Reference Module - Industrial Series

The Industrial Series utilizes Seoul's flagship high efficacy 5630 LEDs to deliver efficacies up to 194 Lm/W at typical driving currents with typical flux values of 9700 lumens. This solution features uniformity of light and color and enables easy installation with a Zhaga compatible mounting pattern.

Applications:

Features:

- High efficacy, long life
- Industry standard mechanical attributes
- Optimized for industry standard power supplies
- 3 SDCM
- ROHS Compliant
- Both 560mm and 1120mm lengths avilable

Key Applications:

- Troffer Retrofit
- High Bay
- LED Panel
- Channel

Product Selection: SMJD-3624144B-XXN1 I_F = 660mA, T_c= 25°C

CCT	CRI	Flux		Dimension	Order Code
		Min.	Typ.		
3000	80	3950	4250	560*20	SMJD-3624144B-XXN1 00E25G038AII
3500					SMJD-3624144B-XXN1 00E25F038AII
4000		4040	4350		SMJD-3624144B-XXN1 00E35E038AII
5000					SMJD-3624144B-XXN1 00E35C038AII

Product Selection: SMJD-4253182B-XXN1 I_F = 1300mA, T_c= 25°C

CCT	CRI	Flux		Dimension	Order Code
		Min.	Typ.		
3000	80	8790	9450	1120*20	SMJD-4253182B-XXN1 00J45G038AII
3500					SMJD-4253182B-XXN1 00J45F038AII
4000		9020	9700		SMJD-4253182B-XXN1 00J70E038AII
5000					SMJD-4253182B-XXN1 00J70C038AII

Electro Optical Characteristics: SMJD-3624144B-XXN1 I_F = 660mA, T_c= 25ºC

Parameter	Symbol	Value			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux	Φ_V [2]	3950	4250	-	lm	F,G
		4040	4350	-		C,E
Correlated Color Temperature [3]	CCT	4745	5028	5311	K	C
		3710	3985	4260		E
		3200	3500	3700		F
		2870	3045	3220		G
CRI	Ra	80	-	-	-	-
Input Voltage	V_F	32.8	34	35.2	V_{DC}	@660mA
Power Consumption	P	21.6	22.4	23.2	W	
Efficiency	LPW	-	189	-	Lm/W	F,G
		-	194	-		C,E

Electro Optical Characteristics: SMJD-4253182B-XXN1 I_F = 1300mA, T_c= 25ºC

Parameter	Symbol	Value			Unit	Remark
		Min.	Typ.	Max.		
Luminous Flux	Φ_V [2]	8790	9450	-	lm	F,G
		9020	9700	-		C,E
Correlated Color Temperature [3]	CCT	4745	5028	5311	K	C
		3710	3985	4260		E
		3200	3500	3700		F
		2870	3045	3220		G
CRI	Ra	80	-	-	-	-
Input Voltage	V_F	40	41.5	43	V_{DC}	@1300mA
Power Consumption	P	52	54	55.9	W	
Efficiency	LPW	-	175	-	Lm/W	F,G
		-	180	-		C,E

Notes:

[1] Above data tested with constant typical current at T_c = 25ºC.

[2] Φ_V is the total luminous flux output measured with an integrated sphere.

[3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.

[4] To use the module properly, recommend to drive the module by a Constant Current Source (CCS). But the Maximum output voltage of the CCS should be limited by referring this sheet.

Absolute Maximum Operating Specification: T_c=25ºC

Model	Parameter	Symbol	Unit	Value	Remark
SMJD-3624144B-XXN1	Power Consumption	P	W	62	
	Forward Voltage	V_F	V	37.3	
	Driving Current [2]	I_F	mA	1650	
SMJD-4253182B-XXN1	Power Consumption	P	W	79	
	Forward Voltage	V_F	V	43.5	
	Driving Current [2]	I_F	mA	1820	
All	Operating Temperature [3]	T_C	°C	-40 ~ 100	Reference point
	Storage Temperature	T_{ctg}	°C		With no power
	Thermal resistance (T_c to base)	$R_{th\ (Tc\text{-}base)}$	°C/W	0.3	
	ESD Sensitivity	-	KV	±8	IEC Air
				±4	HBM

Notes:

[1] Above data tested with constant typical current at T_c = 25ºC.

[2] Φ_V is the total luminous flux output measured with an integrated sphere.

[3] Correlated Color Temperature is derived from the CIE 1931 Chromaticity diagram.

