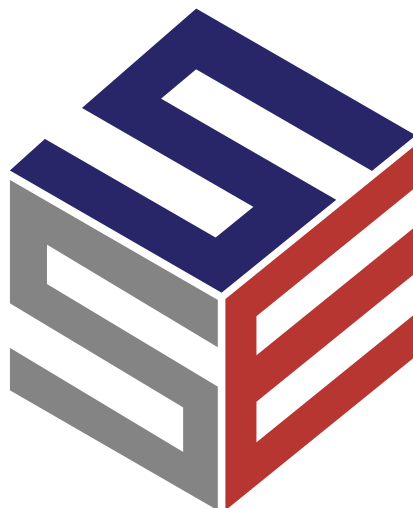


SEHP35 LED Package of Specifications



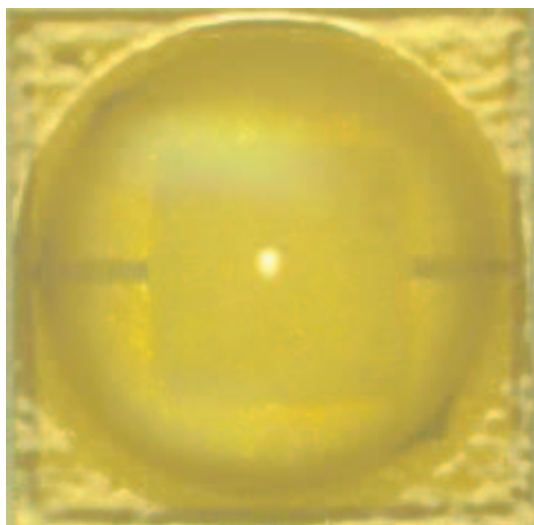
Sunshine Electronics Trading Limited

Product : SEHP35

Version : v1.2

Date : 2019/07/30

SEHP35



Product Features & Applications

- High efficacy for cost effective solutions
- Optimized for optical design and provide
- High quality lighting solution
- MSL1
- Outdoor lighting
- Indoor Lighting
- Downlight
- Spotlight
- Revelation Light
- Street Light

Product Specification

CCT	CRI Typ. @350mA	Flux		Forward Voltage		View Angle Typ.	Thermal Resistance Typ.
		Typ. @350mA	Typ. @700mA	Typ. @350mA	Max. @350mA		
3000K	70	158	286	2.9V	3.15V	130°	5.5°C/W
4000K	70	161	291	2.9V	3.15V	130°	5.5°C/W
5000K	70	163	293	2.9V	3.15V	130°	5.5°C/W

Notes:

1. The viewing angle is 50% center light intensity angle, Optical simulation software light source data of ProSource\Lighttools\TrasePro\ASAP\Zemax etc can be provided;
2. SEL maintains a testing tolerance of $\pm 7\%$ on flux and power measurements, ± 0.007 on chromaticity (CCx, CCy), ± 3 on CRI measurements, Voltage, $\pm 0.1V$ on voltage testing

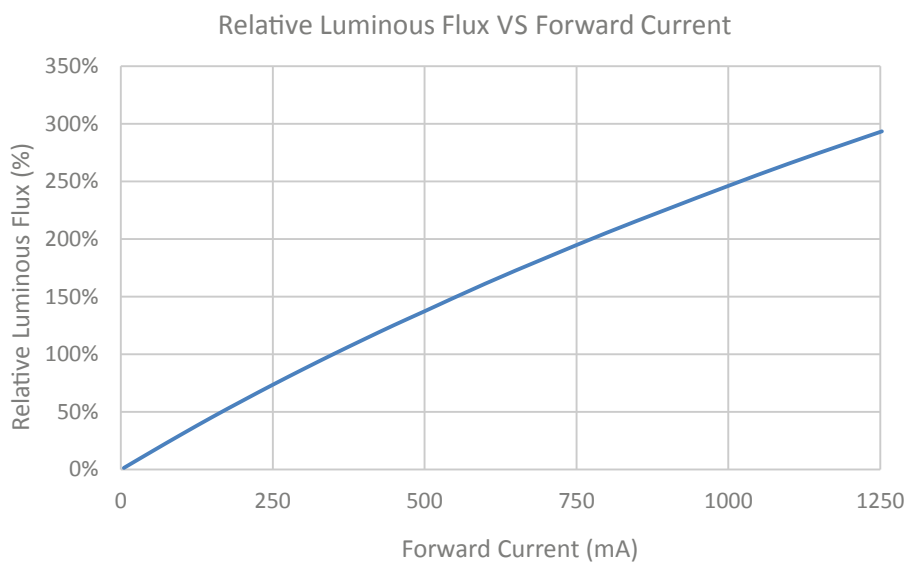
Absolute Maximum Ratings

Item	Symbol	Absolute Maximum Rating
Junction Temperature (°C)	T_j	135°
Operating Temperature (°C)	T_{op}	-40°C - 120°C
Storage Temperature (°C)	T_{stg}	-40°C - 120°C
Forward Current	I_F	1250mA
Pulse Forward Current	I_{FM}	1500mA
Reverse Voltage	V_R	No Reverse Operation Design
Electrostatic Discharge	ESD (HBM)	8000V

