

NLW3535SW1M

LED Specification

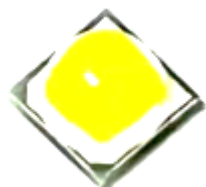
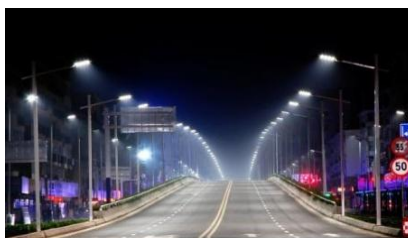


Bengbu Retop Electronics Co., Ltd.

Product: NLW3535SW1M

Version: RD

Date: 24/11/2025



Product Features

- Ceramic Substrate Package
- High Lumen Output, High efficacy
- Long lifetime, High reliability
- MSL: 2

Product Applications

- Architectural
- Industrial
- Outdoor
- Commercial

Product Specification (I_F=700mA, T_s=85°C)

CRI Min	CCT	Performance	Flux & lm/W(Typ.) IF=700mA
70	6500K	Flux (lm)	363
		Efficacy (lm/W)	185
	5700K	Flux (lm)	366
		Efficacy (lm/W)	187
	5000K	Flux (lm)	371
		Efficacy (lm/W)	189
	4000K	Flux (lm)	374
		Efficacy (lm/W)	191
	3500K	Flux (lm)	367
		Efficacy (lm/W)	187
	3000K	Flux (lm)	351
		Efficacy (lm/W)	179
	2700K	Flux (lm)	334
		Efficacy (lm/W)	170

80	6500K	Flux (lm)	336
		Efficacy (lm/W)	171
	5700K	Flux (lm)	338
		Efficacy (lm/W)	172
	5000K	Flux (lm)	343
		Efficacy (lm/W)	175
	4000K	Flux (lm)	343
		Efficacy (lm/W)	175
	3500K	Flux (lm)	339
		Efficacy (lm/W)	173
	3000K	Flux (lm)	322
		Efficacy (lm/W)	164
	2700K	Flux (lm)	309
		Efficacy (lm/W)	158
90	6500K	Flux (lm)	301
		Efficacy (lm/W)	154
	5700K	Flux (lm)	303
		Efficacy (lm/W)	155
	5000K	Flux (lm)	305
		Efficacy (lm/W)	156
	4000K	Flux (lm)	302
		Efficacy (lm/W)	154
	3500K	Flux (lm)	287
		Efficacy (lm/W)	146
	3000K	Flux (lm)	271
		Efficacy (lm/W)	138
	2700K	Flux (lm)	259
		Efficacy (lm/W)	132

Notes:

- 1.The product is tested with a current of 700mA, a test time of 20 ms, and an ambient temperature of 85℃.
- 2.The emission angle is the angle between the 50% central luminous intensity. The light source document required by optical simulation software such as ProSource, LightTools, TracePro, ASAP, and ZEMAX can be provided.
- 3.Due to measurement technology limitations, there are test errors in product testing. It should be noted that the tolerance of the ETi luminous flux and optical power measurement values is $\pm 7\%$, the tolerance of the chromaticity coordinates (CCx, CCy) measurement values is ± 0.01 , the tolerance of the color rendering index test value is ± 2 , and the voltage test error is $\pm 0.1V$.

Luminous Flux Bin Distribution ($I_F=700\text{mA}$, $T_s=85^\circ\text{C}$)
 Available Bin

CRI	CCT	Flux Bin											
70	6500K	235	250	265	280	295	310	325	340	355	370	385	390
	5700K	235	250	265	280	295	310	325	340	355	370	385	390
	5000K	235	250	265	280	295	310	325	340	355	370	385	390
	4000K	235	250	265	280	295	310	325	340	355	370	385	390
	3500K	235	250	265	280	295	310	325	340	355	370	385	390
	3000K	235	250	265	280	295	310	325	340	355	370	385	390
	2700K	235	250	265	280	295	310	325	340	355	370	385	390
80	6500K	235	250	265	280	295	310	325	340	355	370	385	390
	5700K	235	250	265	280	295	310	325	340	355	370	385	390
	5000K	235	250	265	280	295	310	325	340	355	370	385	390
	4000K	235	250	265	280	295	310	325	340	355	370	385	390
	3500K	235	250	265	280	295	310	325	340	355	370	385	390
	3000K	235	250	265	280	295	310	325	340	355	370	385	390
	2700K	235	250	265	280	295	310	325	340	355	370	385	390
90	6500K	235	250	265	280	295	310	325	340	355	370	385	390
	5700K	235	250	265	280	295	310	325	340	355	370	385	390
	5000K	235	250	265	280	295	310	325	340	355	370	385	390
	4000K	235	250	265	280	295	310	325	340	355	370	385	390
	3500K	235	250	265	280	295	310	325	340	355	370	385	390
	3000K	235	250	265	280	295	310	325	340	355	370	385	390
	2700K	235	250	265	280	295	310	325	340	355	370	385	390

Notes:

- 1.The product is tested with a current of 700mA, a test time of 20 ms, and an ambient temperature of 85°C.
- 2.The emission angle is the angle between the 50% central luminous intensity. The light source document required by optical simulation software such as ProSource, LightTools, TracePro, ASAP, and ZEMAX can be provided.
- 3.Due to measurement technology limitations, there are test errors in product testing. It should be noted that the tolerance of the ETi luminous flux and optical power measurement values is $\pm 7\%$, the tolerance of the chromaticity coordinates (CCx, CCy) measurement values is ± 0.01 , the tolerance of the color rendering index test value is ± 2 , and the voltage test error is $\pm 0.1\text{V}$.

