

Мощный светодиод ARPL-100W-EPA-5060-WW (3500mA)

Features:

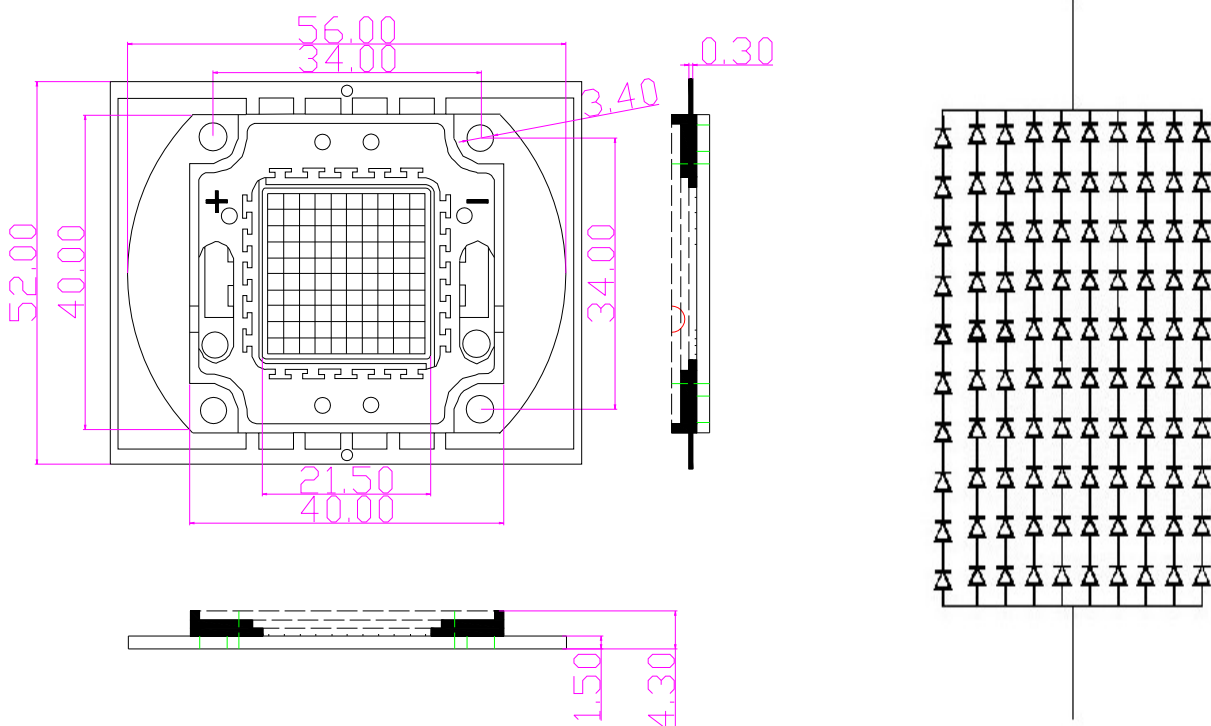
- More energy efficient than incandescent and most halogen lamps
- low voltage operation
- Instant light
- Long operating life
- Anti UV



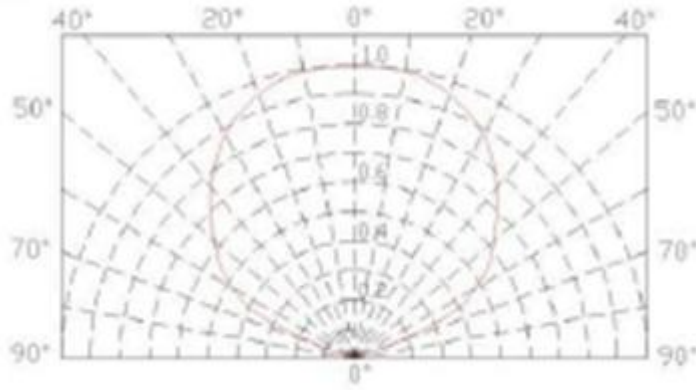
Applications:

- Indoor lighting:
spot light, ceiling light, bulb.....
- Architectural and landscape lighting:
down light, wall lamp, garden light
- Roadway lighting:
Street light, garden light, tunnel light
- Display lighting:

■ Package Dimensions



Notes: All dimensions in mm tolerance is ± 0.1 mm unless otherwise noted.