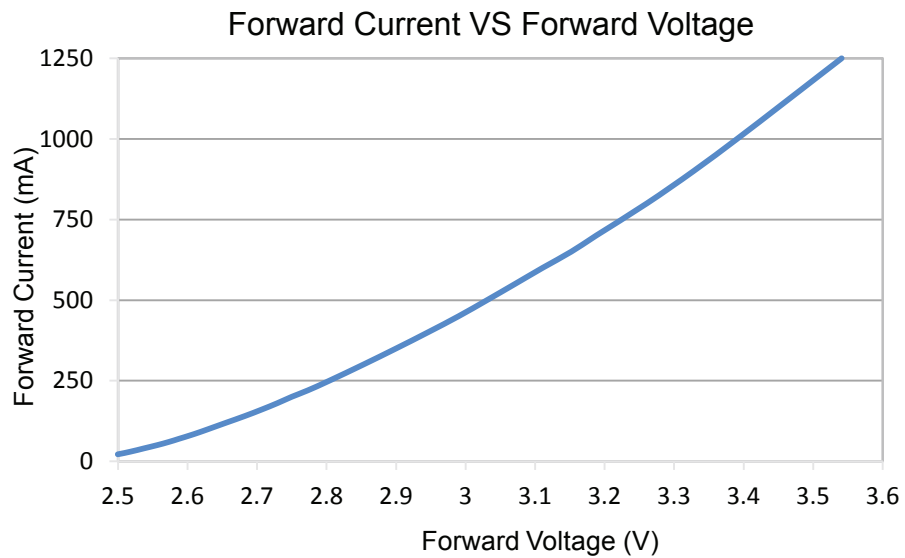
Notes:

1. Maximum Forward Current and Maximum Pulse Current require the junction temperature to be lower than the rated junction temperature;
2. IFM condition Pulse width at 50ms and duty cycle at 0.016;
3. Built-in ESD protection diode.