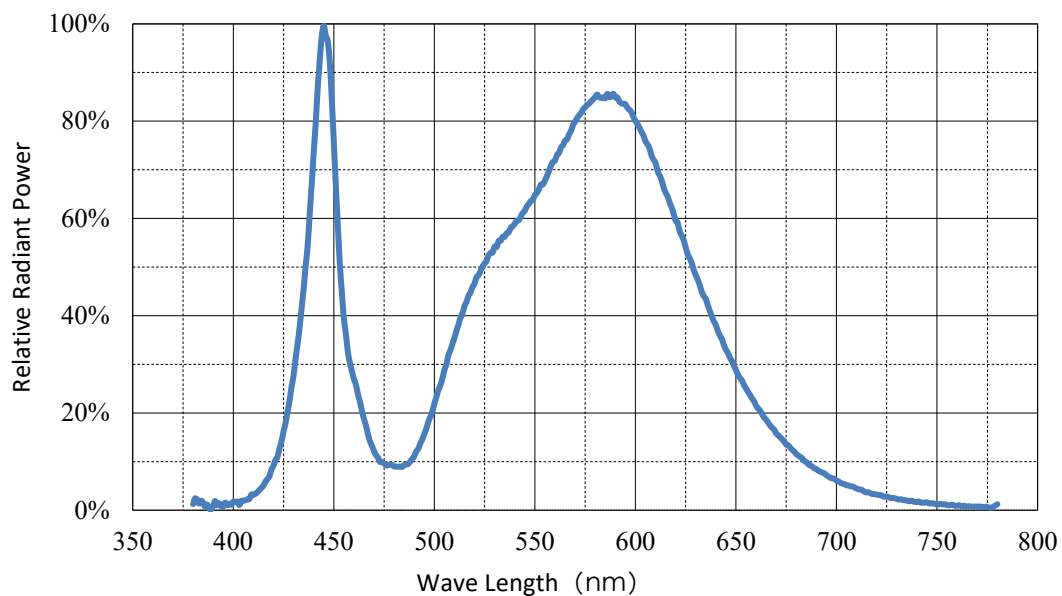
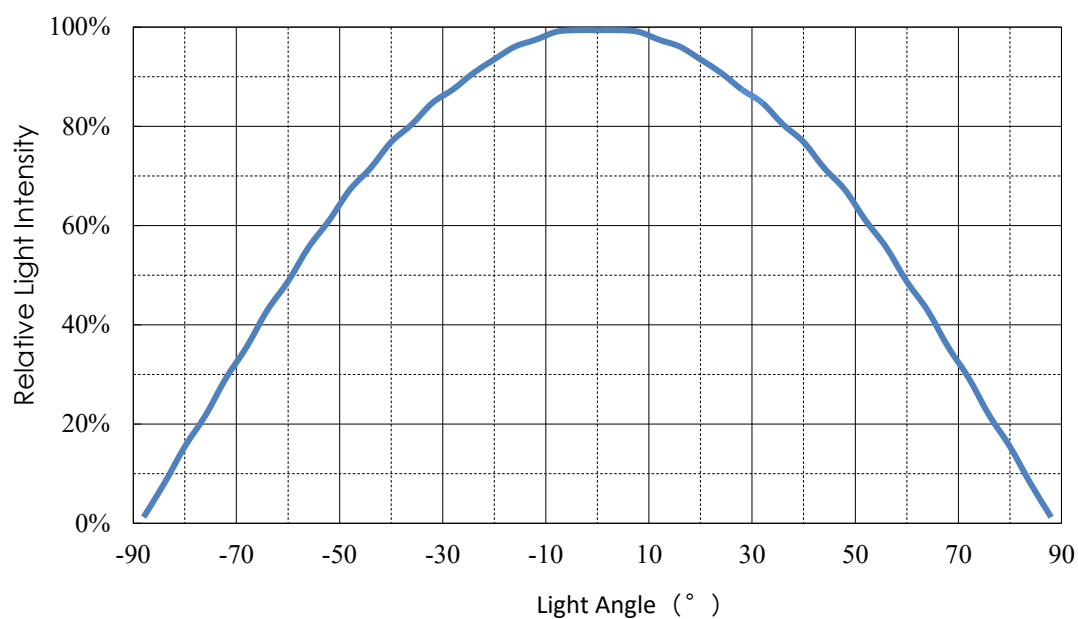
Absolute Maximum Ratings