■ Absolute Maximum Ratings (Ta=25°C)

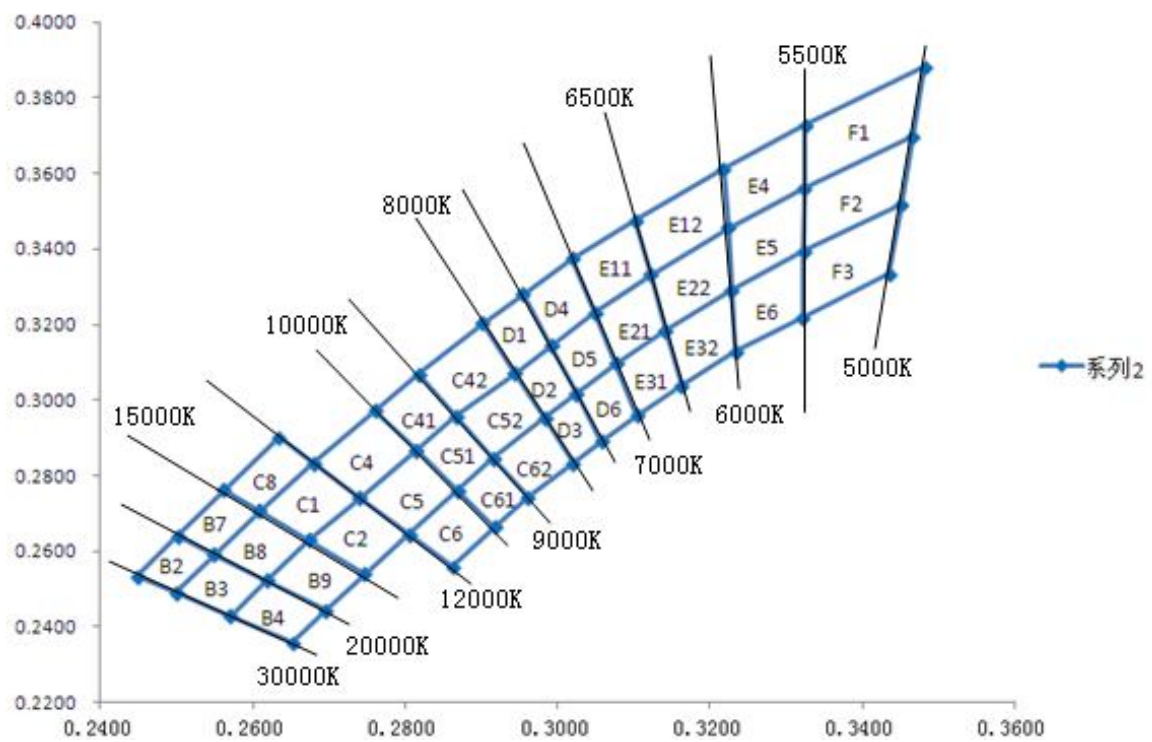
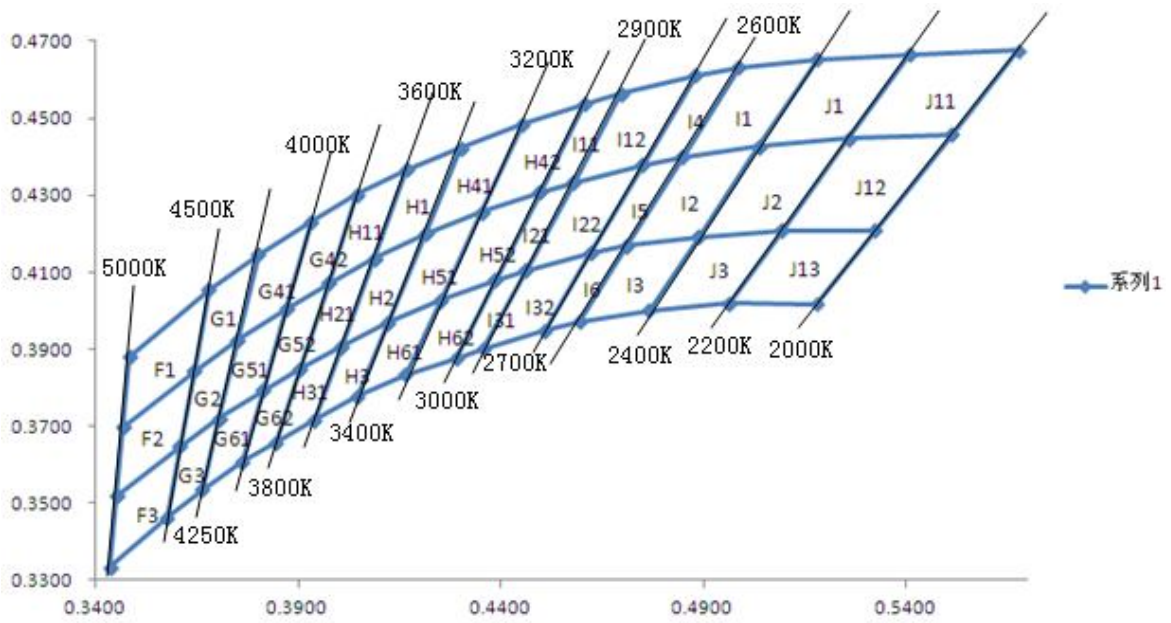
| Parameter | Symbol | Rating | Unit |
|-----------------------------|-----------|-----------|------|
| DC Forward Current | I_F | 3500 | m A |
| Peak pulse Current* | I_{FP} | 5000 | m A |
| Reverse Voltage | V_R | 50 | V |
| Power Dissipation | P_D | 100 | W |
| Operating Temperature Range | T_{OPR} | -30 ~ +75 | °C |
| Storage Temperature Range | T_{STG} | -40 ~ +85 | °C |
| LED Junction Temperature | T_J | 125 | °C |