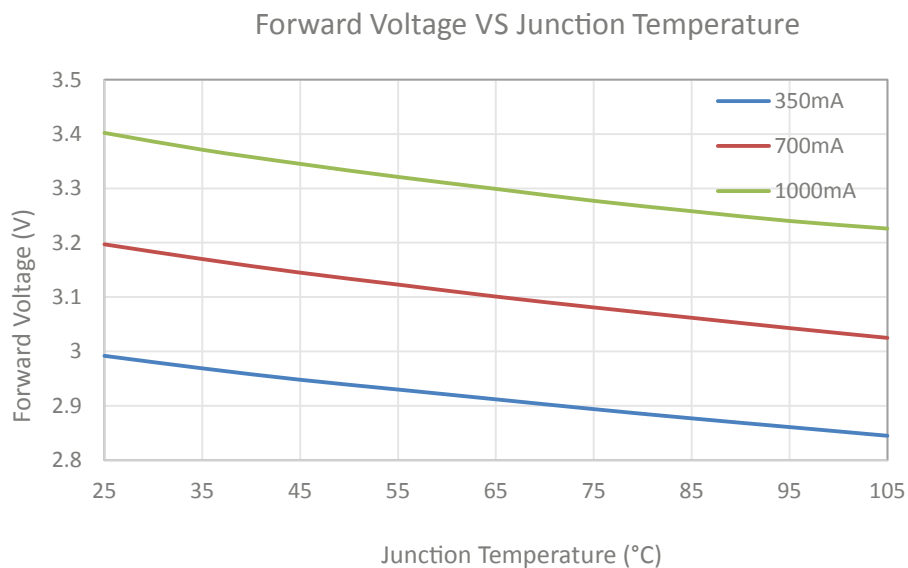
Product Characteristic Curve



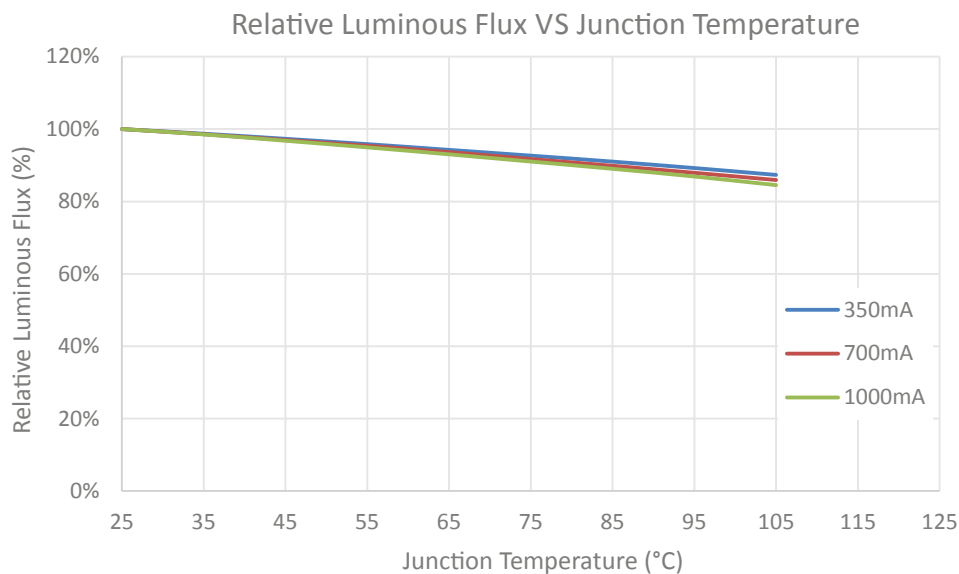
Product Characteristic Curve



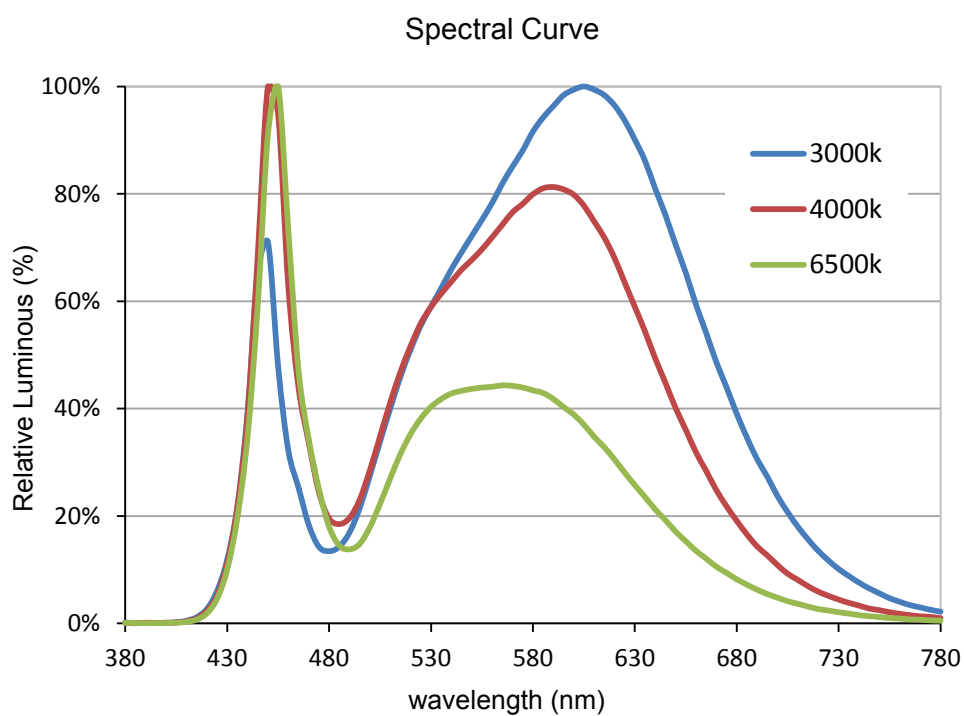
Product Characteristic Curve