Parameter	Rating
DC Forward Current	50-2000mA
Pulsed Forward Current	50-2200mA
Maximum Junction Temperature (Tj)	150°C
Operating Temperature	-40°C - 105°C
Storage Temperature	-40°C - 125°C
Soldering Temperature	JEDEC 020c 260°C
Reflow Soldering Cycles	3
Emission Angle	120°
Thermal Resistance	3°C/W
Reverse Voltage	No Reverse Operation Design
ESD Human Body Mode	8000V

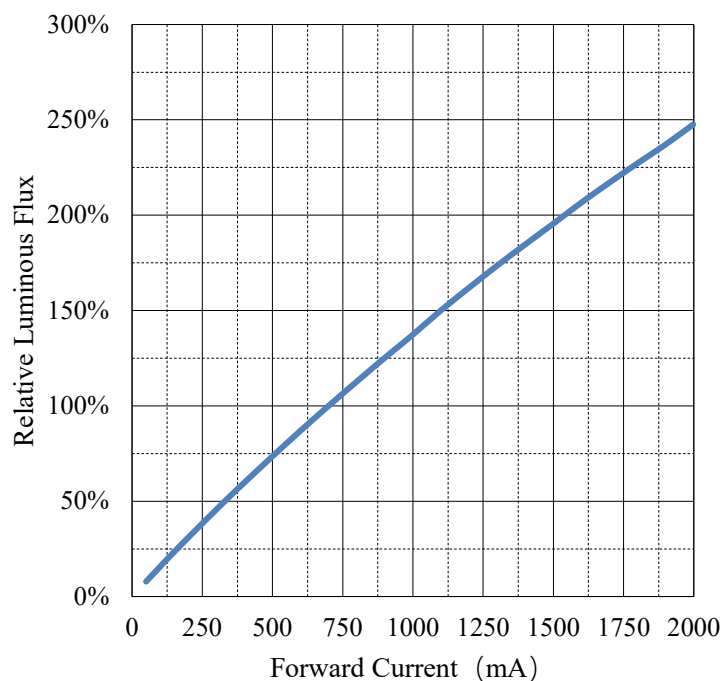
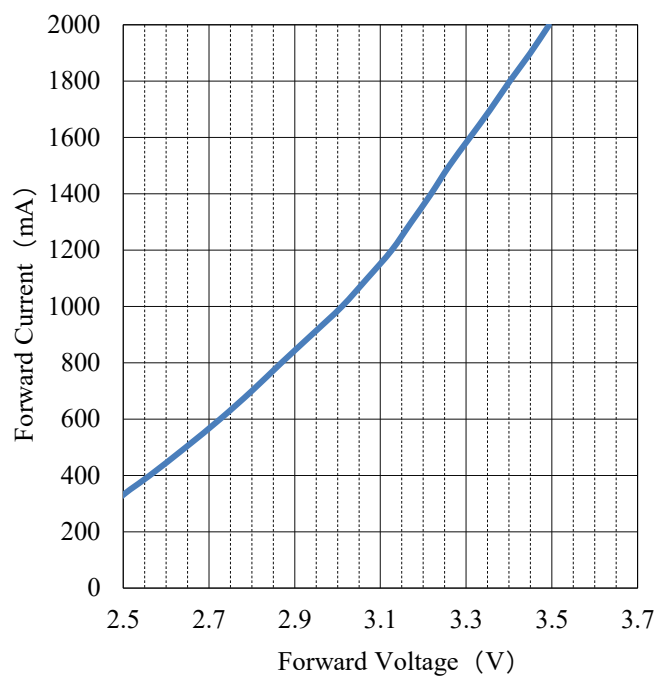
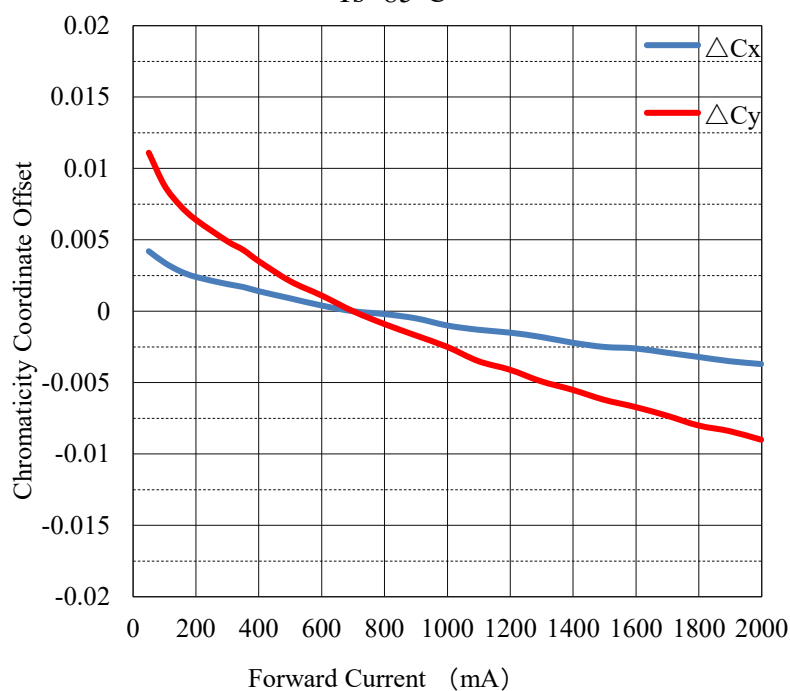
Notes:

- 1.The prerequisite for the maximum forward current or the maximum pulsed forward current is that the device junction temperature is lower than the rated operating junction temperature.
- 2.The maximum forward pulsed current is based on a pulse time of 10μs and a duty cycle of 0.005.

