(K) | Bin   | CHR_X | CHR_Y | CCT(K) |       |  |
|-------|-------|-------|--------|-------|-------|-------|--------|-------|--|
| SYP   | 0.293 | 0.305 | 9000   | SWP   | 0.329 | 0.331 | 6050   |       |  |
|       | 0.283 | 0.284 |        |       | 0.317 | 0.320 |        |       |  |
|       | 0.290 | 0.270 |        |       | 0.318 | 0.310 |        |       |  |
|       | 0.300 | 0.285 |        |       | 0.329 | 0.320 |        |       |  |
|       |       |       | 0.329  |       | 0.325 |       |        |       |  |
| SYN   | 0.304 | 0.327 | 7500   | SVM   | 0.348 | 0.385 | 5350   |       |  |
|       | 0.293 | 0.305 |        |       | 0.329 | 0.369 |        |       |  |
|       | 0.300 | 0.285 |        |       | 0.329 | 0.362 |        |       |  |
|       | 0.310 | 0.300 |        |       | 0.329 | 0.357 |        |       |  |
|       | 0.308 | 0.311 |        |       | 0.347 | 0.372 |        |       |  |
| 0.305 | 0.322 |       |        |       |       |       |        |       |  |
| SXX   | 0.315 | 0.344 | 6700   | SVN   | 0.347 | 0.372 | 5350   |       |  |
|       | 0.304 | 0.327 |        |       | 0.329 | 0.357 |        |       |  |
|       | 0.305 | 0.322 |        |       | 0.329 | 0.345 |        |       |  |
|       | 0.316 | 0.333 |        |       | 0.346 | 0.359 |        |       |  |
| SX0   | 0.316 | 0.333 | 6700   | SV0   | 0.346 | 0.359 | 5350   |       |  |
|       | 0.305 | 0.322 |        |       | 0.329 | 0.345 |        |       |  |
|       | 0.308 | 0.311 |        |       | 0.329 | 0.331 |        |       |  |
|       | 0.317 | 0.32  |        |       | 0.329 | 0.325 |        |       |  |
| SXP   | 0.317 | 0.320 | 6700   |       |       | 0.344 |        | 0.344 |  |
|       | 0.308 | 0.311 |        |       | 0.345 | 0.351 |        |       |  |
|       | 0.310 | 0.300 |        | SUM   | 0.367 | 0.400 | 4800   |       |  |
|       | 0.318 | 0.310 |        |       | 0.348 | 0.385 |        |       |  |
| SWN   | 0.329 | 0.362 | 6050   |       | 0.347 | 0.372 |        |       |  |
|       | 0.315 | 0.344 |        | 0.364 | 0.383 |       |        |       |  |
|       | 0.316 | 0.333 |        | SUN   | 0.364 | 0.383 | 4800   |       |  |
|       | 0.329 | 0.345 |        |       | 0.347 | 0.372 |        |       |  |
|       | 0.329 | 0.357 |        |       | 0.346 | 0.359 |        |       |  |
| SW0   | 0.329 | 0.345 | 6050   |       | 0.345 | 0.351 |        |       |  |
|       | 0.316 | 0.333 |        | 0.362 | 0.372 |       |        |       |  |
|       | 0.317 | 0.320 |        |       |       |       |        |       |  |
|       | 0.329 | 0.331 |        |       |       |       |        |       |  |