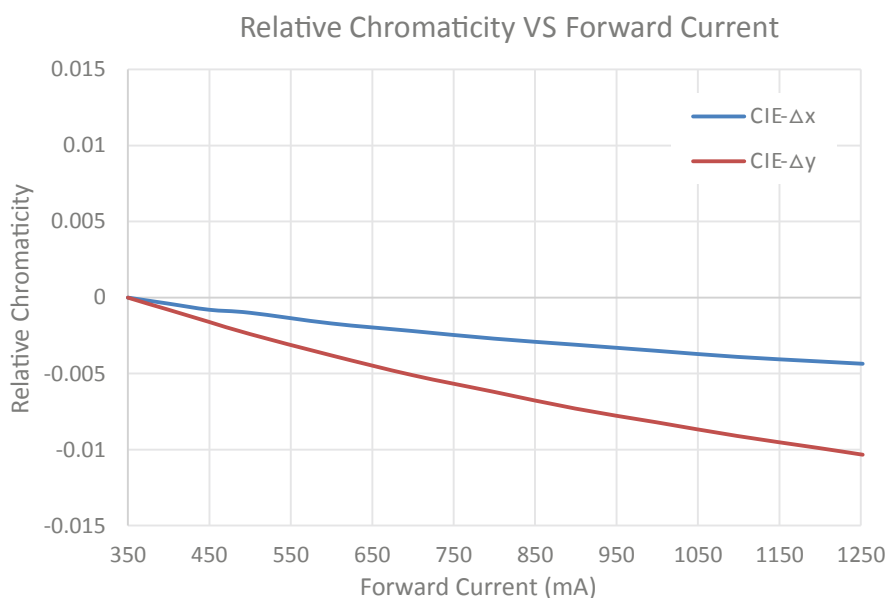
Product Characteristic Curve



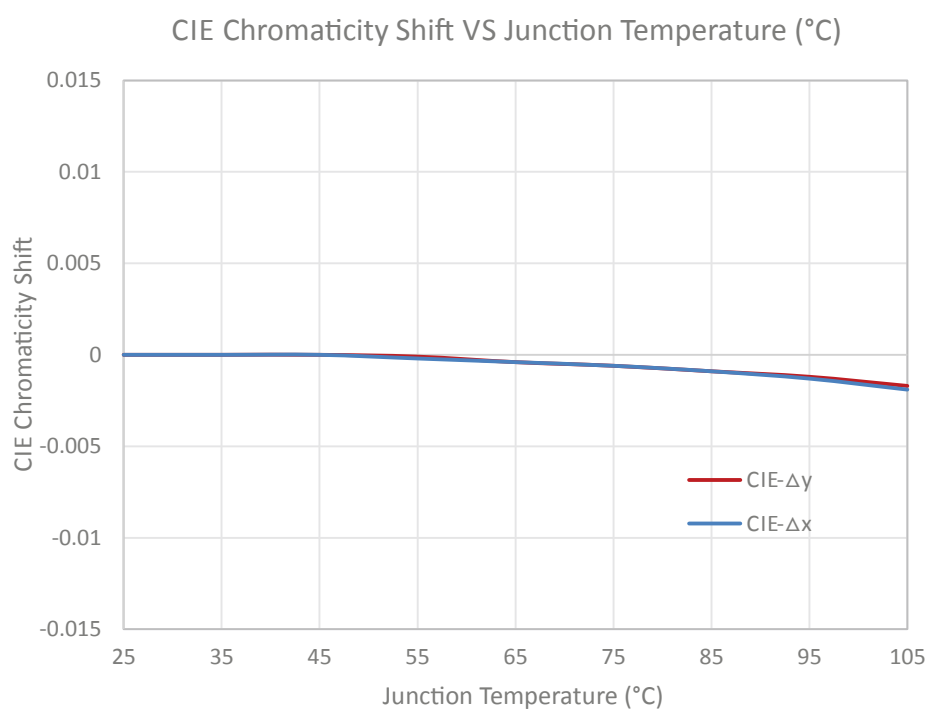
Product Characteristic Curve

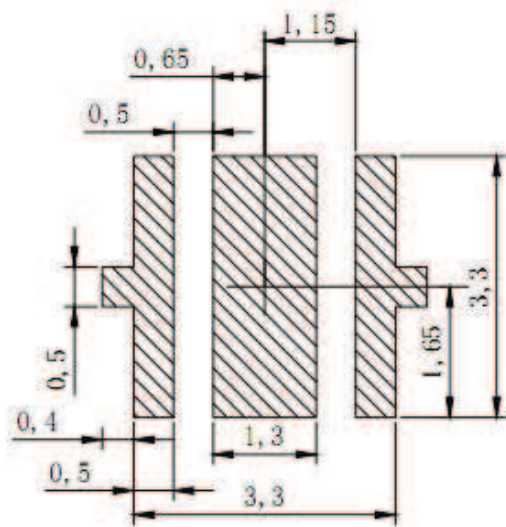
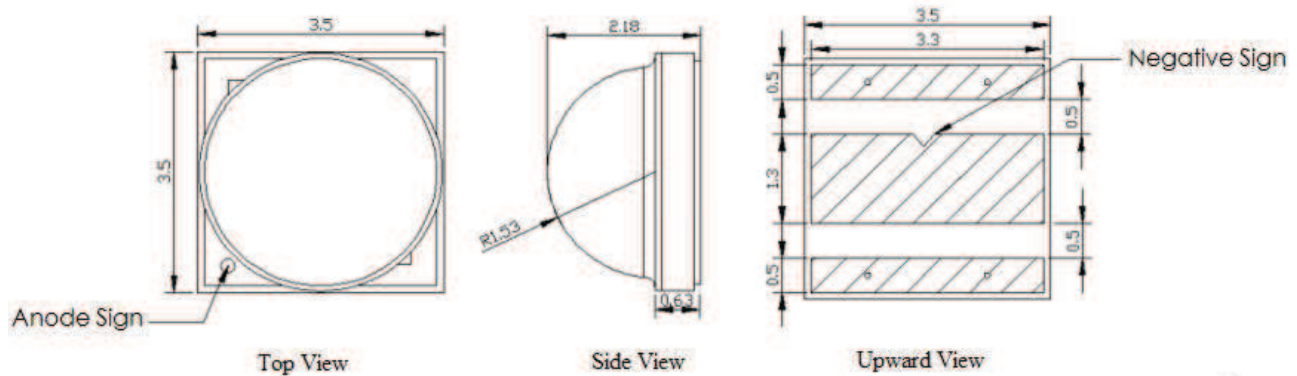