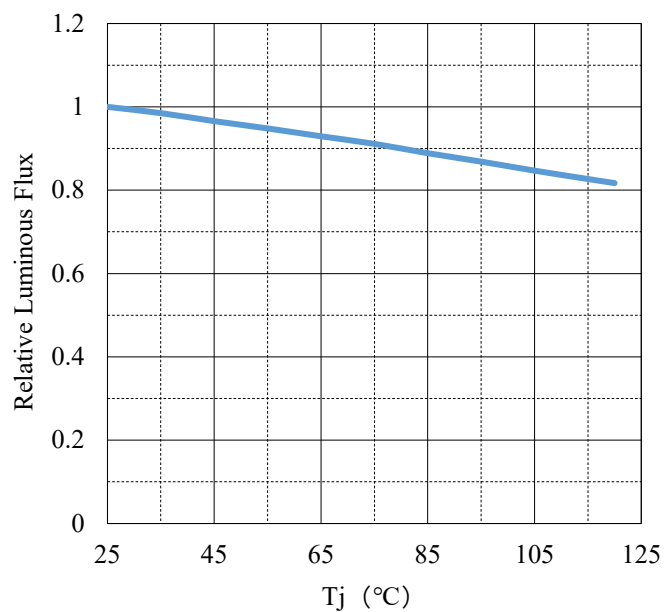
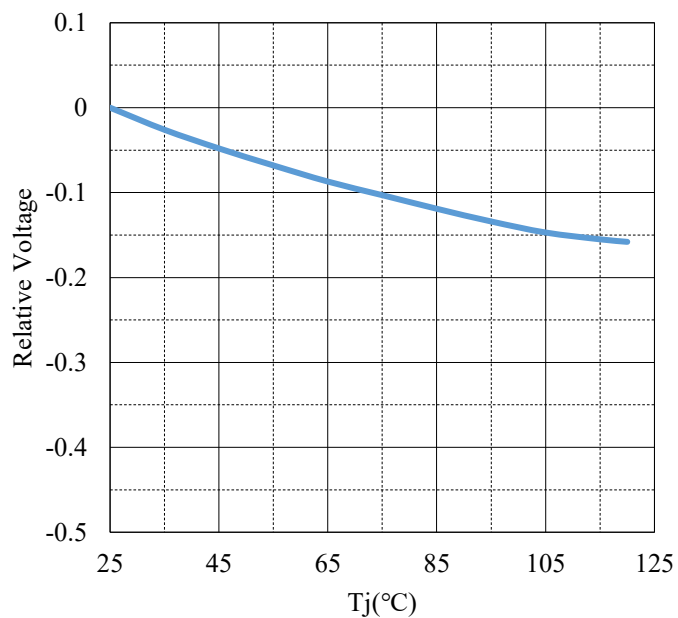
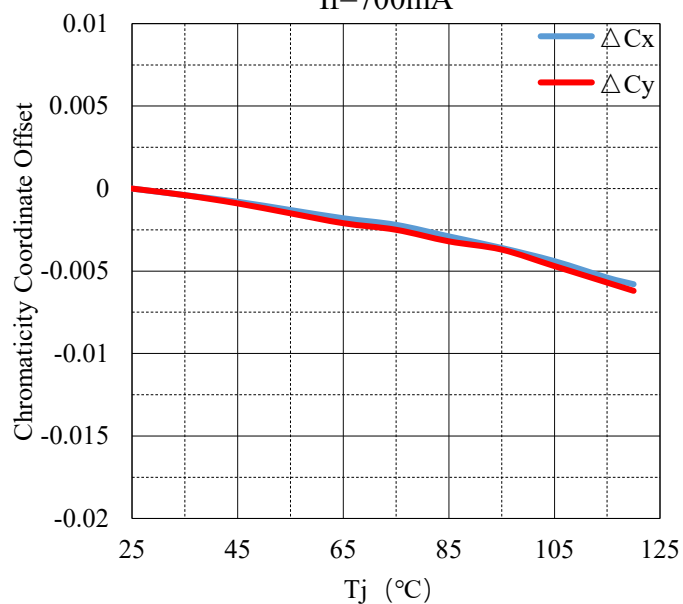
Product Characteristic Curve

Relative Radiant Power VS Wave Length
 $I_f=700\text{mA}$ Relative Light Intensity VS Angle
 $I_f=700\text{mA}$ 