Tolerance

Color coordinate : ±0.005

CCT : ±5% of value

- Pure white binning structure graphical representation





2-3. Warm White

Warm white product tested and binned by x,y coordinates and CCT

- Warm white bin structure

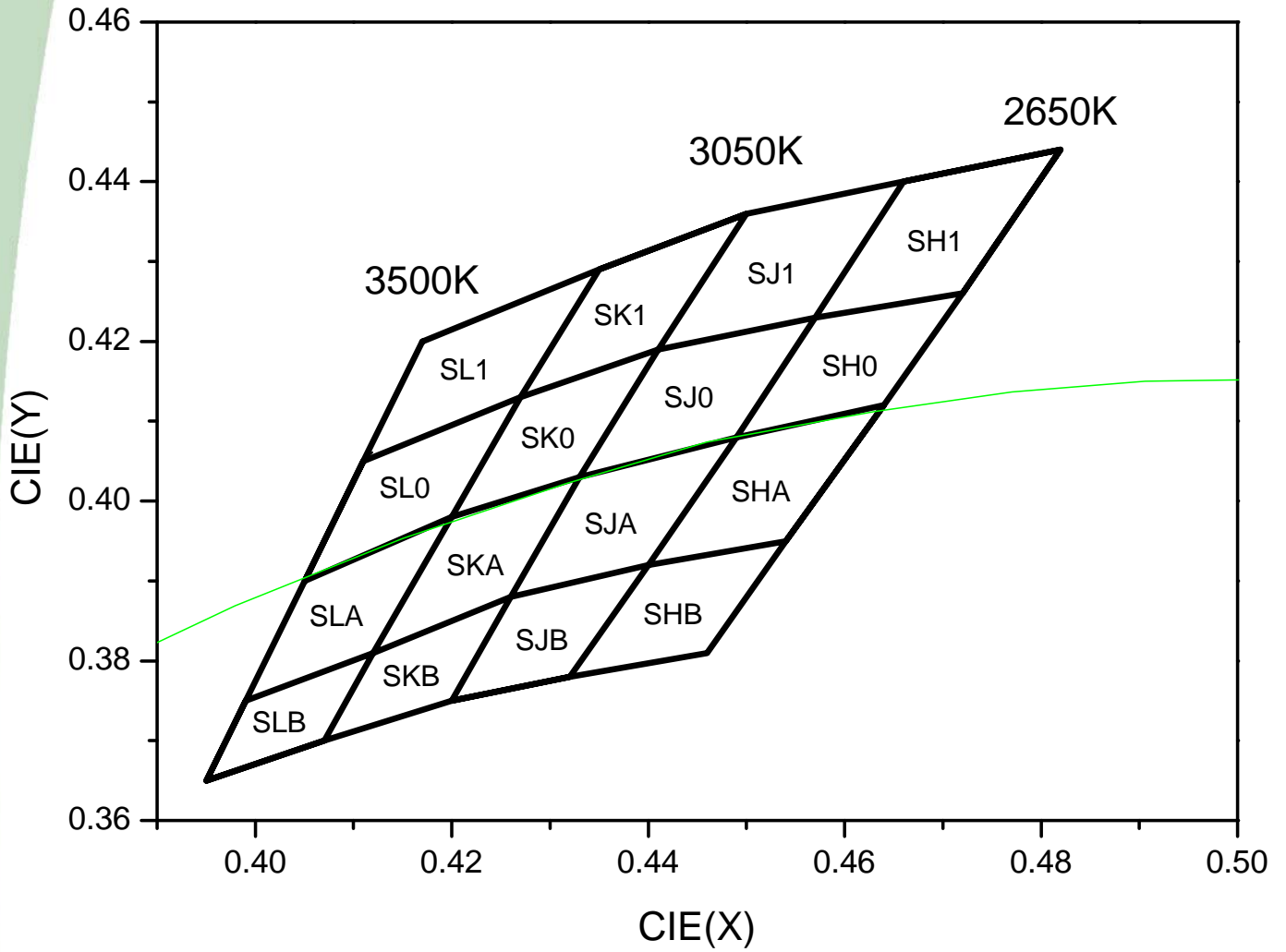
| Bin | CHR_X | CHR_Y | CCT(K) | Bin | CHR_X | CHR_Y | CCT(K) |
|-----|-------|-------|--------|-----|-------|-------|--------|
| SL1 | 0.435 | 0.429 | 3375   | SJ1 | 0.466 | 0.440 | 2950   |
|     | 0.417 | 0.420 |        |     | 0.450 | 0.436 |        |
|     | 0.411 | 0.405 |        |     | 0.441 | 0.419 |        |
|     | 0.427 | 0.413 |        |     | 0.457 | 0.423 |        |
| SL0 | 0.427 | 0.413 | 3375   | SJ0 | 0.457 | 0.423 | 2950   |
|     | 0.411 | 0.405 |        |     | 0.441 | 0.419 |        |
|     | 0.405 | 0.390 |        |     | 0.433 | 0.403 |        |
|     | 0.420 | 0.398 |        |     | 0.449 | 0.408 |        |
| SLA | 0.420 | 0.398 | 3375   | SJA | 0.449 | 0.408 | 2950   |
|     | 0.405 | 0.390 |        |     | 0.433 | 0.403 |        |
|     | 0.399 | 0.375 |        |     | 0.426 | 0.388 |        |
|     | 0.412 | 0.381 |        |     | 0.440 | 0.392 |        |
| SLB | 0.412 | 0.381 | 3375   | SJB | 0.440 | 0.392 | 2950   |