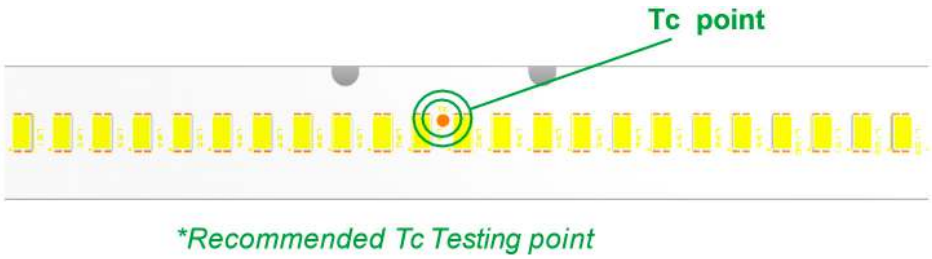
[4] To use the module properly, recommend to drive the module by a Constant Current Source (CCS). But the Maximum output voltage of the CCS should be limited by referring this sheet.

Notes:

**Colors fully compliant with the CIE requested color temperatures on the following table:*

Correlated Color Temperature	Nominal CCT	CCT (K)
C	5000 K	5028 ± 283
E	4000 K	3985 ± 275
F	3500 K	3465 ± 245
G	3000 K	3045 ± 175

Illustration: How to predict components temperature



Notes:

[1] All guarantee are based on the Absolute Maximum Ratings listed.

[2] For SMJD-3624144B-XXN1 , please use a Constant Current Source (CCS) to drive the module, the typical V_F of module is 34 VDC and V_{F_MAX} is 35.2 $V_{DC,}$ respectively.

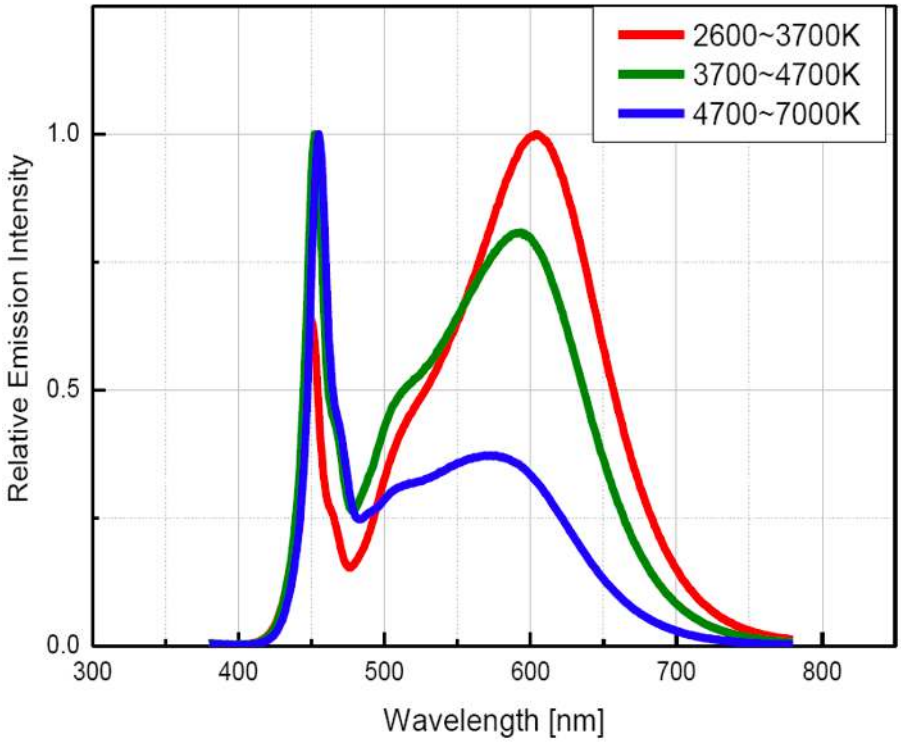
[3] For SMJD-4253182B-XXN1, please use a Constant Current Source (CCS) to drive the module, the typical V_F of module is 41.5 VDC and V_{F_MAX} is 43 $V_{DC,}$ respectively.

[4] Operating temperature was tested at the assigned Tc point on the PCB.

[5] To ensure the module works properly, T_c should refer to "Absolute Maximum Operating Specification".

