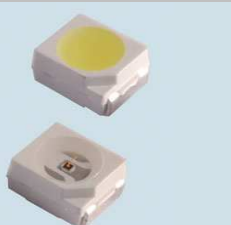


EDCON-COMPONENTS



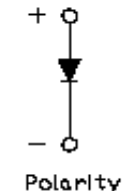
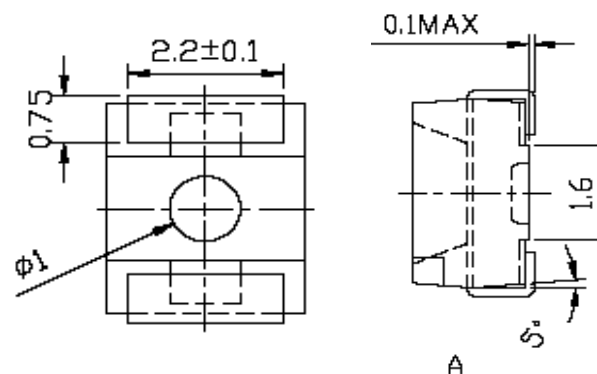
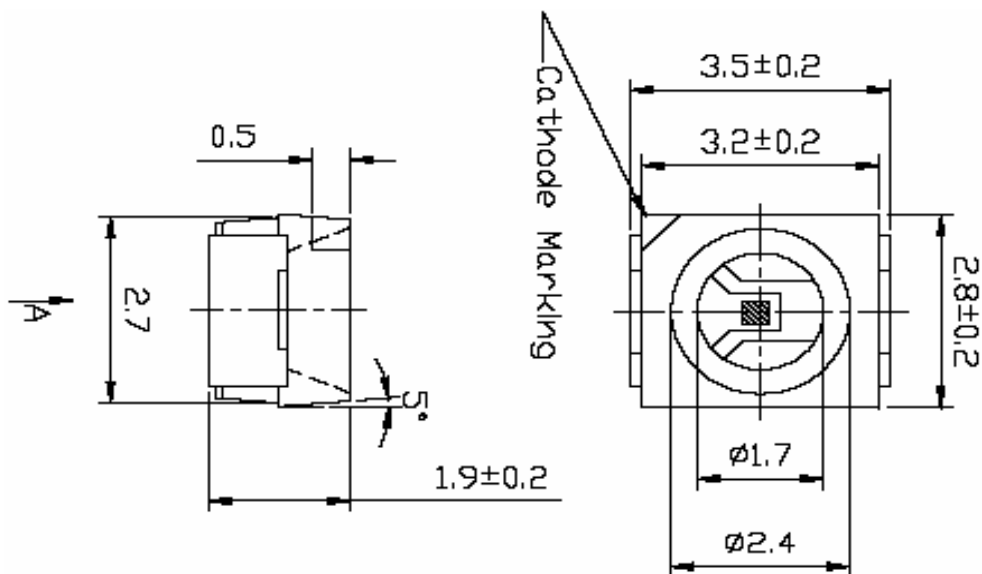
The Power of LED Light

Typical Electrical & Optical Characteristics (IF=350mA and Ta=25°C)

| Part-No. | Dominant Wavelength (nm) or CCT(K) | | Forward Voltage (V) | | Luminous Flux (mcd) | | Current (mA) | 50% Power Angle |
|-----------------|------------------------------------|------|---------------------|-----|---------------------|------|--------------|-----------------|
| | X | Y | Min | Max | Min | Typ | max | Typ |
| M11A1333 | 0,45 | 0,40 | 3,0 | 3,2 | 1300 | 2000 | 20 | 120 |

1. Tolerance of measurement of luminous flux : +/-15%
2. Tolerance of measurement of dominant Wavelength : +/-1nm
3. Tolerance of measurement of CCT (Correlated color temperature +/- 200K
4. Tolerance of measurement of forward voltage +/-0,1V