|     | 0.399 | 0.375 |        |     | 0.426 | 0.388 |        |
|     | 0.395 | 0.365 |        |     | 0.42  | 0.375 |        |
|     | 0.407 | 0.37  |        |     | 0.432 | 0.378 |        |
| SK1 | 0.450 | 0.436 | 3150   | SH1 | 0.482 | 0.444 | 2750   |
|     | 0.435 | 0.429 |        |     | 0.466 | 0.440 |        |
|     | 0.427 | 0.413 |        |     | 0.457 | 0.423 |        |
|     | 0.441 | 0.419 |        |     | 0.472 | 0.426 |        |
| SK0 | 0.441 | 0.419 | 3150   | SH0 | 0.472 | 0.426 | 2750   |
|     | 0.427 | 0.413 |        |     | 0.457 | 0.423 |        |
|     | 0.420 | 0.398 |        |     | 0.449 | 0.408 |        |
|     | 0.433 | 0.403 |        |     | 0.464 | 0.412 |        |
| SKA | 0.433 | 0.403 | 3150   | SHA | 0.464 | 0.412 | 2750   |
|     | 0.420 | 0.398 |        |     | 0.449 | 0.408 |        |
|     | 0.412 | 0.381 |        |     | 0.440 | 0.392 |        |
|     | 0.426 | 0.388 |        |     | 0.454 | 0.395 |        |
| SKB | 0.426 | 0.388 | 3150   | SHB | 0.454 | 0.395 | 2750   |
|     | 0.412 | 0.381 |        |     | 0.440 | 0.392 |        |
|     | 0.407 | 0.370 |        |     | 0.432 | 0.378 |        |
|     | 0.420 | 0.375 |        |     | 0.446 | 0.381 |        |