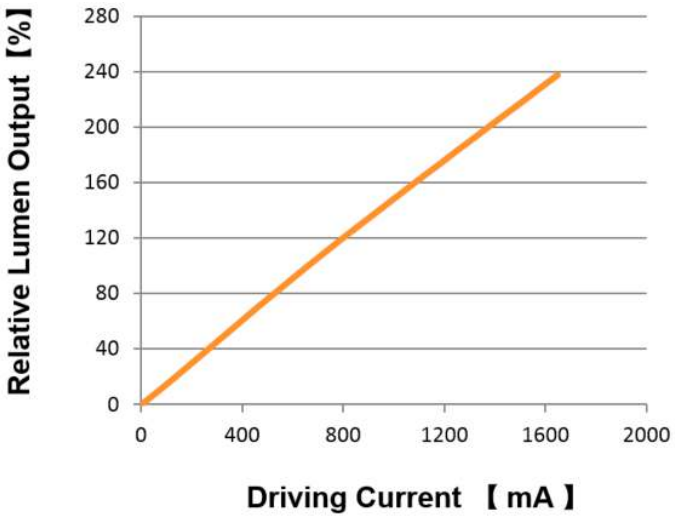
Relative Spectral Distribution

• Relative Spectral Distribution vs. Wavelength

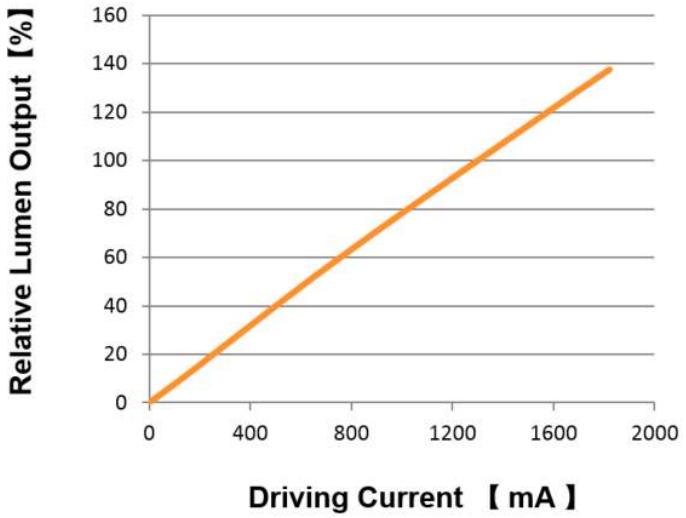


Scale ratio curve for related lumen output VS driving current, T_c = 25ºC

SMJD-3624144B-XXN1

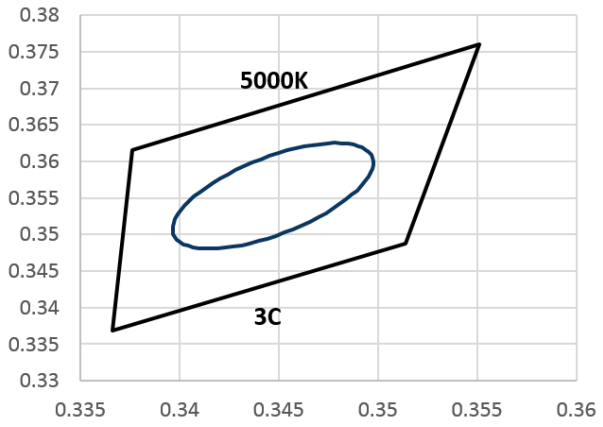


SMJD-4253182B-XXN1



Color Bin Structure

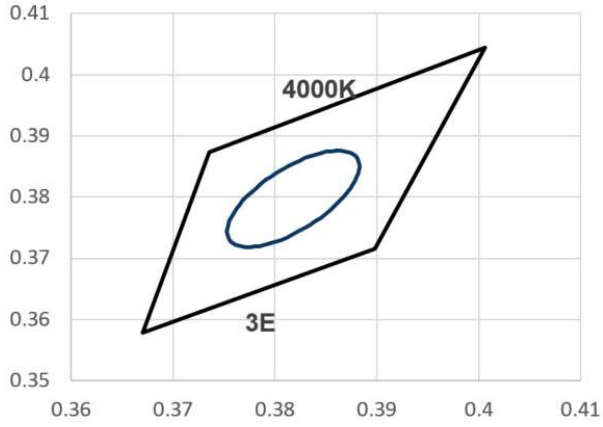
CIE Chromaticity Diagram (Cool white), T_c=25°C