Notes: 1. 1/10 Duty Cycle 0.1ms Pulse Width.

■ Electrical/Optical Characteristics--White (At TA=25°C)

| Parameter | Symbol | Conditions | Min | Avg. | Max | Units |
|--|-----------------------|---------------------|-------|------|-------|---------------|
| Forward Voltage | V_F | $I_F=3500\text{mA}$ | 30.00 | -- | 34.00 | V |
| Thermal Resistance Junction To Board | $R\theta_{J-B}$ | $I_F=3500\text{mA}$ | -- | 8 | -- | °C/W |
| Luminous Flux | Φ_v | $I_F=3500\text{mA}$ | 9000 | | 10000 | lm |
| Color Temperature | CCT | $I_F=3500\text{mA}$ | 3000 | | 3200 | K |
| CRI | Ra | $I_F=3500\text{mA}$ | 60 | -- | -- | -- |
| Temperature Coefficient of Forward Voltage | $\Delta V_F/\Delta T$ | $I_F=3500\text{mA}$ | -- | -2 | -- | mV/°C |
| Reverse Current | I_R | $V_R=50\text{V}$ | -- | -- | 10 | μA |
| Viewing Angle ^[1] | $2\theta_{1/2}$ | $I_F=3500\text{mA}$ | -- | 120 | -- | Deg |