Tolerance

Color coordinate :  $\pm 0.005$

CCT :  $\pm 5\%$  of value

- Warm white binning structure graphical representation



### 3. Forward Voltage Bins

| Bin Code | Forward Voltage [V] |
|----------|---------------------|
| D        | 2.00 ~ 2.25         |
| E        | 2.25 ~ 2.50         |
| F        | 2.50 ~ 2.75         |
| G        | 2.75 ~ 3.00         |
| H        | 3.00 ~ 3.25         |
| I        | 3.25 ~ 3.50         |
| J        | 3.50 ~ 3.75         |
| K        | 3.75 ~ 4.00         |
| L        | 4.00 ~ 4.25         |
| M        | 4.25 ~ 4.50         |
| N        | 4.50~5.00           |

Tolerance :  $\pm 0.06V$

### 1W Order Code (Z1)

New **Z Power LED** has an order code, use it as follows to purchase.

- Example: WZ10150 – 1A
  - WZ10150: Part Number
  - 1A : Order code

You can select PCB type, Lens type and Z-Power LED series number as part number.

#### 1. Pure White (1A,1B,1C,1D)

| Standard Order Codes for pure white |    |     |                  |               |
|-------------------------------------|----|-----|------------------|---------------|
| Order Code                          | LF | CC  | V <sub>F</sub>   | Bin Codes     |
| Part No. – 1A                       | U1 | SXN | I<br>J<br>K<br>L | U1SXNI~U1SXNL |
|                                     |    | SWN |                  | U1SWNI~U1SWNL |
|                                     |    | SX0 |                  | U1SX0I~U1SX0L |
|                                     |    | SW0 |                  | U1SW0I~U1SW0L |
|                                     | U2 | SXN |                  | U2SXNI~U2SXNL |
|                                     |    | SWN |                  | U2SWNI~U2SWNL |
|                                     |    | SX0 |                  | U2SX0I~U2SX0L |
|                                     |    | SW0 |                  | U2SW0I~U2SW0L |
| Part No. – 1B                       | V* | SXN | VSXNI~VSXNL      |               |
|                                     |    | SWN | VSWNI~VSWNL      |               |
|                                     |    | SX0 | VSX0I~VSX0L      |               |
|                                     |    | SW0 | VSW0I~VSW0L      |               |
| Part No. – 1C                       | U1 | SX0 | I<br>J<br>K<br>L | U1SX0I~U1SX0L |
|                                     |    | SW0 |                  | U1SW0I~U1SW0L |
|                                     |    | SXP |                  | U1SXPI~U1SXPL |
|                                     |    | SWP |                  | U1SWPI~U1SWPL |
|                                     | U2 | SX0 |                  | U2SX0I~U2SX0L |
|                                     |    | SW0 |                  | U2SW0I~U2SW0L |
|                                     |    | SXP |                  | U2SXPI~U2SXPL |
|                                     |    | SWP |                  | U2SWPI~U2SWPL |
| Part No. – 1D                       | V* | SX0 | VSX0I~VSX0L      |               |
|                                     |    | SW0 | VSW0I~VSW0L      |               |
|                                     |    | SXP | VSXPI~VSXPL      |               |
|                                     |    | SWP | VSWPI~VSWPL      |               |

\* : Not yet available

1W Order Code (Z1)

1. Pure White (1E,1F,1G,1H,1I,1J)

| Standard Order Codes for pure white |    |     |                   |                   |                   |
|-------------------------------------|----|-----|-------------------|-------------------|-------------------|
| Order Code                          | LF | CC  | V <sub>F</sub>    | Bin Codes         |                   |
| Part No. – 1E                       | U1 | SYP | I<br>J<br>K<br>L  | U1SYPI ~ U1SYPL   |                   |
|                                     |    | SYN |                   | U1SYNI ~ U1SYNL   |                   |
|                                     | U2 | SYP |                   | U2SYPI ~ U2SYPL   |                   |
|                                     |    | SYN |                   | U2SYNI ~ U2SYNL   |                   |
| Part No. – 1F                       | V* | SYP |                   | VSYPI ~ VSYPL     |                   |
|                                     |    | SYN |                   | VSYNI ~ VSYNL     |                   |
| Part No. – 1G                       | U1 | SVM |                   | I<br>J<br>K<br>L  | U1SVM I ~ U1SVM L |
|                                     |    | SVN |                   |                   | U1SVNI ~ U1SVNL   |
|                                     |    | SVO | U1SV0I ~ U1SV0L   |                   |                   |
|                                     | U2 | SVM | U2SVM I ~ U2SVM L |                   |                   |
|                                     |    | SVN | U2SVNI ~ U2SVNL   |                   |                   |
|                                     |    | SVO | U2SV0I ~ U2SV0L   |                   |                   |
| Part No. – 1H                       | V* | SVM | VSVM I ~ VSVM L   |                   |                   |
|                                     |    | SVN | VSVNI ~ VSVNL     |                   |                   |
|                                     |    | SVO | VSV0I ~ VSV0L     |                   |                   |
| Part No. – 1I                       | U1 | SUM | I<br>J<br>K<br>L  |                   | U1SUM I ~ U1SUM L |
|                                     |    | SUN |                   |                   | U1SUNI ~ U1SUNL   |
|                                     |    | SVN |                   |                   | U1SVNI ~ U1SVNL   |
|                                     | U2 | SUM |                   | U2SUM I ~ U2SUM L |                   |
|                                     |    | SUN |                   | U2SUNI ~ U2SUNL   |                   |
|                                     |    | SVN |                   | U2SVNI ~ U2SVNL   |                   |
| Part No. – 1J                       | V* | SUM |                   | VSUM I ~ VSUM L   |                   |
|                                     |    | SUN |                   | VSUNI ~ VSUNL     |                   |
|                                     |    | SVN |                   | VSVNI ~ VSVNL     |                   |

\* : Not yet available

### 1W Order Code (Z1)

**Z Power LED has an order code, use it as follows to purchase.**

- Example: NZ10150 – 1A
  - NZ10150 : Part Number
  - 1A : Order code

You can select PCB type, Lens type and Z-Power LED series number as part number.

