



Bull Will has established since 1994 and it overcomes every hurdle cautiously in extremely steady pace.

Consistent improvement in R&D is our mission. We count on our professional, and enthusiastic team to complete our mission. Bull will makes every endeavor to solve every client's problems and provides our best services.

Bull Will prospect to be the world-leading vendor of surface mount device LEDs, supporter of technical solutions and provider of superior customer service.

■ **Complete product lines, including new products**

- 1 *the smallest commercial SMD LEDs.*
- 2 *the most compact 3-in-1 RGB SMD LEDs.*
- 3 *the most efficient high-current SMD LEDs.*

■ **Of customer satisfaction, the efficacy arises from**

- 1 *Experienced in SMD LED mass production.*
- 2 *Professional in SMD LED quality control.*
- 3 *Familiar with customer application.*
- 4 *Proficient in material characteristics.*
- 5 *Sufficient capacity for customer request.*
- 6 *Excellent customer service.*

***Undoubtedly, Bull Will is the second to none choice for being your business partner.***

## SMD SURFACE MOUNT CHIP LED

Series	Size ( L x W x H ) Unit : mm	Description
BW - 110	3.2 x 1.5 x 1.0 (right angle)	SINGLE Chip
BW - 104	3.8 x 1.1 x 0.4 (right angle)	SINGLE Chip
BW - 107	4.1 x 1.4 x 0.8 (right angle )	SINGLE Chip
BW - 108	2.8 x 1.2 x 0.8 (right angle)	SINGLE Chip
BW - 109	3.8 x 1.2 x 0.6 (right angle)	SINGLE Chip
BW - 190	1.6 x 1.0 x 0.6 (right angle)	SINGLE Chip
BW - 132	3.0 x 2.0 x 1.0 (0804)	SINGLE Color
BW - 150	3.2 x 1.6 x 1.1 (1206)	SINGLE Color
BW - 171	2.0 x 1.25 x 0.8 (0805)	SINGLE Color
BW - 191	1.6 x 0.8 x 0.6 (0603)	SINGLE Color
BW - 192	1.6 x 0.8 x 0.4 (0603)	SINGLE Color
BW - 380	3.5 x 2.8 x 1.8 (1412)	SINGLE Color
BW - 928	9.0 x 2.0 x 1.3 (3608)	SINGLE Color
BW - 770	7.0 x 7.0 x 1.0 (2828)	SINGLE Color
BW - 155	3.2 x 2.7 x 1.1 (1210)	DUAL Chip
BW - 292	1.6 x 0.8 x 0.4 (0603)	DUAL Chip
BW - 210	3.2 x 1.5 x 1.0 (1204)	DUAL Chip
BW - 311	3.2 x 1.5 x 1.0 (1204)	TRIPLE Chip
BW - 350	3.0 x 1.5 x 0.7 (1206)	TRIPLE Chip
BW - 383	3.5 x 2.8 x 1.8 (1412)	TRIPLE Chip
BW - 391	1.6 x 1.5 x 0.6 (0606)	TRIPLE Chip
BW - 583	3.5 x 2.8 x 1.4 (1412)	TRIPLE Chip
BW - 683	5.5 x 5.0 x 1.9 (2020)	TRIPLE Chip

### SINGLE Chip

## BW-□ 110 BL-CT

1	2	3	4	5	6
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1: Bull Will      2: Frame Type      3: Serial Number  
4: Emitting Color      5: Epoxy Color      6: Packaging

### Serial Number

Number	Length x Width x Height	Inch
110	3.2 x 1.5 x 1.0 mm (right angle)	
104	3.8 x 1.1 x 0.4 mm (right angle)	
107	4.1 x 1.4 x 0.8 mm (right angle)	
108	2.8 x 1.2 x 0.8 mm (right angle)	
109	3.8 x 1.2 x 0.6 mm (right angle)	
190	1.6 x 1.0 x 0.6 mm (right angle)	

### Frame Type

□ : PCB Frame  
R : PCB right angle

### Packaging

T : Taping & Reel  
□ : Bulk

### Epoxy Color

C : Clear  
D : Diffused

## BW-□ 192 BL-CT

1	2	3	4	5	6
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1: Bull Will      2: Frame Type      3: Serial Number  
4: Emitting Color      5: Epoxy Color      6: Packaging

### Serial Number

Number	Length x Width x Height	Inch
132	3.0 x 2.0 x 1.0 mm (0804)	
150	3.2 x 1.6 x 1.1 mm (1206)	
171	2.0 x 1.25 x 0.8 mm (0805)	
191	1.6 x 0.8 x 0.6 mm (0603)	
192	1.6 x 0.8 x 0.4 mm (0603)	
380	3.5 x 2.8 x 1.8 mm (1412)	
928	9.0 x 2.0 x 1.3 mm (3608)	
770	7.0 x 7.0 x 1.0 mm (2828)	

### Frame Type

□ : PCB Frame  
H : High power

### Packaging

T : Taping & Reel  
□ : Bulk

### Epoxy Color

C : Clear  
D : Diffused

### Emitting Color

URO	Ultra Bright Red / 630nm
USD	Ultra Bright Orange / 625nm
UD	Ultra Bright Amber / 605nm
UY	Ultra Bright Yellow / 590nm
UYG	Ultra Bright Yellow Green / 572nm
YG	Yellow Green / 570nm
GR	Clear Green / 525nm
WT	(X,Y)=(0.29,0.31)
BL	Blue / 470nm
CBS	Light Blue / 430nm



# SURFACE MOUNT LED

## DUAL Chip

# BW-155 UD/YG-DT



1: Bull Will    2: Serial Number    3: Emitting Color  
4: Epoxy Color    5: Packaging

### Serial Number

Number	Length x Width x Height	Inch
155	3.2x2.7x1.1mm (1210)	
292	1.6x0.8x0.4mm (0603)	
210	3.2 x 1.5 x 1.0mm (1204)	

### Emitting Color

URO /YG	Ultra Bright Red 630nm / Ultra Bright Yellow Green 570nm
UD /YG	Ultra Bright Amber 610nm / Ultra Bright Yellow Green 570nm
UY /YG	Ultra Bright Yellow 590nm / Ultra Bright Yellow Green 570nm
GR / BL	Clear Green 525nm / Blue 470nm

### Frame Type

: PCB Frame

### Packaging

T : Taping & Reel

: Bulk

### Epoxy Color

C : Clear

D : Diffused

## TRIPLE Chip

# BW-311 RRGB-CT



1: Bull Will    2: Serial Number    3: Emitting Color  
4: Epoxy Color    5: Packaging

### Serial Number

Number	Length x Width x Height	Inch
311**	3.2 x 1.5 x 1.0 mm(right angle) (1204)	
350	3.0 x 1.5 x 0.7 mm (1206)	
383	3.5 x 2.8 x 1.8 mm (1412)	
391	1.6 x 1.5 x 0.6 mm (0606)	
583	3.5 x 2.8 x 1.4 mm (1412)	
683	5.5 x 5.0 x 1.9 mm (2020)	

### Emitting Color

RRGB	Red 633nm / Clear Green 525 nm / Blue 470nm
WT	(X,Y)=(0.29,0.30)

### Frame Type

: PCB Frame

### Packaging

T : Taping & Reel

: Bulk

### Epoxy Color

C : Clear

D : Diffused