■ Color & binning



| | | | | | | | | |
|------------|--------|--------|------------|--------|--------|------------|--------|--------|
| J11 | 0.5409 | 0.4666 | J12 | 0.5258 | 0.4447 | J13 | 0.5093 | 0.4209 |
| | 0.5677 | 0.4675 | | 0.5513 | 0.4458 | | 0.5323 | 0.4208 |
| | 0.5513 | 0.4458 | | 0.5323 | 0.4208 | | 0.5179 | 0.4018 |
| | 0.5258 | 0.4447 | | 0.5093 | 0.4209 | | 0.4963 | 0.4020 |
| J1 | 0.5180 | 0.4653 | J2 | 0.5036 | 0.4426 | J3 | 0.4888 | 0.4192 |
| | 0.5409 | 0.4666 | | 0.5258 | 0.4447 | | 0.5093 | 0.4209 |
| | 0.5258 | 0.4447 | | 0.5093 | 0.4209 | | 0.4963 | 0.4020 |
| | 0.5036 | 0.4426 | | 0.4888 | 0.4192 | | 0.4766 | 0.4001 |
| I1 | 0.4988 | 0.4632 | I2 | 0.4849 | 0.4399 | I3 | 0.4711 | 0.4169 |
| | 0.5180 | 0.4653 | | 0.5036 | 0.4426 | | 0.4888 | 0.4192 |
| | 0.5036 | 0.4426 | | 0.4888 | 0.4192 | | 0.4766 | 0.4001 |
| | 0.4849 | 0.4399 | | 0.4711 | 0.4169 | | 0.4593 | 0.3972 |
| I4 | 0.4880 | 0.4611 | I5 | 0.4750 | 0.4379 | I6 | 0.4622 | 0.4150 |
| | 0.4988 | 0.4632 | | 0.4849 | 0.4399 | | 0.4711 | 0.4169 |
| | 0.4849 | 0.4399 | | 0.4711 | 0.4169 | | 0.4593 | 0.3972 |
| | 0.4750 | 0.4379 | | 0.4622 | 0.4150 | | 0.4509 | 0.3948 |
| I12 | 0.4697 | 0.4563 | I22 | 0.4579 | 0.4334 | I32 | 0.4461 | 0.4104 |
| | 0.4880 | 0.4611 | | 0.4750 | 0.4379 | | 0.4622 | 0.4150 |
| | 0.4750 | 0.4379 | | 0.4622 | 0.4150 | | 0.4509 | 0.3948 |
| | 0.4579 | 0.4334 | | 0.4461 | 0.4104 | | 0.4357 | 0.3901 |
| I11 | 0.4605 | 0.4536 | I21 | 0.4496 | 0.4308 | I31 | 0.4386 | 0.4080 |
| | 0.4697 | 0.4563 | | 0.4579 | 0.4334 | | 0.4461 | 0.4104 |
| | 0.4579 | 0.4334 | | 0.4461 | 0.4104 | | 0.4357 | 0.3901 |
| | 0.4496 | 0.4308 | | 0.4386 | 0.4080 | | 0.4289 | 0.3877 |
| H42 | 0.4454 | 0.4484 | H52 | 0.4353 | 0.4257 | H62 | 0.4251 | 0.4028 |
| | 0.4605 | 0.4536 | | 0.4496 | 0.4308 | | 0.4386 | 0.4080 |
| | 0.4496 | 0.4308 | | 0.4386 | 0.4080 | | 0.4289 | 0.3877 |
| | 0.4353 | 0.4257 | | 0.4251 | 0.4028 | | 0.4164 | 0.3834 |
| H41 | 0.4302 | 0.4423 | H51 | 0.4214 | 0.4200 | H61 | 0.4122 | 0.3969 |
| | 0.4454 | 0.4484 | | 0.4353 | 0.4257 | | 0.4251 | 0.4028 |
| | 0.4353 | 0.4257 | | 0.4251 | 0.4028 | | 0.4164 | 0.3834 |
| | 0.4214 | 0.4200 | | 0.4122 | 0.3969 | | 0.4047 | 0.3779 |