### 2. Warm White (1A,1B,1C)

| Standard Order Codes for Warm white |     |     |                  |                 |
|-------------------------------------|-----|-----|------------------|-----------------|
| Order Code                          | LF  | CC  | V <sub>F</sub>   | Bin Codes       |
| Part No. – 1A                       | S2  | SLO | I<br>J<br>K<br>L | S2SLOI ~ S2SLOL |
|                                     |     | SLA |                  | S2SLAI ~ S2SLAL |
|                                     |     | SKA |                  | S2SKAI ~ S2SKAL |
|                                     |     | SKO |                  | S2SKOI ~ S2SKOL |
| Part No. – 1B                       | T1  | SLO | I<br>J<br>K<br>L | T1SLOI ~ T1SLOL |
|                                     |     | SLA |                  | T1SLAI ~ T1SLAL |
|                                     |     | SKA |                  | T1SKAI ~ T1SKAL |
|                                     |     | SKO |                  | T1SKOI ~ T1SKOL |
|                                     | T2  | SLO |                  | T2SLOI ~ T2SLOL |
|                                     |     | SLA |                  | T2SLAI ~ T2SLAL |
|                                     |     | SKA |                  | T2SKAI ~ T2SKAL |
|                                     |     | SKO |                  | T2SKOI ~ T2SKOL |
| Part No. – 1C                       | U1* | SLO | I<br>J<br>K<br>L | U1SLOI ~ U1SLOL |
|                                     |     | SLA |                  | U1SLAI ~ U1SLAL |
|                                     |     | SKA |                  | U1SKAI ~ U1SKAL |
|                                     |     | SKO |                  | U1SKOI ~ U1SKOL |

\* : Not yet available

1W Order Code (Z1)

2. Warm White (1D,1E,1F)

| Standard Order Codes for Warm white |     |     |                  |               |
|-------------------------------------|-----|-----|------------------|---------------|
| Order Code                          | LF  | CC  | V <sub>F</sub>   | Bin Codes     |
| Part No. - 1D                       | S2  | SK0 | I<br>J<br>K<br>L | S2SK0I~S2SK0L |
|                                     |     | SKA |                  | S2SKAI~S2SKAL |
|                                     |     | SJA |                  | S2SJAI~S2SJAL |
|                                     |     | SJ0 |                  | S2SJ0I~S2SJ0L |
| Part No. - 1E                       | T1  | SK0 | I<br>J<br>K<br>L | T1SK0I~T1SK0L |
|                                     |     | SKA |                  | T1SKAI~T1SKAL |
|                                     |     | SJA |                  | T1SJAI~T1SJAL |
|                                     |     | SJ0 |                  | T1SJ0I~T1SJ0L |
|                                     | T2  | SK0 |                  | T2SK0I~T2SK0L |
|                                     |     | SKA |                  | T2SKAI~T2SKAL |
|                                     |     | SJA |                  | T2SJAI~T2SJAL |
|                                     |     | SJ0 |                  | T2SJ0I~T2SJ0L |
| Part No. - 1F                       | U1* | SK0 | I<br>J<br>K<br>L | U1SK0I~U1SK0L |
|                                     |     | SKA |                  | U1SKAI~U1SKAL |
|                                     |     | SJA |                  | U1SJAI~U1SJAL |
|                                     |     | SJ0 |                  | U1SJ0I~U1SJ0L |

\* : Not yet available

1W Order Code (Z1)