5000K 3 Step Ellipse

3C				
x	y	a	b	theta
0.3447	0.3553	0.0081	0.0035	60

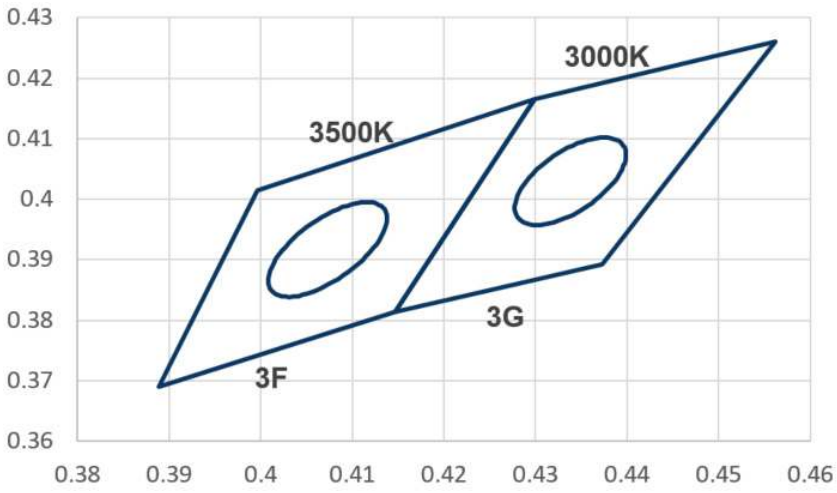
CIE Chromaticity Diagram (Nature white), T_c=25°C



4000K 3 Step Ellipse

3E				
x	y	a	b	theta
0.3818	0.3797	0.0094	0.004	53

CIE Chromaticity Diagram (Warm white), T_c=25°C



3500K 3 Step Ellipse

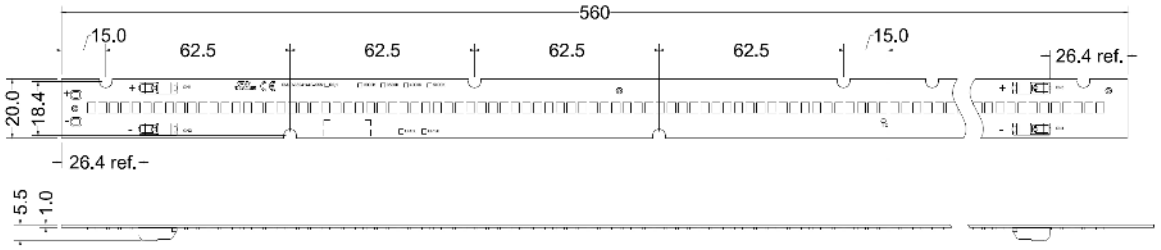
3F				
x	y	a	b	theta
0.4073	0.3917	0.0093	0.0041	53

3000K 3 Step Ellipse

3G				
x	y	a	b	theta
0.4338	0.4030	0.0085	0.0041	53

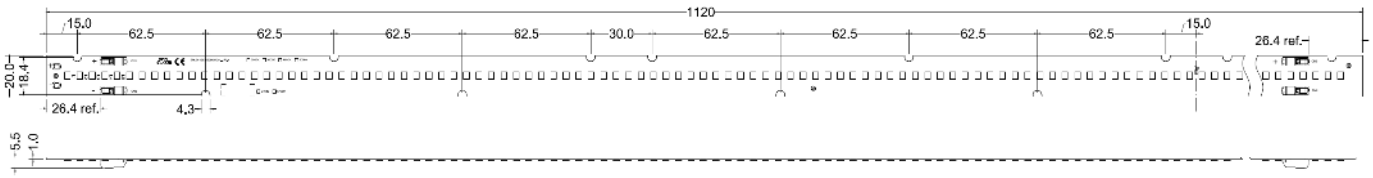
Mechanical Dimensions

SMJD-3624144B-XXN1



Dimension	Specification	Tolerance	Unit
Module Length	560	±0.5	mm
Module Width	20	±0.3	
Module Height	5.5	±0.3	
PCB Thickness	1	±0.1	