Product Characteristic Curve

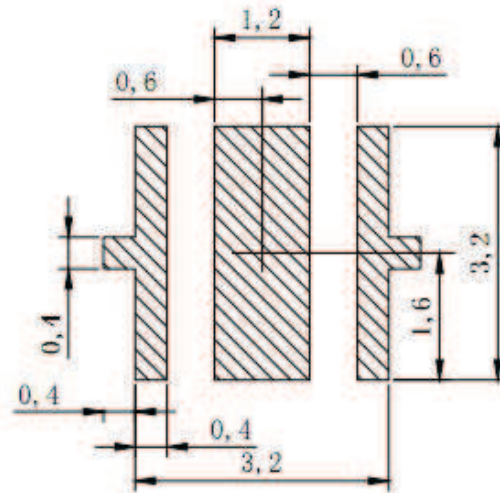


Product Characteristic Curve



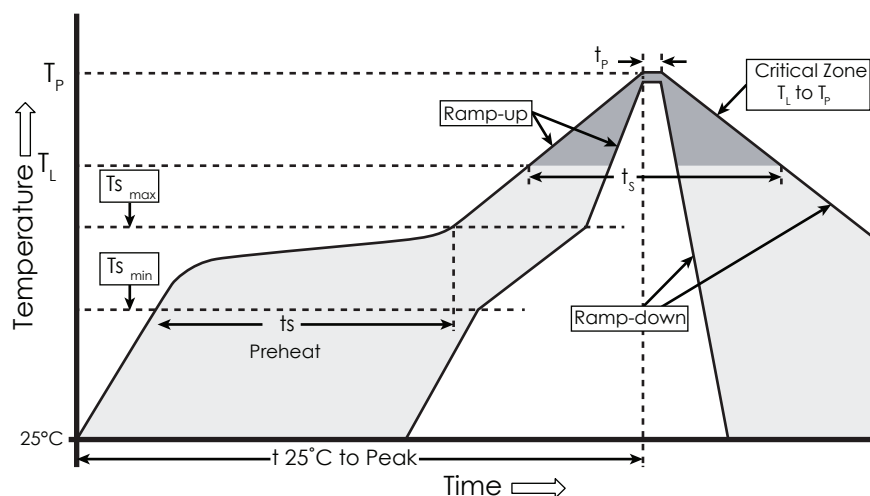
Mechanical Dimensions:**Unit: mm Tolerance: ± 0.1** 

Recommended PCB Solder PAD



Recommended Stencil Pattern

Recommended Reflow Profile



IPC/JEDECJ-STD-020C

Profile Feature	Lead-Based Solder	Lead-Free Solder
Average Ramp-Up Rate (Ts max to Tp)	3°C/s Max	3°C/s Max
Preheat: Temperature Min (Ts min)	100°C	150°C
Preheat: Temperature Max (Ts max)	150°C	200°C
Preheat Time (Ts min to Ts max)	60-120s	60-180s
Time Maintain Above: Temperature (TL)	183°C	217°
Time Maintain Above: Time (tL)	60-150s	60-150s
Peak/Classification Temperature (Tp)	215°C	260°C
Time within 5°C of Peak Temperature (tP)	10-30s	20-40s
Ramp-Down (Tp to TL)	6°C/s Max	6°C/s Max
Time 25°C to peak Temperature	6 min Max	8 min Max

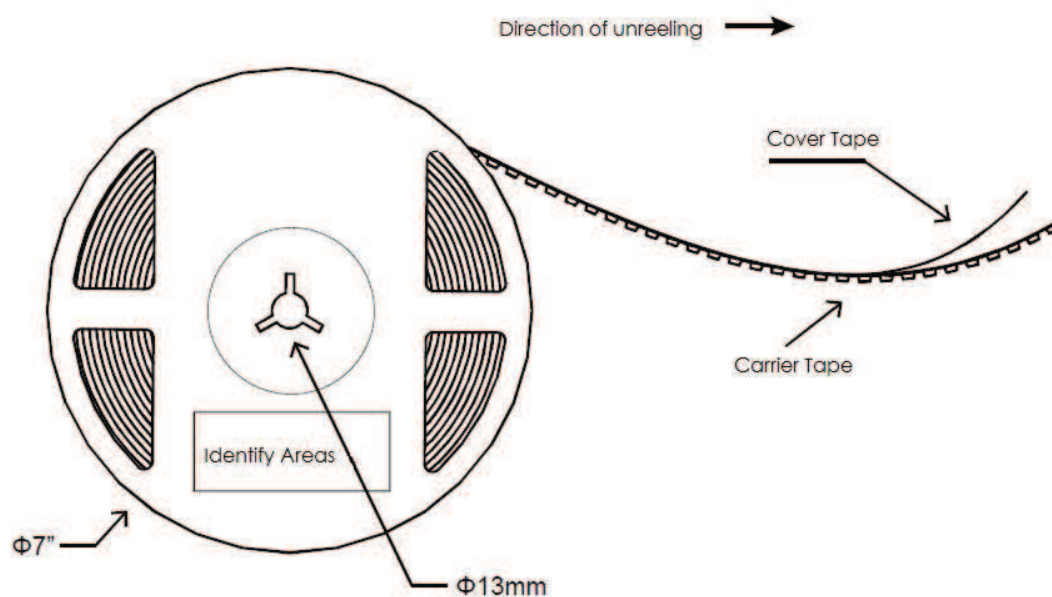
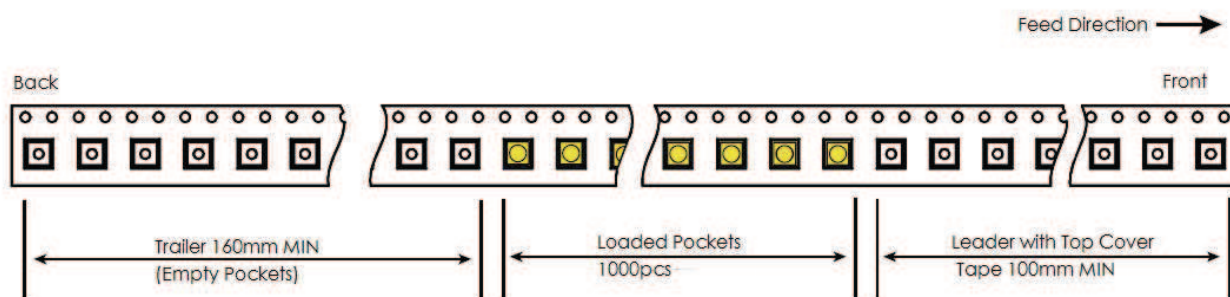
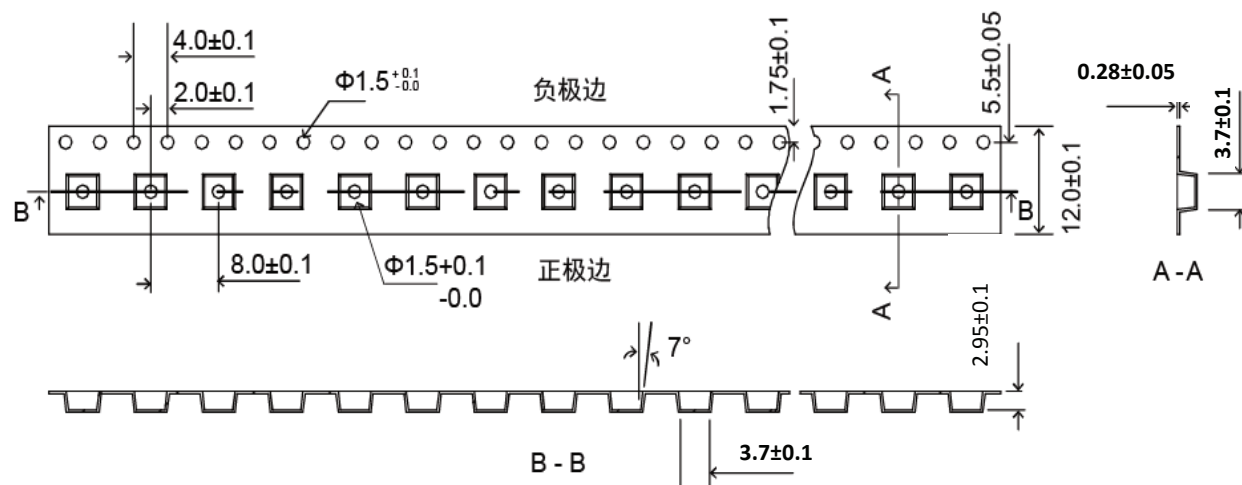
Notes:

After tests confirmed in no more than 30°C under the condition of 85% relative humidity (RH) SEL SEHP35 LED the plant life is not restricted. Moisture determination is included in the 85°C/ 85% relative humidity under the condition of moisture adsorption first 168 hours, then 3 times of reflow soldering, and visual inspection and electrical inspections at each stage.

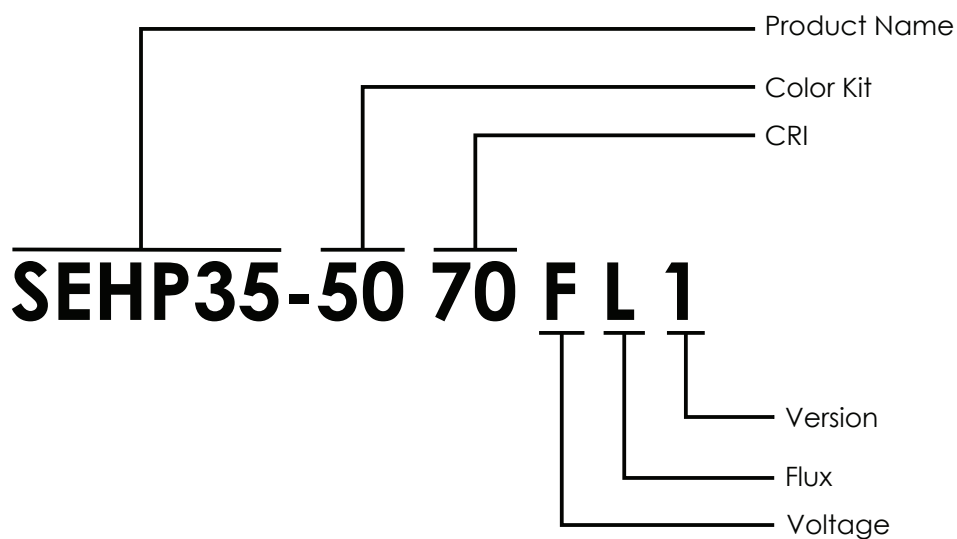
SEL advice: before used immediately, will be kept in a sealed moisture-proof bag SEHP35 LED.

SEL also suggested: immediately after use will all unused LED back to seal moisture bag and sealing the bag.