2. Warm White (1G,1H,1I)

| Standard Order Codes for Warm white |     |     |                  |                 |
|-------------------------------------|-----|-----|------------------|-----------------|
| Order Code                          | LF  | CC  | V <sub>F</sub>   | Bin Codes       |
| Part No. – 1G                       | S2  | SJ0 | I<br>J<br>K<br>L | S2SJ0I ~ S2SJ0L |
|                                     |     | SJA |                  | S2SJAI ~ S2SJAL |
|                                     |     | SHA |                  | S2SHAI ~ S2SHAL |
|                                     |     | SH0 |                  | S2SH0I ~ S2SH0L |
| Part No. – 1H                       | T1  | SJ0 | I<br>J<br>K<br>L | T1SJ0I ~ T1SJ0L |
|                                     |     | SJA |                  | T1SJAI ~ T1SJAL |
|                                     |     | SHA |                  | T1SHAI ~ T1SHAL |
|                                     |     | SH0 |                  | T1SH0I ~ T1SH0L |
|                                     | T2  | SJ0 |                  | T2SJ0I ~ T2SJ0L |
|                                     |     | SJA |                  | T2SJAI ~ T2SJAL |
|                                     |     | SHA |                  | T2SHAI ~ T2SHAL |
|                                     |     | SH0 |                  | T2SH0I ~ T2SH0L |
| Part No. – 1I                       | U1* | SJ0 | I<br>J<br>K<br>L | U1SJ0I ~ U1SJ0L |
|                                     |     | SJA |                  | U1SJAI ~ U1SJAL |
|                                     |     | SHA |                  | U1SHAI ~ U1SHAL |
|                                     |     | SH0 |                  | U1SH0I ~ U1SH0L |

\* : Not yet available



1W Order Code (Z1)

2. Warm White (1J,1K,1L)

| Standard Order Codes for Warm white |     |     |                  |               |
|-------------------------------------|-----|-----|------------------|---------------|
| Order Code                          | LF  | CC  | V <sub>F</sub>   | Bin Codes     |
| Part No. – 1J                       | S2  | SL1 | I<br>J<br>K<br>L | S2SL1I~S2SL1L |
|                                     |     | SL0 |                  | S2SL0I~S2SL0L |
|                                     |     | SK0 |                  | S2SK0I~S2SK0L |
|                                     |     | SK1 |                  | S2SK1I~S2SK1L |
| Part No. – 1K                       | T1  | SL1 | I<br>J<br>K<br>L | T1SL1I~T1SL1L |
|                                     |     | SL0 |                  | T1SL0I~T1SL0L |
|                                     |     | SK0 |                  | T1SK0I~T1SK0L |
|                                     |     | SK1 |                  | T1SK1I~T1SK1L |
|                                     | T2  | SL1 |                  | T2SL1I~T2SL1L |
|                                     |     | SL0 |                  | T2SL0I~T2SL0L |
|                                     |     | SK0 |                  | T2SK0I~T2SK0L |
|                                     |     | SK1 |                  | T2SK1I~T2SK1L |
| Part No. - 1L                       | U1* | SL1 | I<br>J<br>K<br>L | U1SL1I~U1SL1L |
|                                     |     | SL0 |                  | U1SL0I~U1SL0L |
|                                     |     | SK0 |                  | U1SK0I~U1SK0L |
|                                     |     | SK1 |                  | U1SK1I~U1SK1L |

\* : Not yet available

1W Order Code (Z1)