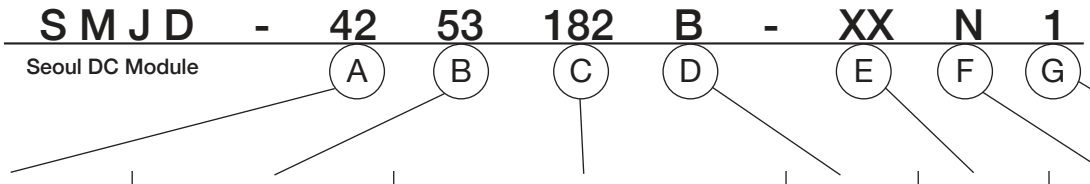
SMJD-4253182B-XXN1



Dimension	Specification	Tolerance	Unit
Module Length	1120	±0.6	mm
Module Width	20	±0.3	
Module Height	5.5	±0.3	
PCB Thickness	1	±0.1	

Product Nomenclature:

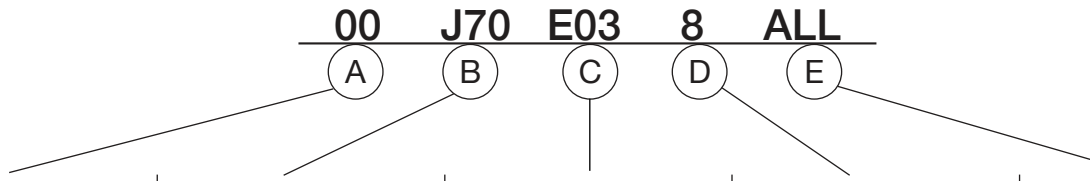
**Please refer to the following chart*



Voltage		Power		LED Qty			Type	Custom	Dimming	Etc
4	2	5	3	1	8	2	B	XX	N	1
0 *0V*	**0** *0V*	**0** *0W*	**0** *0W*	**0** *0ea*	**0** *0ea*	**0** *0ea*	**B** *5630D*	**XX** *ref*	**N** *Norm*	**1** *vers*
1 *10V*	**1** *1V*	**1** *10W*	**1** *1W*	**1** *100ea*	**1** *10ea*	**1** *1ea*			**D** *Dim*	
2 *20V*	**2** *2V*	**2** *20W*	**2** *2W*	**2** *200ea*	**2** *20ea*	**2** *2ea*			**E** *etc*	
3 *30V*	**3** *3V*	**3** *30W*	**3** *3W*	**3** *300ea*	**3** *30ea*	**3** *3ea*				
-	-	-	-	-	-	-				
9 *90V*	**9** *9V*	**9** *90W*	**9** *9W*	**9** *900ea*	**9** *90ea*	**9** *9ea*				
A *100V*		**A** *100W*		**A** *1000ea*						
B *110V*		**B** *110W*		**B** *1100ea*						
-		-		-						
Z *350V*		**Z** *350W*		**Z** *3500ea*						

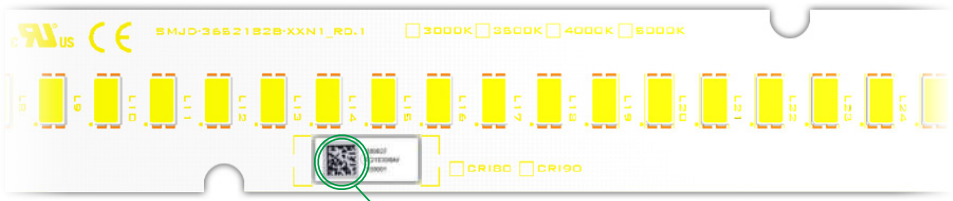
Product Nomenclature: Binning

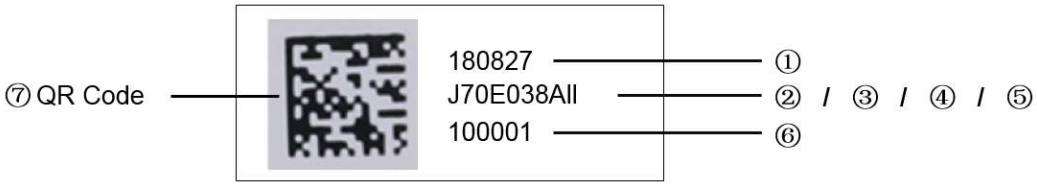
**Please refer to the following chart*



Lens Type	Flux Bin	CCT Bin	CRI Bin	VF Bin
00	J70	E03	8	ALL
00 *No Lens*	**J70** *9700 lm*	**G03** *3000k - 3 step*	**8** *CRI 80*	**All** *40 ~ 43V$_{DC}$*
	J45 *9450 lm*	**F03** *3500k - 3 step*		
		E03 *4000k - 3 step*		
		C03 *5000k - 3 step*		