Product Characteristic Curve

Relative Luminous Flux VS Forward Current
 $T_s=85^\circ\text{C}$ Forward Voltage VS Forward Current
 $T_s=85^\circ\text{C}$ Chromaticity Coordinate Offset VS Forward Current
 $T_s=85^\circ\text{C}$ 

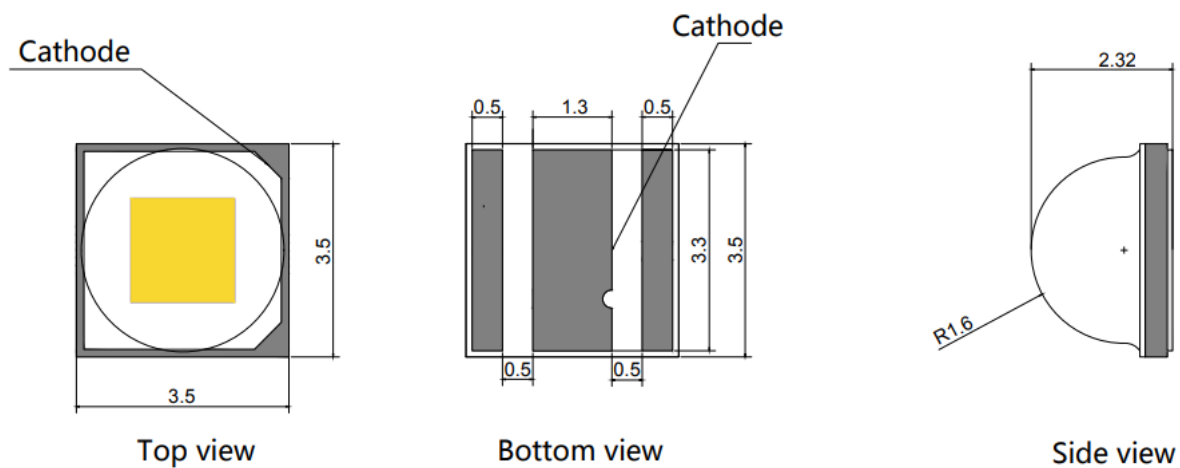
Product Characteristic Curve

Relative Luminous Flux VS Tj Temperature
If=700mARelative Voltage VS Tj Temperature
If=700mAChromaticity Coordinate Offset VS Tj
Temperature
If=700mA

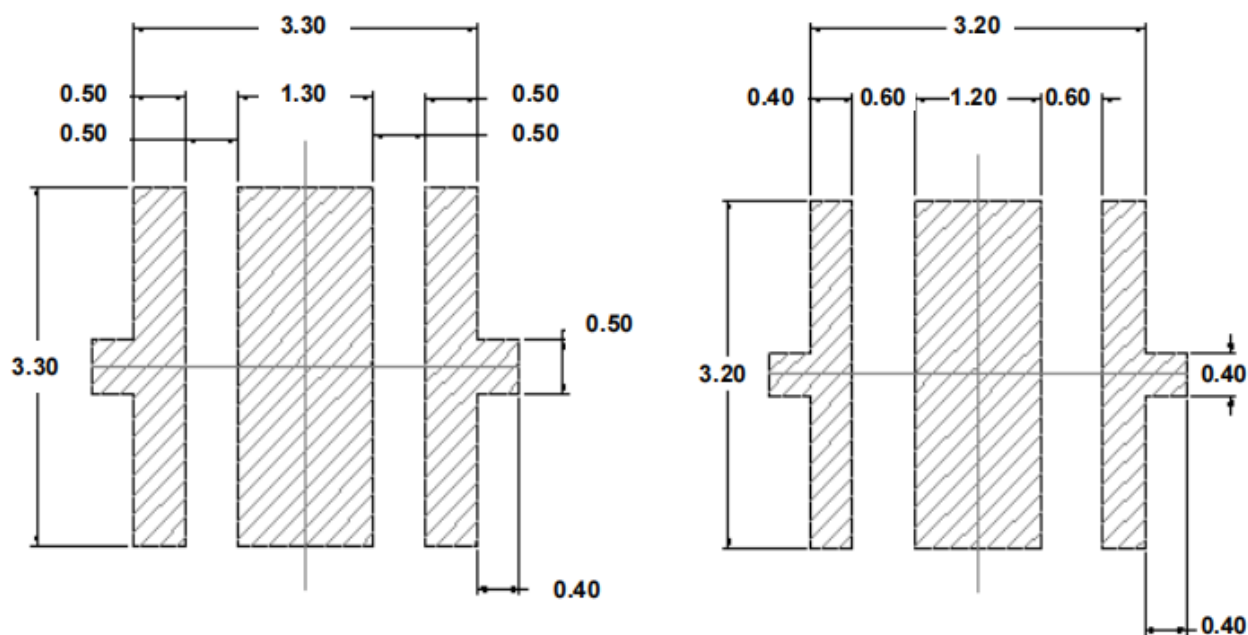
Mechanical Dimensions

Unit: Millimeter(mm)