2. Warm White (1M,1N,1O)

| Standard Order Codes for Warm white |     |     |                  |               |
|-------------------------------------|-----|-----|------------------|---------------|
| Order Code                          | LF  | CC  | V <sub>F</sub>   | Bin Codes     |
| Part No. – 1M                       | S2  | SJ1 | I<br>J<br>K<br>L | S2SJ1I~S2SJ1L |
|                                     |     | SJ0 |                  | S2SJ0I~S2SJ0L |
|                                     |     | SH0 |                  | S2SH0I~S2SH0L |
|                                     |     | SH1 |                  | S2SH1I~S2SH1L |
| Part No. – 1N                       | T1  | SJ1 | I<br>J<br>K<br>L | T1SJ1I~T1SJ1L |
|                                     |     | SJ0 |                  | T1SJ0I~T1SJ0L |
|                                     |     | SH0 |                  | T1SH0I~T1SH0L |
|                                     |     | SH1 |                  | T1SH1I~T1SH1L |
|                                     | T2  | SJ1 |                  | T2SJ1I~T2SJ1L |
|                                     |     | SJ0 |                  | T2SJ0I~T2SJ0L |
|                                     |     | SH0 |                  | T2SH0I~T2SH0L |
|                                     |     | SH1 |                  | T2SH1I~T2SH1L |
| Part No. – 1O                       | U1* | SJ1 | I<br>J<br>K<br>L | U1SJ1I~U1SJ1L |
|                                     |     | SJ0 |                  | U1SJ0I~U1SJ0L |
|                                     |     | SH0 |                  | U1SH0I~U1SH0L |
|                                     |     | SH1 |                  | U1SH1I~U1SH1L |

\* : Not yet available

1W Order Code (Z1)

2. Warm White (1P,1Q,1R)

| Standard Order Codes for Warm White |     |     |                  |                 |
|-------------------------------------|-----|-----|------------------|-----------------|
| Order Code                          | LF  | CC  | V <sub>F</sub>   | Bin Codes       |
| Part No. – 1P                       | S2  | SLA | I<br>J<br>K<br>L | S2SLAI ~ S2SLAL |
|                                     |     | SLB |                  | S2SLBI ~ S2SLBL |
|                                     |     | SKB |                  | S2SKBI ~ S2SKBL |
|                                     |     | SKA |                  | S2SKAI ~ S2SKAL |
| Part No. – 1Q                       | T1  | SLA | I<br>J<br>K<br>L | T1SLAI ~ T1SLAL |
|                                     |     | SLB |                  | T1SLBI ~ T1SLBL |
|                                     |     | SKB |                  | T1SKBI ~ T1SKBL |
|                                     |     | SKA |                  | T1SKAI ~ T1SKAL |
|                                     | T2  | SLA |                  | T2SLAI ~ T2SLAL |
|                                     |     | SLB |                  | T2SLBI ~ T2SLBL |
|                                     |     | SKB |                  | T2SKBI ~ T2SKBL |
|                                     |     | SKA |                  | T2SKAI ~ T2SKAL |
| Part No. – 1R                       | U1* | SLA | I<br>J<br>K<br>L | U1SLAI ~ U1SLAL |
|                                     |     | SLB |                  | U1SLBI ~ U1SLBL |
|                                     |     | SKB |                  | U1SKBI ~ U1SKBL |
|                                     |     | SKA |                  | U1SKAI ~ U1SKAL |

\* : Not yet available

1W Order Code (PZ1)

2. Warm White (1S,1T,1U)

| Standard Order Codes for Warm White |     |     |                  |                 |
|-------------------------------------|-----|-----|------------------|-----------------|
| Order Code                          | LF  | CC  | V <sub>F</sub>   | Bin Codes       |
| Part No. – 1S                       | S2  | SJA | I<br>J<br>K<br>L | S2SJAI ~ S2SJAL |
|                                     |     | SJB |                  | S2SJBI ~ S2SJBL |
|                                     |     | SHB |                  | S2SHBI ~ S2SHBL |
|                                     |     | SHA |                  | S2SHAI ~ S2SHAL |
| Part No. – 1T                       | T1  | SJA | I<br>J<br>K<br>L | T1SJAI ~ T1SJAL |
|                                     |     | SJB |                  | T1SJBI ~ T1SJBL |
|                                     |     | SHB |                  | T1SHBI ~ T1SHBL |
|                                     |     | SHA |                  | T1SHAI ~ T1SHAL |
|                                     | T2  | SJA |                  | T2SJAI ~ T2SJAL |
|                                     |     | SJB |                  | T2SJBI ~ T2SJBL |
|                                     |     | SHB |                  | T2SHBI ~ T2SHBL |
|                                     |     | SHA |                  | T2SHAI ~ T2SHAL |
| Part No. – 1U                       | U1* | SJA | I<br>J<br>K<br>L | U1SJAI ~ U1SJAL |
|                                     |     | SJB |                  | U1SJBI ~ U1SJBL |
|                                     |     | SHB |                  | U1SHBI ~ U1SHBL |
|                                     |     | SHA |                  | U1SHAI ~ U1SHAL |