Marking Information





No.	Item	Information	Digits	Remark
①	Date	YYMMDD	6 Digit	SMT date
②	Flux(1)	J70	3 Digit	J70=9700lm
③	CCT	X03 | 3-step Mixing	3 Digit	X=C,E,F,G
④	CRI	8	1 Digit	CRI=80
⑤	V_F	All	3 Digit	
⑥	Lot No.	1	1 Digit	0~9,A~Z
	Sequence No.	00001	5 Digit	00001 ~ 99999
⑦	QR Code	QR Code	-	Please refer to below table

Note:

**Flux Bin - please refer to following chart for definitions:*

Flux Bin Definitions

Symbol	lm	Symbol	lm	Symbol	lm	Symbol	lm
A50	500	D50	3500	G50	6500	J50	9500
B50	1500	E50	4500	H50	7500	K20	10200
C50	2500	F50	5500	I50	8500	L00	11000

Module QR Code Information

QR Code Information								
Items	Factory	SAP Code	SMT Date	MP Information	Line No.	Lot No.	Product	Note
Digits	1 Digit	7 Digits	6 Digits	10 Digits	1 Digit	1 Digit	5 Digits	Total count is 31 Digits
Information	*	*******	YYMMDD	J70E038ALL	1~9, A~Z	1~9, A~Z	00001	

Notes:

[1] The QR code information is comprised of characters explained in the table above.

[2] The size of the QR code shall be no smaller than 4.5mm x 4.5mm and have a minimum QR code grade of 'C'. Please note that QR code grade 'A' is preferred.

[3] If the component is too small to have a full label, the QR code may be printed on a label with a minimum size of 6mm X 6mm.

[4] The length of the QR code is 31 digits and includes all characters combined without spaces.
Example: ********180827J70E038ALL1100001

Label Information

Model No.	SMJD-4253182B-XXN1[1]
Rank	J70E038ALL[2]
Type	Standard
Quantity	XXX
Lot No.	YYMDDXXXX- XXXXXXX[3]
SEOUL	SEOUL SEMICONDUCTOR CO.,LTD.

Notes:

[1] & [2] Please refer to page 8

[3] Initial of manufacture is refer to the 2D code rule.

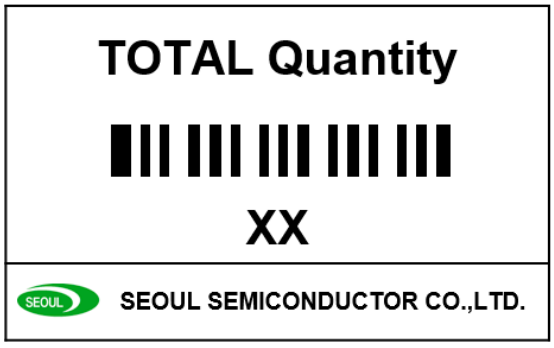
YYMDD : Packing Date (Oct. : A, Nov. : B, Dec. : C)

X = Initial of Manufacturer

XXXX = Sealing Pack No.