| | | | | | | | | |
|------------|--------|--------|------------|--------|--------|------------|--------|--------|
| H1 | 0.4167 | 0.4366 | H2 | 0.4087 | 0.4136 | H3 | 0.4007 | 0.3908 |
| | 0.4302 | 0.4423 | | 0.4214 | 0.4200 | | 0.4122 | 0.3969 |
| | 0.4214 | 0.4200 | | 0.4122 | 0.3969 | | 0.4047 | 0.3779 |
| | 0.4087 | 0.4136 | | 0.4007 | 0.3908 | | 0.3940 | 0.3717 |
| H11 | 0.4045 | 0.4301 | H21 | 0.3974 | 0.4072 | H31 | 0.3904 | 0.3850 |
| | 0.4167 | 0.4366 | | 0.4087 | 0.4136 | | 0.4007 | 0.3908 |
| | 0.4087 | 0.4136 | | 0.4007 | 0.3908 | | 0.3940 | 0.3717 |
| | 0.3974 | 0.4072 | | 0.3904 | 0.3850 | | 0.3845 | 0.3659 |
| G42 | 0.3932 | 0.4232 | G52 | 0.3870 | 0.4005 | G62 | 0.3812 | 0.3793 |
| | 0.4045 | 0.4301 | | 0.3974 | 0.4072 | | 0.3904 | 0.3850 |
| | 0.3974 | 0.4072 | | 0.3904 | 0.3850 | | 0.3845 | 0.3659 |
| | 0.3870 | 0.4005 | | 0.3812 | 0.3793 | | 0.3761 | 0.3608 |
| G41 | 0.3800 | 0.4146 | G51 | 0.3750 | 0.3923 | G61 | 0.3704 | 0.3720 |
| | 0.3932 | 0.4232 | | 0.3870 | 0.4005 | | 0.3812 | 0.3793 |
| | 0.3870 | 0.4005 | | 0.3812 | 0.3793 | | 0.3761 | 0.3608 |
| | 0.3750 | 0.3923 | | 0.3704 | 0.3720 | | 0.3662 | 0.3536 |
| G1 | 0.3679 | 0.4055 | G2 | 0.3642 | 0.3843 | G3 | 0.3608 | 0.3648 |
| | 0.3800 | 0.4146 | | 0.3750 | 0.3923 | | 0.3704 | 0.3720 |
| | 0.3750 | 0.3923 | | 0.3704 | 0.3720 | | 0.3662 | 0.3536 |
| | 0.3642 | 0.3843 | | 0.3608 | 0.3648 | | 0.3576 | 0.3463 |
| F4 | 0.3482 | 0.3881 | F5 | 0.3466 | 0.3698 | F6 | 0.3451 | 0.3519 |
| | 0.3679 | 0.4055 | | 0.3642 | 0.3843 | | 0.3608 | 0.3648 |
| | 0.3642 | 0.3843 | | 0.3608 | 0.3648 | | 0.3576 | 0.3463 |
| | 0.3466 | 0.3698 | | 0.3451 | 0.3519 | | 0.3435 | 0.3335 |