\* : Not yet available

**AMERICA**

- Los Angeles  
Tel : +1-310-324-7151  
Fax : +1-678-550-8374  
E-mail : karl@acriche.com
  
- Detroit  
Tel : +1-248-649-5381  
Fax : +1-248-649-5541  
E-mail charlie@acriche.com
  
- New Jersey  
Tel : +1-617-869-6779  
Fax : +1-201-585-1711  
E-mail : pcj77@acriche.com
  
- Atlanta  
Tel : +1-201-956-3609  
Fax : +1-201-632-4807  
E-mail :jason@acriche.com
  
- Texas  
Tel : +1-310-324-7151  
Fax : +1-678-550-8374  
E-mail : karl@acriche.com

**EUROPE**

- Frankfurt, Germany  
(Seoul Semiconductor Europe GmbH)  
Tel : +49-69716-750111  
Fax : +49-69716-750120  
E-mail : dykim@acriche.com
  
- Düsseldorf, Germany  
(Branch of Seoul Semiconductor Europe GmbH)  
Tel : +49-211-507-385-2  
E-mail : andrew@acriche.com
  
- Nuremberg, Germany  
(Branch of Seoul Semiconductor Europe GmbH)  
Tel : +49-911999-5860  
Fax : +49-911999-5865  
E-mail : info@seoul-semicon.de

- London, UK  
Tel : + 44-1256-818004  
E-mail :elliet@acriche.com
  
- Manchester, UK  
Tel : +44-1229-861-104  
E-mail : richard@acriche.com
  
- Copenhagen, Denmark  
Tel : +45-3512-5081  
E-mail : bchyun@acriche.com
  
- Rotterdam, Netherlands  
Tel. : +31-10-251-8668  
Fax : +31-10-251-8669  
E-mail : wim@seoulsemicon.nl
  
- Paris, France  
Tel : +33-671-461-341  
Fax : +33-1-6980-9269  
E-mail : italia@seoulsemicon.it
  
- Milan, Italy  
Tel : +39-039-599-503  
Fax : +39-039-598-4930  
E-mail : italia@seoulsemicon.it
  
- Madrid, Spain  
Tel : +34-91-268-7694  
Fax : +34-91-268-7694  
E-mail italia@seoulsemicon.it
  
- Warsaw, Poland  
Tel : +48-22-498-75-10  
Fax : +48-22-435-51-44  
E-mail : jhnam@acriche.com



**JAPAN**

- Tokyo  
Tel: +81-3-5360-7620  
Fax : +81-3-5360-7622  
E-mail : smyi@acriche.com
  
- Nagoya  
Tel : +81-52-251-1861  
Fax : +81-52-784-5888  
E-mail : b2yttark@acriche.com

**CHINA**

- Shanghai  
Tel : +86-21-3223-0032  
Fax : +86-21-6208-5754  
E-mail : Johnsun82@acriche.com
  
- Shenzhen  
Tel : +86-755-8204-2307  
Fax : +86-755-8204 7531  
E-mail : kevin@acriche.com
  
- Taiwan  
Tel : +886-28226-7678  
Fax : +886-28226-6211  
E-mail : peter@acriche.com

**ASIA**

- Singapore  
Tel : +65-6853-9593  
Fax : +65-6853-9591  
E-mail : sansanaw@acriche.com
  
- New Delhi, India  
Tel : +91-98711-55223  
Fax : +91-11-2989-3764  
E-mail : gopal.shukla@acriche.com
  
- Mumbai, India  
Tel : +91-98333-94060  
E-mail : kuldeep.gupta@acriche.com

**HEAD OFFICE**

Tel : +82-31-364-3789  
Fax : +82-2-6915-7776