Technical Dimensions



SMD DIAMOND TOP-LED

Part No.: **M11A1333**

Customer:

Features

- Contour Lights
- Garden Lighting
- Genral Lighting
- Reading Lights

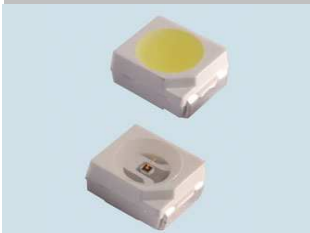
Abslut Maximum Ratings (Ta=25°C)

| Items | Symb ols | Abslut maximum Rating | Unit |
|--------------------------|----------|-----------------------|------|
| | | White | |
| Power Dissipation | Pd | 114 | mW |
| Forward Current | If | 30 | mA |
| Peak Forward Current | Ifp | 150 | Ma |
| LED Junction Temperature | Tj | | °C |
| Operating Temperature | Topr | .-40°C ~ +85°C | °C |
| Storage Temperature | Tstg | .-40°C ~ +105°C | °C |

* Pulse width ≤ 0,1msec duty ≤ 1/10

| | | | | | | | | | |
|-------|--------|------|--------|--------|--------|-----------|-----------|------|------------|
| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 |
| APPD: | Schumi | | | FINISH | Jamy | | Sheet No. | | 1 from 10 |

EDCON-COMPONENTS



The Power of LED Light



BIN GUIDE / HIGH POWER

| Code | CCT Range | | Code | CCT Range | |
|------|-----------|------|------|-----------|-------|
| | Min | Max | | Min | Max |
| A | 2700 | 2900 | M | 4900 | 5100 |
| B | 2900 | 3100 | N | 5100 | 5500 |
| C | 3100 | 3300 | P | 5500 | 6000 |
| D | 3300 | 3500 | Q | 6000 | 6500 |
| E | 3500 | 3700 | R | 6500 | 7000 |
| F | 3700 | 3900 | S | 7000 | 7500 |
| G | 3900 | 4100 | T | 7500 | 8000 |
| H | 4100 | 4300 | U | 8000 | 9000 |
| J | 4300 | 4500 | V | 9000 | 10000 |
| K | 4500 | 4700 | W | 10000 | 12000 |
| L | 4700 | 4900 | | | |

Tolerance of measurement of CCT is +/-100K.

| Color Code | B | | H | | G/E | | F | | Y | | Q/P | | R/U | | | |
|------------|--------|-----|------|-----|--------|-----|--------|-----|--------|-----|-----------|-----|-----------|-----|-----------|------------|
| | Min | max | Min | max | Min | max | Min | max | Min | max | Min | max | Min | max | | |
| D0 | 450 | 455 | 490 | 495 | 515 | 520 | 560 | 565 | 580 | 583 | 600 | 605 | 620 | 625 | | |
| D1 | 455 | 460 | 495 | 500 | 520 | 525 | 565 | 570 | 583 | 586 | 605 | 610 | 625 | 630 | | |
| D2 | 460 | 465 | 500 | 505 | 525 | 530 | 570 | 575 | 586 | 589 | 610 | 615 | 630 | 635 | | |
| D3 | 465 | 470 | 505 | 510 | 530 | 535 | 575 | 580 | 589 | 592 | 615 | 620 | 635 | 640 | | |
| D4 | 470 | 475 | 510 | 515 | 535 | 540 | | | 592 | 595 | | | 640 | 645 | | |
| D5 | 475 | 480 | | | 540 | 545 | | | 595 | 598 | | | 645 | 650 | | |
| D6 | 480 | 485 | | | 545 | 550 | | | | | | | 650 | 655 | | |
| D7 | 485 | 490 | | | 550 | 555 | | | | | | | 655 | 660 | | |
| D8 | | | | | 555 | 560 | | | | | | | 660 | 665 | | |
| DRW: | Jason | | CHKD | | Wilson | | MATL: | | Wilson | | TOLERANCE | | Mason | | DATE | 14.07.2011 |
| APPD: | Schumi | | | | | | FINISH | | Jamy | | | | Sheet No. | | 2 from 10 | |