Tape: Unit: mm (1000pcs)



Product Name Description:



Color Kit

Color Kit	CCT
22	2200K
27	2700K
30	3000K
35	3500K
40	4000K
45	4500K
50	5000K
57	5700K
65	6500K

CRI Specification

CRI	Specification
70	CRI70
80	CRI80

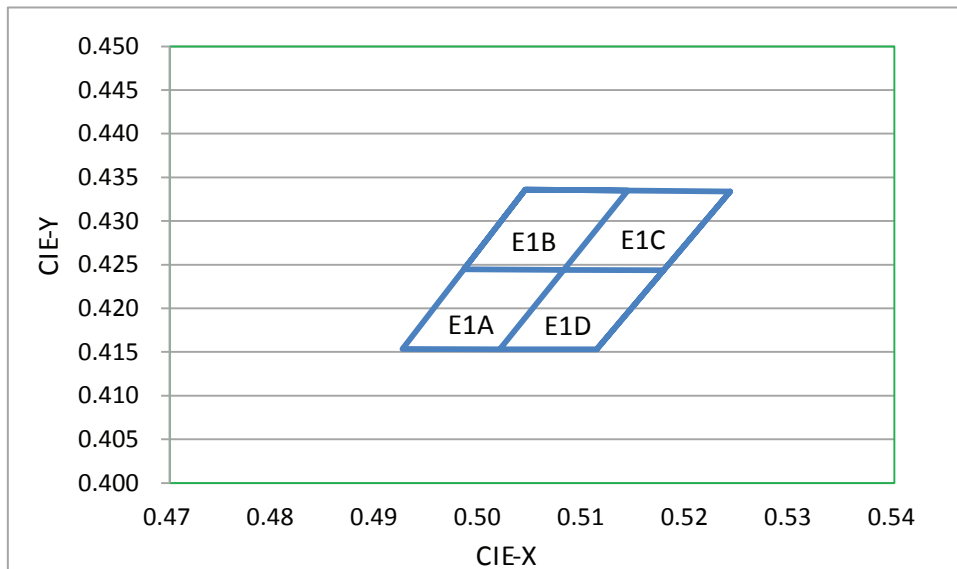
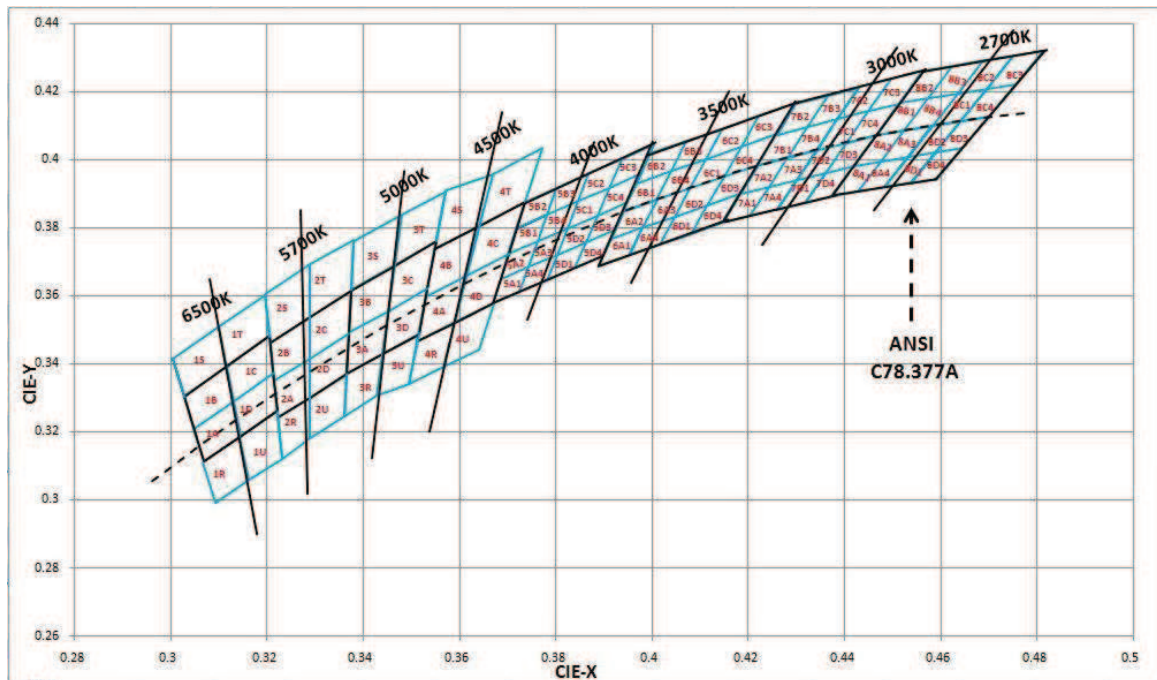
Voltage Specification

Voltage	Min	Max	Unit
F	2.85	3.15	V

Flux Specification

Flux	Min	Max	Unit
K	93.6	100	Lm
L	100	107	Lm
M	107	114	Lm
N	114	122	Lm
O	122	130	Lm
P	130	139	Lm
Q	139	148	Lm
R	148	156	Lm
S	156	164	Lm
U	164	182	Lm
V	182	200	Lm

Color Group Description:



- Tolerance: ± 0.007 on chromaticity (CCx, CCy)
- Forward Current: 350 mA
- Test Time: 20ms
- Ambient Temperature: 25°C