XXXXXXX = SSC Code

[4] It is attached to the top left corner of the carton box

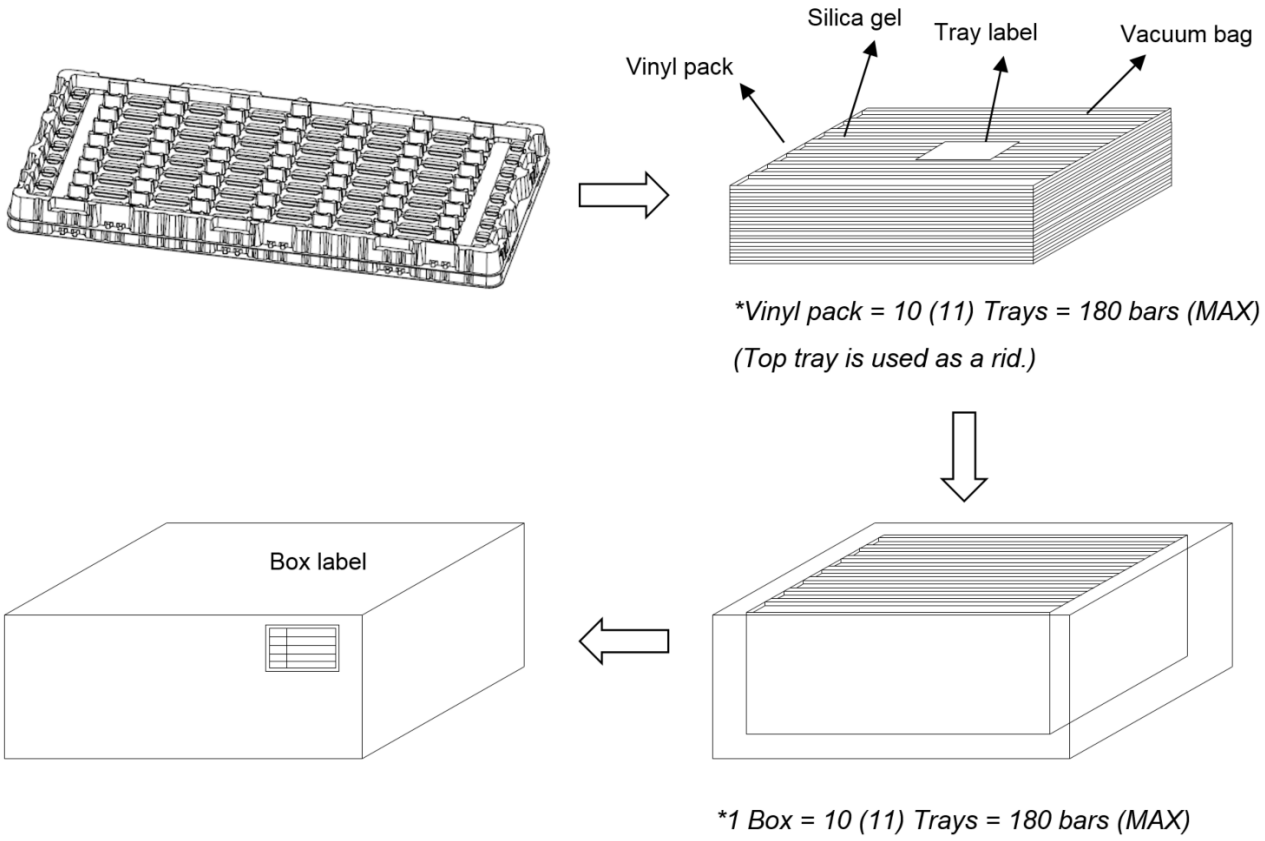


Notes:

[1] Attached to the bottom right corner of the carton box.

Packaging Specification

Model	Tray		Box		Pallet	
	Size (mm)	Q'ty per tray	Size (mm)	Q'ty per box	Size (mm)	Q'ty per pallet
SMJD-3624144B-XXN1	610*300*30	18	625*315*215	180	1000*1000	3600
SMJD-4253182B-XXN1	1230*285*30	16	1245*300*133	80	1300*1100	1920



*Vinyl pack = 10 (11) Trays = 180 bars (MAX)
(Top tray is used as a rid.)

*1 Box = 10 (11) Trays = 180 bars (MAX)

Storage before use

1. When storing devices for a long period of time before usage, please following these guidelines.
   - *The devices should be stored in the anti-static bag that it was shipped in from Seoul-Semiconductor with opening*
   - *If the anti-static bag has been opened, re-seal preventing air and moisture from being present in the bag.*

SEOUL SEMICONDUCTOR

Company Information

Seoul Semiconductor (SeoulSemicon.com) manufacturers and packages a wide selection of light emitting diodes (LEDs) for the automotice, general illumination/ lighting, appliance, signage and back lighting markets. The company is the world's fifth largest LED supplier, holding more than 10,000 patents globally, while offering a wide range of LED technology and production capacity in areas such as "nPola", deep UV LEDs, "Acrich", the world's first commercially produced AC LED, and "Acrich MJT - Multi-Junction Technology", a proprietary family of high-voltage LEDs. The company's broad product portfolio includes a wide array of package and device choices such as Acrich, high-brightness LEDs, mid-power LEDs, side-view LEDs, through-hole type LED lamps, custom displays, and sensors. The company is vertically integrated from epitaxial growth and chip manufacture in it's fully owned subsidary, Seoul Viosys, through packaged LEDs and LED modules in three Seoul Semiconductor manufacturing facilities. Seoul Viosys also manufactures a wide range of unique deep-UV wavelength devices.

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