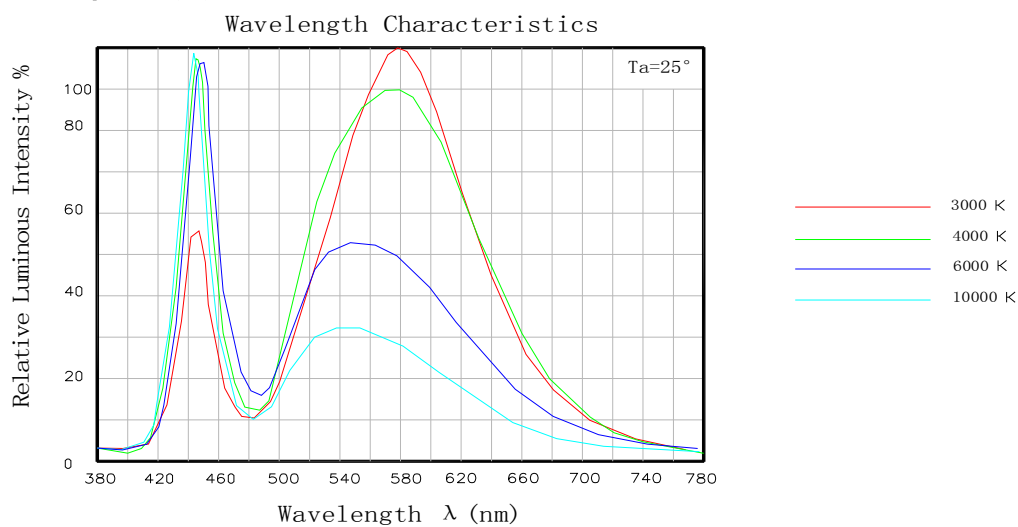
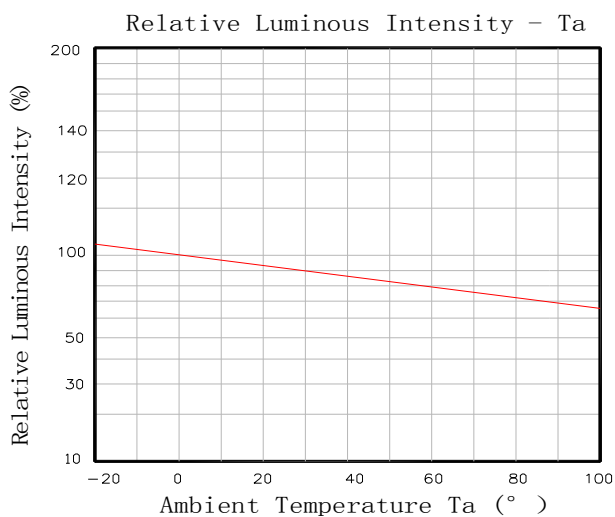
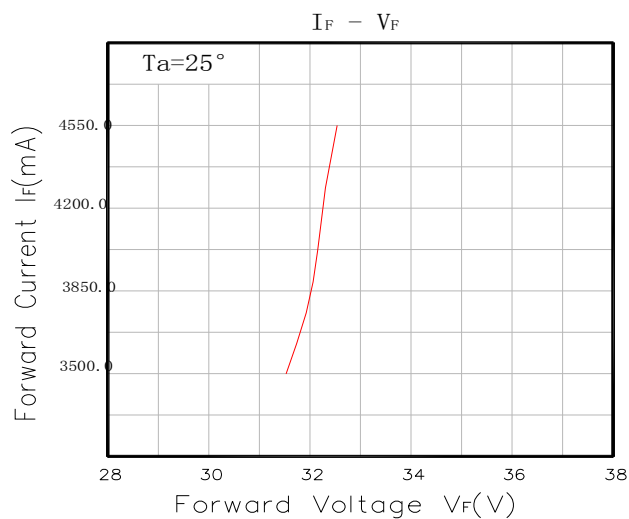
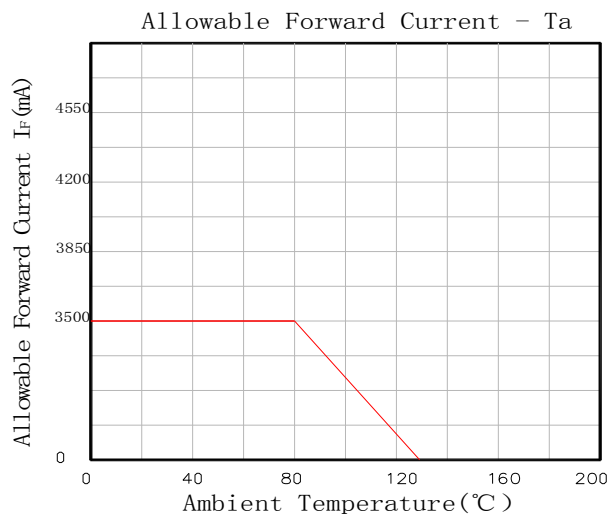
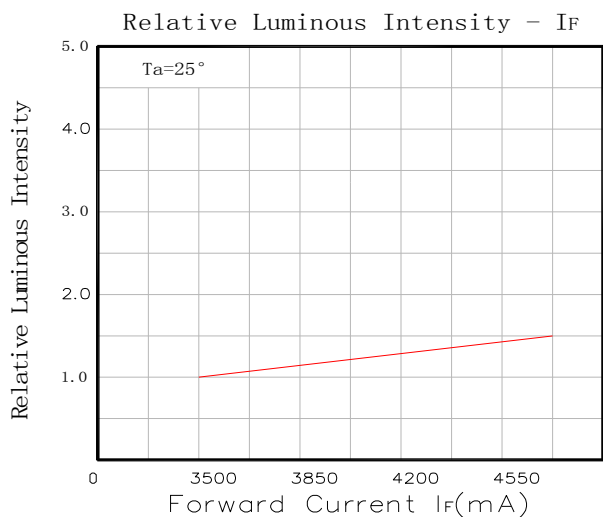
| | | | | | | | | |
|------------|--------|--------|------------|--------|--------|------------|--------|--------|
| F1 | 0.3325 | 0.3728 | F2 | 0.3324 | 0.3560 | F3 | 0.3323 | 0.3394 |
| | 0.3482 | 0.3881 | | 0.3466 | 0.3698 | | 0.3451 | 0.3519 |
| | 0.3466 | 0.3698 | | 0.3451 | 0.3519 | | 0.3435 | 0.3335 |
| | 0.3324 | 0.3560 | | 0.3323 | 0.3394 | | 0.3322 | 0.3219 |
| E4 | 0.3218 | 0.3613 | E5 | 0.3224 | 0.3456 | E6 | 0.3229 | 0.3291 |
| | 0.3325 | 0.3728 | | 0.3324 | 0.3560 | | 0.3323 | 0.3394 |
| | 0.3324 | 0.3560 | | 0.3323 | 0.3394 | | 0.3322 | 0.3219 |
| | 0.3224 | 0.3456 | | 0.3229 | 0.3291 | | 0.3234 | 0.3129 |
| E12 | 0.3102 | 0.3475 | E22 | 0.3122 | 0.3332 | E32 | 0.3142 | 0.3184 |
| | 0.3218 | 0.3613 | | 0.3224 | 0.3456 | | 0.3229 | 0.3291 |