Performance Groups - Cromaticity

Region	x	y	Region	x	y	Region	x	y	Region	x	y
1A	0.3048	0.3207	1B	0.3028	0.3304	1C	0.3115	0.3391	1D	0.3130	0.3290
	0.3130	0.3290		0.3115	0.3391		0.3205	0.3481		0.3213	0.3373
	0.3144	0.3186		0.3130	0.3290		0.3213	0.3373		0.3221	0.3261
	0.3068	0.3113		0.3048	0.3207		0.3130	0.3290		0.3144	0.3186
5A	0.3702	0.3722	5B	0.3736	0.3874	5C	0.3870	0.3958	5D	0.3825	0.3798
	0.3825	0.3798		0.3870	0.3958		0.4006	0.4044		0.3951	0.3876
	0.3783	0.3646		0.3825	0.3798		0.3951	0.3876		0.3898	0.3716
	0.3670	0.3578		0.3702	0.3722		0.3825	0.3798		0.3783	0.3646
5A1	0.3670	0.3578	5A2	0.3686	0.3649	5A3	0.3744	0.3685	5A4	0.3726	0.3612
	0.3686	0.3649		0.3702	0.3722		0.3763	0.3760		0.3744	0.3685
	0.3744	0.3685		0.3763	0.3760		0.3825	0.3798		0.3804	0.3721
	0.3726	0.3612		0.3744	0.3685		0.3804	0.3721		0.3783	0.3646
5B1	0.3702	0.3722	5B2	0.3719	0.3797	5B3	0.3782	0.3837	5B4	0.3763	0.3760
	0.3719	0.3797		0.3736	0.3874		0.3802	0.3916		0.3782	0.3837
	0.3782	0.3837		0.3802	0.3916		0.3869	0.3958		0.3847	0.3877
	0.3763	0.3760		0.3782	0.3837		0.3847	0.3877		0.3825	0.3798
5C1	0.3825	0.3798	5C2	0.3847	0.3877	5C3	0.3912	0.3917	5C4	0.3887	0.3836
	0.3847	0.3877		0.3869	0.3958		0.3937	0.4001		0.3912	0.3917
	0.3912	0.3917		0.3937	0.4001		0.4006	0.4044		0.3978	0.3958
	0.3887	0.3836		0.3912	0.3917		0.3978	0.3958		0.3950	0.3875
5D1	0.3783	0.3646	5D2	0.3804	0.3721	5D3	0.3863	0.3758	5D4	0.3840	0.3681
	0.3804	0.3721		0.3825	0.3798		0.3887	0.3836		0.3863	0.3758
	0.3863	0.3758		0.3887	0.3836		0.3950	0.3875		0.3924	0.3794
	0.3840	0.3681		0.3863	0.3758		0.3924	0.3794		0.3898	0.3716
7A	0.4221	0.3985	7B	0.4299	0.4165	7C	0.4430	0.4212	7D	0.4342	0.4028
	0.4342	0.4028		0.4430	0.4212		0.4562	0.4260		0.4465	0.4071
	0.4260	0.3853		0.4342	0.4028		0.4465	0.4071		0.4373	0.3893
	0.4147	0.3814		0.4221	0.3985		0.4342	0.4028		0.4260	0.3853
7A1	0.4147	0.3814	7A2	0.4183	0.3898	7A3	0.4242	0.3919	7A4	0.4203	0.3833
	0.4183	0.3898		0.4221	0.3984		0.4281	0.4006		0.4242	0.3919
	0.4242	0.3919		0.4281	0.4006		0.4342	0.4028		0.4300	0.3939
	0.4203	0.3833		0.4242	0.3919		0.4300	0.3939		0.4259	0.3853
7B1	0.4221	0.3984	7B2	0.4259	0.4073	7B3	0.4322	0.4096	7B4	0.4281	0.4006
	0.4259	0.4073		0.4299	0.4165		0.4364	0.4188		0.4322	0.4096
	0.4322	0.4096		0.4364	0.4188		0.4430	0.4212		0.4385	0.4119
	0.4281	0.4006		0.4322	0.4096		0.4385	0.4119		0.4342	0.4028
7C1	0.4342	0.4028	7C2	0.4385	0.4119	7C3	0.4449	0.4141	7C4	0.4403	0.4049
	0.4385	0.4119		0.4430	0.4212		0.4496	0.4236		0.4449	0.4141
	0.4449	0.4141		0.4496	0.4236		0.4562	0.4260		0.4513	0.4164
	0.4403	0.4049		0.4449	0.4141		0.4513	0.4164		0.4465	0.4071

Region	x	y	Region	x	y	Region	x	y	Region	x	y
7D1	0.4259	0.3853	7D2	0.4300	0.3939	7D3	0.4359	0.3960	7D4	0.4316	0.3873
	0.4300	0.3939		0.4342	0.4028		0.4403	0.4049		0.4359	0.3960
	0.4359	0.3960		0.4403	0.4049		0.4465	0.4071		0.4418	0.3981
	0.4316	0.3873		0.4359	0.3960		0.4418	0.3981		0.4373	0.3893

Performance Groups - Chromaticity

Kit	Chromaticity Bins
65	1A, 1B, 1C, 1D
40	5A1,5A2,5A3,5A4,5B1,5B2,5B3,5B4,5C1,5C2,5C3,5C4,5D1,5D2,5D3,5D4
30	7A1,7A2,7A3,7A4,7B1,7B2,7B3,7B4,7C1,7C2,7C3,7C4,7D1,7D2,7D3,7D4

Ordering Description:

White LEDs have performance distribution and been classified into multiple color groups.

It is recommended to order products is combination of color groups.

Color group classification for reference: 65, 40, 30