Tolerance: $\pm 0.10\text{mm}$



Recommended Solder Pad



Recommended PCB Solder Pad

Recommended Stencil Pattern

Unit: Millimeter(mm)

Tolerance: $\pm 0.10\text{mm}$

Part Number Nomenclature

NLW3535SW1M — **B** **290** **D35** **B** **E1**

①

②

③

④

⑤

⑥

① : Product Name

② : Test Current B ,700mA

③ : Voltage (Refer to the Voltage Rank Table)

④ : Luminous Flux (Refer to the Luminous Flux Rank Table)

⑤ : Color Rendering Index (Typical Value) , B: 70;

⑥ : Color Kit (Refer to the Color Kit - Chromaticity Coordinate Groups)

CRI Rank	
CRI	Min
B	70Ra
H	80Ra
U	90Ra

Color Kit		
Color Bin	CCT	Unit
E1	6500	K
E2	5700	
E3	5000	
E4	4500	
E5	4000	
E6	3500	
E7	3000	
E8	2700	

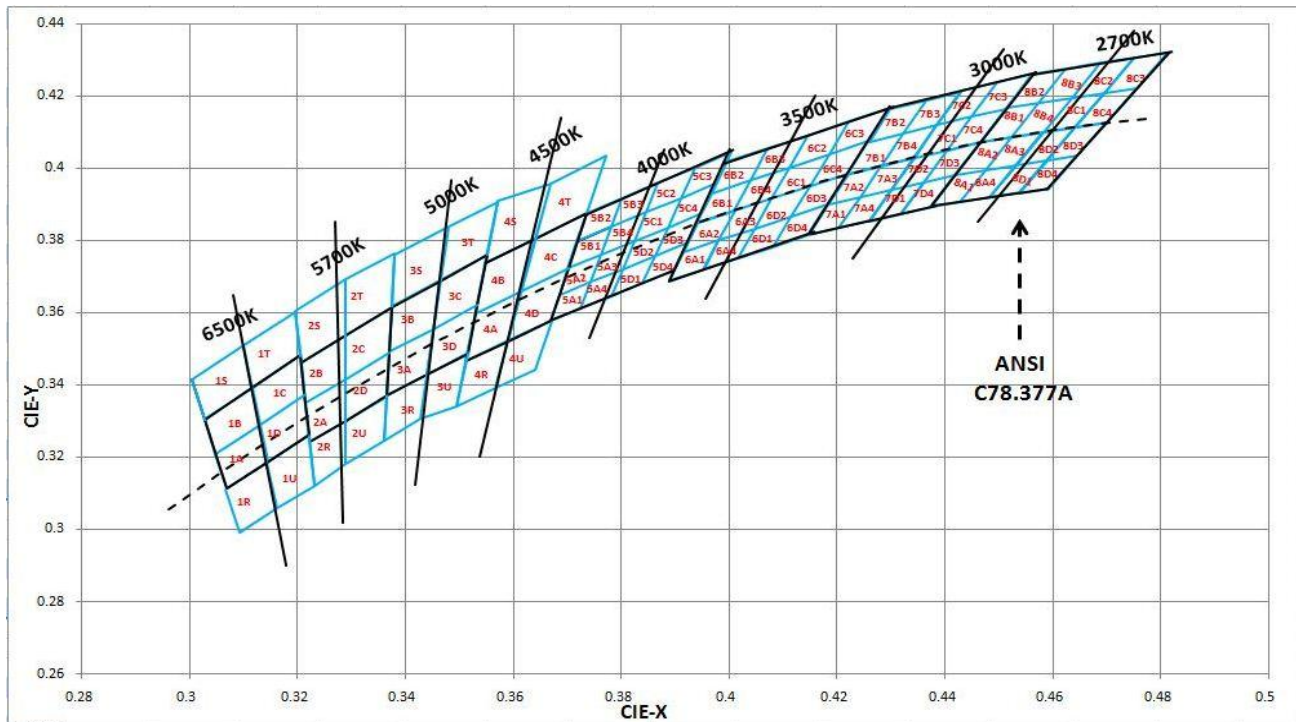
Voltage Rank

BIN Code	Min	Max	Unit
290	2.75	2.9	V
300	2.9	3.0	

Luminous Flux Rank at 700 mA @ 85°C

BIN Code	Min	Max	Unit
D23	235	250	lm
D25	250	265	
D26	265	280	
D28	280	295	
D29	295	310	
D31	310	325	
D32	325	340	
D34	340	355	
D35	355	370	
D37	370	385	
D38	385	400	