| | | | | | | | | |
|------------|--------|--------|------------|--------|--------|------------|--------|--------|
| | 0.3224 | 0.3456 | | 0.3229 | 0.3291 | | 0.3234 | 0.3129 |
| | 0.3122 | 0.3332 | | 0.3142 | 0.3184 | | 0.3163 | 0.3038 |
| E11 | 0.3020 | 0.3374 | E21 | 0.3049 | 0.3232 | E31 | 0.3077 | 0.3096 |
| | 0.3102 | 0.3475 | | 0.3122 | 0.3332 | | 0.3142 | 0.3184 |
| | 0.3122 | 0.3332 | | 0.3142 | 0.3184 | | 0.3163 | 0.3038 |
| | 0.3049 | 0.3232 | | 0.3077 | 0.3096 | | 0.3104 | 0.2960 |
| D4 | 0.2955 | 0.3281 | D5 | 0.2992 | 0.3143 | D6 | 0.3025 | 0.3018 |
| | 0.3020 | 0.3374 | | 0.3049 | 0.3232 | | 0.3077 | 0.3096 |
| | 0.3049 | 0.3232 | | 0.3077 | 0.3096 | | 0.3104 | 0.2960 |
| | 0.2992 | 0.3143 | | 0.3025 | 0.3018 | | 0.3058 | 0.2892 |

| | | | | | | | | |
|------------|--------|--------|------------|--------|--------|------------|--------|--------|
| D1 | 0.2902 | 0.3203 | D2 | 0.2944 | 0.3070 | D3 | 0.2983 | 0.2952 |
| | 0.2955 | 0.3281 | | 0.2992 | 0.3143 | | 0.3025 | 0.3018 |
| | 0.2992 | 0.3143 | | 0.3025 | 0.3018 | | 0.3058 | 0.2892 |
| | 0.2944 | 0.3070 | | 0.2983 | 0.2952 | | 0.3021 | 0.2833 |
| C42 | 0.2818 | 0.3069 | C52 | 0.2867 | 0.2957 | C62 | 0.2916 | 0.2846 |
| | 0.2902 | 0.3203 | | 0.2944 | 0.3070 | | 0.2983 | 0.2952 |
| | 0.2944 | 0.3070 | | 0.2983 | 0.2952 | | 0.3021 | 0.2833 |
| | 0.2867 | 0.2957 | | 0.2916 | 0.2846 | | 0.2961 | 0.2744 |
| C41 | 0.2761 | 0.2972 | C51 | 0.2815 | 0.2868 | C61 | 0.2869 | 0.2761 |
| | 0.2818 | 0.3069 | | 0.2867 | 0.2957 | | 0.2916 | 0.2846 |
| | 0.2867 | 0.2957 | | 0.2916 | 0.2846 | | 0.2961 | 0.2744 |
| | 0.2815 | 0.2868 | | 0.2869 | 0.2761 | | 0.2918 | 0.2665 |
| C4 | 0.2680 | 0.2833 | C5 | 0.2740 | 0.2742 | C6 | 0.2805 | 0.2645 |
| | 0.2761 | 0.2972 | | 0.2815 | 0.2868 | | 0.2869 | 0.2761 |
| | 0.2815 | 0.2868 | | 0.2869 | 0.2761 | | 0.2918 | 0.2665 |
| | 0.2740 | 0.2742 | | 0.2805 | 0.2645 | | 0.2862 | 0.2559 |
| C8 | 0.2562 | 0.2762 | C1 | 0.2609 | 0.2706 | C2 | 0.2673 | 0.2629 |
| | 0.2634 | 0.2902 | | 0.2680 | 0.2833 | | 0.2740 | 0.2742 |
| | 0.2680 | 0.2833 | | 0.2740 | 0.2742 | | 0.2805 | 0.2645 |
| | 0.2609 | 0.2706 | | 0.2673 | 0.2629 | | 0.2747 | 0.2540 |
| B7 | 0.2502 | 0.2641 | B8 | 0.2549 | 0.2592 | B9 | 0.2618 | 0.2522 |
| | 0.2562 | 0.2762 | | 0.2609 | 0.2706 | | 0.2673 | 0.2629 |
| | 0.2609 | 0.2706 | | 0.2673 | 0.2629 | | 0.2747 | 0.2540 |
| | 0.2549 | 0.2592 | | 0.2618 | 0.2522 | | 0.2696 | 0.2443 |

