SEOUL SEMICONDUCTOR

Application Note 1-1

Z-POWER LED series
Binning and Labeling

P5-II

Features

- Super high Flux output and high Luminance
- Designed for high current operation
- Low thermal resistance
- SMT solderability
- Lead Free product
- RoHS compliant
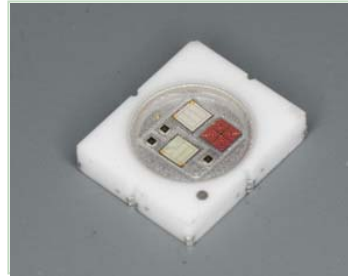
Z-Power series is designed for high current operation and high flux output applications.

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

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

Full color Z-Power LED is using 3 RGB power chips and rendering 7colors.

In case of the full color product used in architectural lighting or decoration, it emits 7colors in one package so that it can render a clear mixed color when it is mixed with other colors.

Applications

- Mobile phone flash
- Automotive interior / exterior lighting
- Automotive signal lighting
- Automotive forward lighting
- 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 : Z-Power LED series number

- X_3 : LENS type

- X_4 : Chip quantity (or Power Dissipation)

- X_5 : Package outline size

- X_6 : Type of PCB

2. Internal Number

- $X_7,$ X_8 : Revision No.

3. Code Labeling

- X_9 : Luminous flux (Red)

- X_{10} : Luminous flux (Blue)

- X_{11}: Luminous flux (Green)

- X_{12} : Dominant Wavelength (Red)

- X_{13} : Dominant Wavelength (Blue)

- X_{14} : Dominant Wavelength (Green)

4. Sticker Diagram on Reel & Aluminum Vinyl Bag

RANK : $X_9 X_{10} X_{11} X_{12} X_{13} X_{14}$

QUANTITY : 500

LOT NUMBER : XXXXXXXXXX-XXX-XXX-XXXXXXX

SSC PART NUMBER : XXXXXXX-XX

$X_1 X_2 X_3 X_4 X_5 X_6 - X_7 X_8$

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

Code Labeling

P5-II has a separate labeling system independent of the other Z-Power series.

Test condition is IF = 350㎃ at room temperature (T_A = 25 ℃).

1. Luminous Flux

1) Red

Bin Code	Luminous Flux [lm]
Q	32.0 ~ 38.0
R	38.0~54.0

2) Blue

Bin Code	Luminous Flux [lm]
L	11.0 ~ 18.0
O	18.0 ~ 24.5

3) Green

Bin Code	Luminous Flux [lm]
S	54.0 ~ 70.0
T	70.0 ~ 91.0

Tolerance : ±10% of Luminous flux value

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.

2. Dominant Wavelength

P5-II series are tested and binned for dominant wavelength (blue, green, red)

1) Red

Bin Code	Dominant Wavelength [nm]
R	618 ~ 629

2) Blue

Bin Code		Dominant Wavelength [nm]
B	B1	455 ~ 460
	B2	460 ~ 465

3) Green

Bin Code		Dominant Wavelength [nm]
F		519 ~ 525
G	G1	525 ~ 527.5
	G2	527.5~ 530
H		530 ~ 535

Tolerance

Dominant wavelength : ± 0.5 nm

3. Forward Voltage

Color	Forward Voltage [V]
Red	2.00 ~ 3.00
Green	3.00 ~ 4.20
Blue	3.00 ~ 4.10

Tolerance : ±0.06V

No further forward voltage binning available

Binning

P5-II has bins, use it as follows to purchase..

Luminous Flux			Dominant Wavelength		Allowed Bin Codes
Red	Blue	Green	Blue	Green	
Q	L	S	B	F	QLSRBF
			B	G	QLSRBG
			B	H	QLSRBH
		T	B	F	QLTRBF
			B	G	QLTRBG
			B	H	QLTRBH
R	L	S	B	F	RLSRBF
			B1	G1	RLSRB1G1
			B1	G2	RLSRB1G2
			B2	G1	RLSRB2G1
			B2	G2	RLSRB2G2
			B	H	RLSRBH
		T	B	F	RLTRBF
			B1	G1	RLTRB1G1
			B1	G2	RLTRB1G2
			B2	G1	RLTRB2G1
			B2	G2	RLTRB2G2
			B	H	RLTRBH
Q	O	S	B	F	QOSRBF
			B	G	QOSRBG
			B	H	QOSRBH
		T	B	F	QOTRBF
			B	G	QOTRBG
			B	H	QOTRBH
R	O	S	B	F	ROSRBF
			B1	G1	ROSRB1G1
			B1	G2	ROSRB1G2
			B2	G1	ROSRB2G1
			B2	G2	ROSRB2G2
			B	H	ROSRBH
		T	B	F	ROTRBF
			B1	G1	ROTRB1G1
			B1	G2	ROTRB1G2
			B2	G1	ROTRB2G1
			B2	G2	ROTRB2G2
			B	H	ROTRBH