Chromaticity Coordinate Groups



CIE 1931 Chromaticity Diagram

Performance Groups—Chromaticity

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
1R	0.3068	0.3113	1S	0.3005	0.3415	1T	0.3099	0.3509	1U	0.3144	0.3186
	0.3144	0.3186		0.3099	0.3509		0.3196	0.3602		0.3221	0.3261
	0.3161	0.3059		0.3115	0.3391		0.3205	0.3481		0.3231	0.3120
	0.3093	0.2993		0.3028	0.3304		0.3115	0.3391		0.3161	0.3059
2A	0.3215	0.3350	2B	0.3207	0.3462	2C	0.3290	0.3538	2D	0.3290	0.3417
	0.3290	0.3417		0.3290	0.3538		0.3376	0.3616		0.3371	0.3490
	0.3290	0.3300		0.3290	0.3417		0.3371	0.3490		0.3366	0.3369
	0.3222	0.3243		0.3215	0.3350		0.3290	0.3417		0.3290	0.3300
2R	0.3222	0.3243	2S	0.3196	0.3602	2T	0.3290	0.3690	2U	0.3290	0.3300
	0.3290	0.3300		0.3290	0.3690		0.3381	0.3762		0.3366	0.3369
	0.3290	0.3180		0.3290	0.3538		0.3376	0.3616		0.3361	0.3245
	0.3231	0.3120		0.3207	0.3462		0.3290	0.3538		0.3290	0.3180
3A	0.3371	0.3490	3B	0.3376	0.3616	3C	0.3463	0.3687	3D	0.3451	0.3554
	0.3451	0.3554		0.3463	0.3687		0.3551	0.3760		0.3533	0.3620
	0.3440	0.3427		0.3451	0.3554		0.3533	0.3620		0.3515	0.3487
	0.3366	0.3369		0.3371	0.3490		0.3451	0.3554		0.3440	0.3427

3R	0.3366	0.3369	3S	0.3381	0.3762	3T	0.3480	0.3840	3U	0.3440	0.3428
	0.3440	0.3428		0.3480	0.3840		0.3571	0.3907		0.3515	0.3487
	0.3429	0.3307		0.3463	0.3687		0.3551	0.3760		0.3495	0.3339
	0.3361	0.3245		0.3376	0.3616		0.3463	0.3687		0.3429	0.3307
4A	0.3530	0.3597	4B	0.3548	0.3736	4C	0.3641	0.3804	4D	0.3615	0.3659
	0.3615	0.3659		0.3641	0.3804		0.3736	0.3874		0.3702	0.3722
	0.3590	0.3521		0.3615	0.3659		0.3702	0.3722		0.3670	0.3578
	0.3512	0.3465		0.3530	0.3597		0.3615	0.3659		0.3590	0.3521
4R	0.3512	0.3465	4S	0.3571	0.3907	4T	0.3668	0.3957	4U	0.3590	0.3521
	0.3590	0.3521		0.3668	0.3957		0.3771	0.4034		0.3670	0.3578
	0.3567	0.3389		0.3641	0.3804		0.3736	0.3874		0.3640	0.3440
	0.3495	0.3339		0.3548	0.3736		0.3641	0.3804		0.3567	0.3389
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

Performance Groups—Chromaticity

Region	x	y	Region	x	y	Region	x	y	Region	x	y
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
6A	0.3941	0.3848	6B	0.3996	0.4015	6C	0.4146	0.4089	6D	0.4080	0.3916
	0.4080	0.3916		0.4146	0.4089		0.4299	0.4165		0.4221	0.3985
	0.4017	0.3752		0.4080	0.3916		0.4221	0.3985		0.4147	0.3814
	0.3889	0.369		0.3941	0.3848		0.4080	0.3916		0.4017	0.3752
6A1	0.3889	0.3690	6A2	0.3915	0.3768	6A3	0.3981	0.3800	6A4	0.4080	0.3916
	0.3915	0.3768		0.3941	0.3848		0.4010	0.3882		0.3981	0.3800
	0.3981	0.3800		0.4010	0.3882		0.4080	0.3916		0.4048	0.3832
	0.3953	0.3720		0.3981	0.3800		0.4048	0.3832		0.4017	0.3751

6B1	0.3941	0.3848	6B2	0.3968	0.3930	6B3	0.4040	0.3966	6B4	0.4010	0.3882
	0.3968	0.3930		0.3996	0.4015		0.4071	0.4052		0.4040	0.3966
	0.4040	0.3966		0.4071	0.4052		0.4146	0.4089		0.4113	0.4001
	0.4010	0.3882		0.4040	0.3966		0.4113	0.4001		0.4080	0.3916
6C1	0.4080	0.3916	6C2	0.4113	0.4001	6C3	0.4186	0.4037	6C4	0.4150	0.3950
	0.4113	0.4001		0.4146	0.4089		0.4222	0.4127		0.4186	0.4037
	0.4186	0.4037		0.4222	0.4127		0.4299	0.4165		0.4259	0.4073
	0.4150	0.3950		0.4186	0.4037		0.4259	0.4073		0.4221	0.3984
6D1	0.4017	0.3751	6D2	0.4048	0.3832	6D3	0.4116	0.3865	6D4	0.4062	0.3782
	0.4048	0.3832		0.4080	0.3916		0.4150	0.3950		0.4116	0.3865
	0.4116	0.3865		0.4150	0.3950		0.4221	0.3984		0.4183	0.3898
	0.4082	0.3782		0.4116	0.3865		0.4183	0.3898		0.4147	0.3814
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	0.426		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
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

Notes:

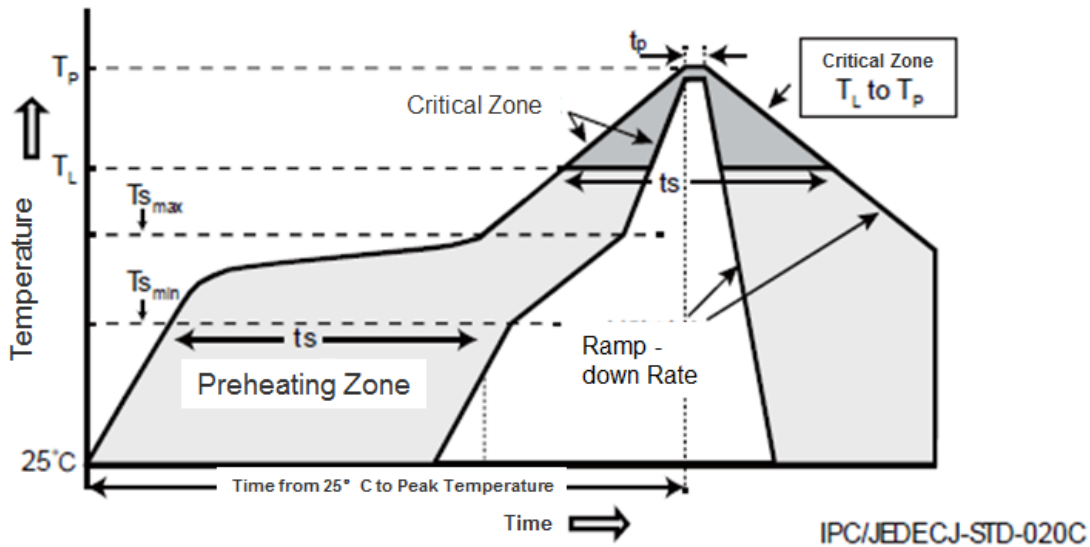
Tolerance: ± 0.007 on chromaticity coordinates (CCx, CCy) .

Test Time: 20 ms.

Ambient Temperature: 85°C.

Test Current: 700mA.

Recommended Reflow Soldering Profile



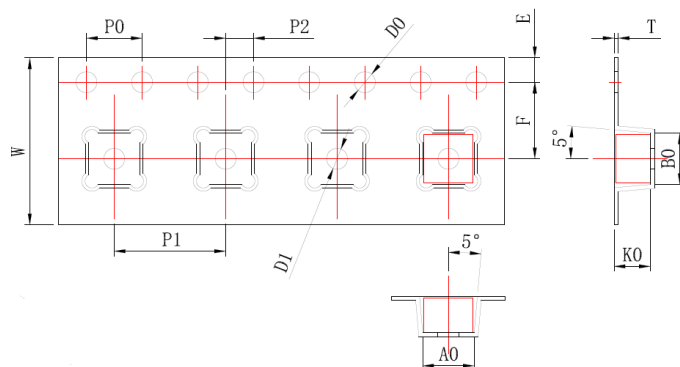
Temperature Distribution Characteristics	Tin-lead eutectic solder	Lead - Free Solder
Ramp-up Rate from T _{smax} to T _p	Maximum value: 3°C/s	Maximum Rate of Temperature Increase: 3°C/s
Minimum Preheating Temperature T _{smin}	100°C	Minimum Pre - heat Temperature: 150°C
Maximum Preheating Temperature T _{smax}	150°C	Maximum Pre - heat Temperature: 200°C
Preheating Time from T _{smin} to T _{smax}	60 - 120 s	Pre - heat Duration: 60 - 180 s
Liquidus Temperature T _L	183°C	Liquidus Temperature: 217°C
Time during which the Temperature is Maintained above T _L (t _L)	60 - 150 s	Time above Liquidus Temperature: 60 - 150 s
Peak Temperature of the Package Body T _P	215°C	Peak Reflow Temperature: 260°C
Time within 5°C of the Specified Actual Peak Temperature (t _P)	10 - 30 s	Time at Peak Reflow Temperature: 20 - 40 s
Ramp-down Rate from T _p to T _L	Maximum value: 6°C/s	Maximum Rate of Temperature Decrease: 6°C/s
Time from 25°C to the Peak Temperature	Maximum value: 6 minutes	Maximum Overall Process Time: 8 minutes

Notes:

- 1.The temperature profile characteristics refer to IPC/JEDEC J - STD - 020C.
- 2.The product moisture sensitivity level is 2 (MSL 2).

Tap and Reel Dimensions: SPQ: 1000 pcs/reel

Unit: millimeter (mm)



Symbol	AO	BO	KO	PO	P1	P2
spec	3.70 ± 0.10	3.70 ± 0.10	2.60 ± 0.10	4.00 ± 0.10	8.00 ± 0.10	2.00 ± 0.10
symbol	E	F	DO	D1	W	T
SPec	1.75 ± 0.10	5.50 ± 0.10	$1.50 + 0.10 \text{ } _{-0.00}$	1.50 ± 0.10	12.00 ± 0.30	0.30 ± 0.05