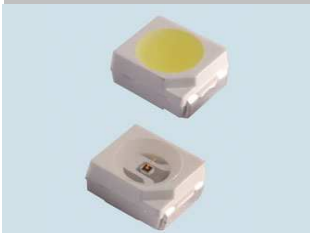
Tolerance of measurement of dominant wavelength is +/-1nm

SMD DIAMOND TOP-LED

Part No.: **M11A1333**

Customer:

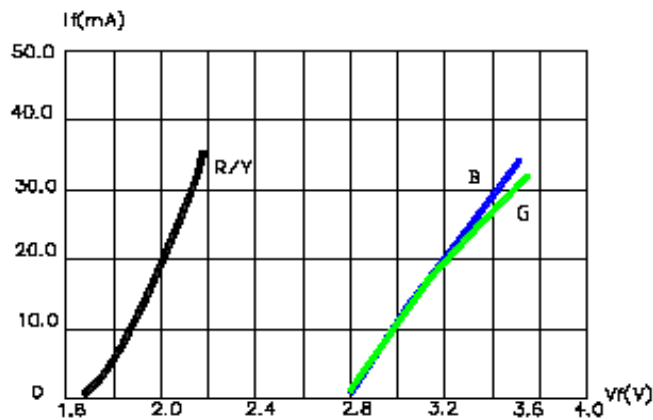
EDCON-COMPONENTS



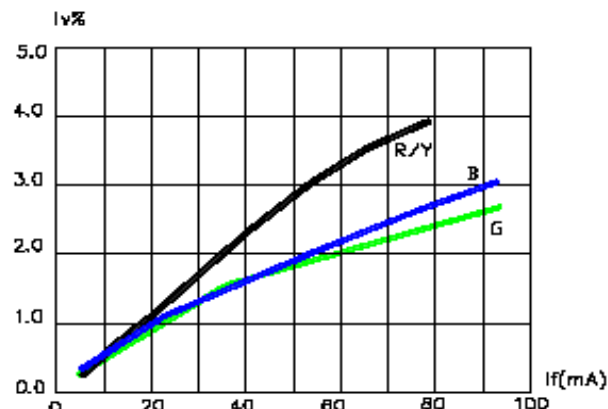
The Power of LED Light



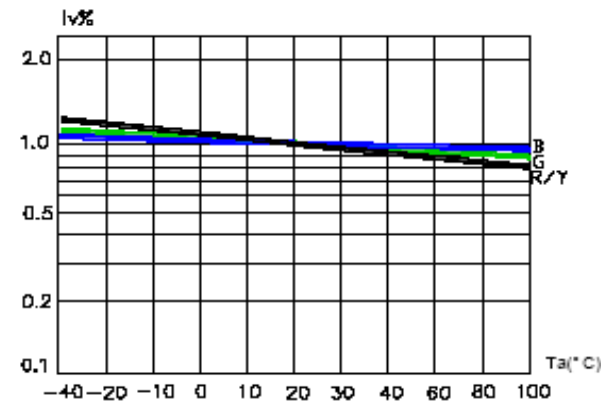
Typical Electrical / Optical Characteristics Curves (Ta=25°C Unless otherwise noted)