■ Typical Optical/Electrical Characteristics Curves

(Ta=25°C Unless Otherwise Noted)



■ Reliability test standards

| Type | Test Item | REF. Standard | Test condition | Duration | Sample count | Accept |
|------|------------------------------|--------------------------|--|-------------------|--------------|--------|
| | Temperature Cycle | JESD22-A104-A | -40°C~25°C~100°C~25°C 30min,5min,30min,5min | 100 100 cycles | 22 | 0/22 |
| | Thermal shock | JESD22-A106 | -40°C~100°C 30min, 30min | 100 100 cycles | 22 | 0/22 |
| | High Temperature Storage | JEITA ED-4701 200 201 | TA=100°C ± 5°C | 1000 Hrs | 22 | 0/22 |
| | Low Temperature Storage | JEITA ED-4701 200 202 | TA=-40°C ± 5°C | 1000 Hrs | 22 | 0/22 |
| | Humidity Heat Storage | JIS C 7021 (1977)B-11 | Ta=60°C RH=85% | 1000Hrs | 22 | 0/22 |
| | Life test | JESD22-A108-A | Ta=25°C If=3500mA | 1000Hrs | 22 | 0/22 |
| | High humidity Heat life test | JESD22-A101 | Ta=60°C RH=85% If=3500mA | 1000Hrs | 22 | 0/22 |
| | Resistance to soldering Heat | JESD22-A113 | IR soldering 245°C/10sec | 1 time | 20 | 0/22 |

Precautions for use

1. Storage

- (1) The best Storage environment: temperature :5°C~30°C , Humidity:40% -80%HR
- (2) LED store after six months to be re-spectral color separation, to prevent the LED optical properties change

2. Production and application

- (1) need wear gloves when contact with led to prevent oxidation
- (2) ESD protection to be good
- (3) soldering: the pc type can use soldering iron, (the best temperature is 300°C/3sec) also can use Temperature Platform (150°C/30sec,max) the silicone type can use reflow soldering in addition to soldering iron and Temperature Platform
- (4) about Package-type silicone , It is recommended to bake before soldering when the pack is unsealed after 24h. The conditions are as following: 80°C 4-6h.
- (5) must have a good heat sinking, the temperature of the heat sink must be below 65 degree

3. Relow temp/time

| | |
|--|--|
| Solder = Low-temperature lead-free solder | Solder = Lead-free solder |
| Slope of the temperature rise = Max. 4°C/sec. | Slope of the temperature rise = Max. 4°C/sec. |
| Preheating temperature = 100°C ~ 150°C | Preheating temperature = 150°C ~ 180°C |
| Preheating time = Max. 60 sec. | Preheating time = Max. 90 sec. |
| Slope of the temperature drop = Max. 6°C/sec. | Slope of the temperature drop = Max. 6°C/sec. |
| Peak temperature = Max. 180°C | Peak temperature = Max. 220°C |
| The time of peak temperature ($\pm 5^\circ\text{C}$) should not exceed 10 sec. | The time of peak temperature ($\pm 5^\circ\text{C}$) should not exceed 10 sec. |
| The time of temperature rise of 160°C should not exceed 60 sec. | The time of temperature rise of 160°C should not exceed 60 sec. |