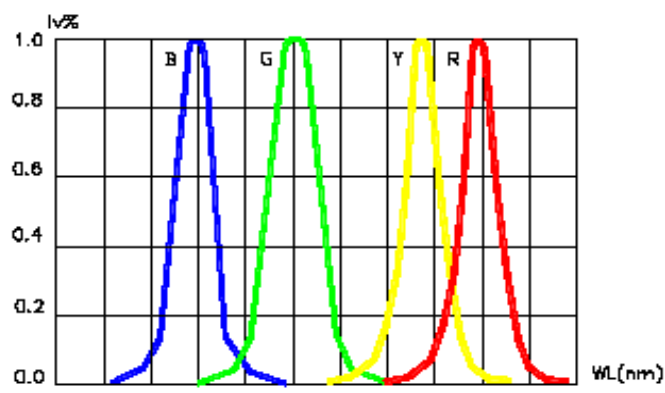
Forward Current vs. Forward Voltage



Relative Luminous Intensity vs. Forward Current



Relative Luminous Intensity vs. Ambient Temperature



Relative Luminous Intensity vs. Wavelength

| Code | Forward Voltage Rank | |
|------|----------------------|------|
| | Min. | Max. |
| A | 1,6 | 1,8 |
| B | 1,8 | 2,0 |
| C | 2,0 | 2,2 |
| D | 2,2 | 2,4 |
| E | 2,4 | 2,6 |
| F | 2,6 | 2,8 |
| G | 2,8 | 3,0 |
| H | 3,0 | 3,2 |

Tolerance of measurement of forward voltage is +/-0,1V

| Code | Forward Voltage Rank | |
|------|----------------------|------|
| | Min. | Max. |
| J | 3,20 | 3,40 |
| K | 3,40 | 3,60 |
| L | 3,60 | 3,80 |
| M | 3,80 | 4,00 |
| N | 4,00 | 4,20 |
| P | 4,20 | 4,40 |
| Q | 4,40 | 4,60 |
| R | 4,60 | 4,80 |

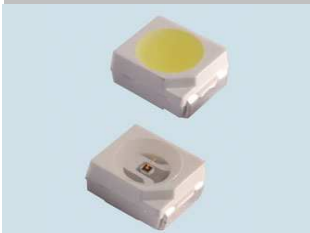
SMD DIAMOND TOP-LED

Part No.: **M11A1333**

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|-------|--------|------|--------|--------|--------|-----------|-----------|------|------------|
| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 |
| APPD: | Schumi | | | FINISH | Jamy | | Sheet No. | | 3 from 10 |

Customer:

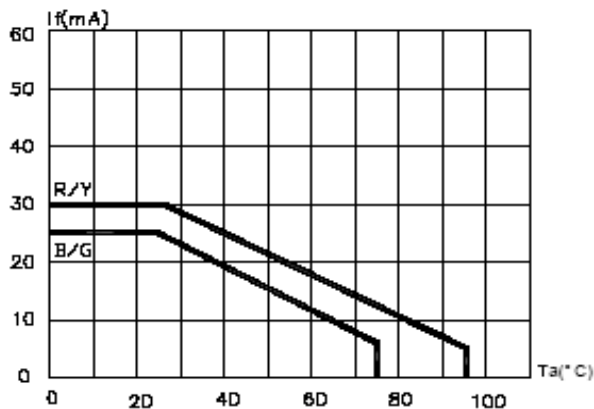
EDCON-COMPONENTS



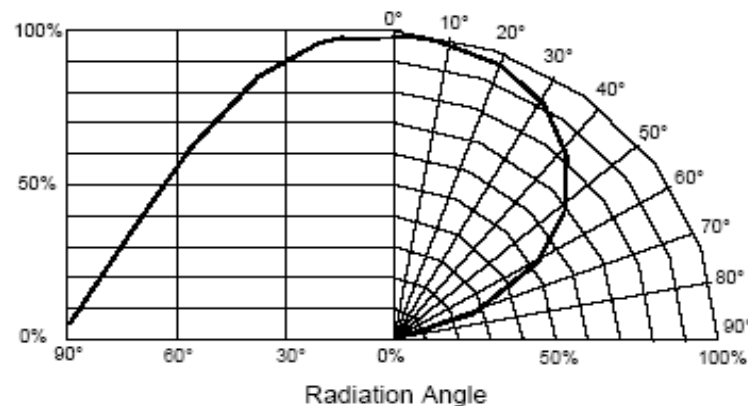
The Power of LED Light



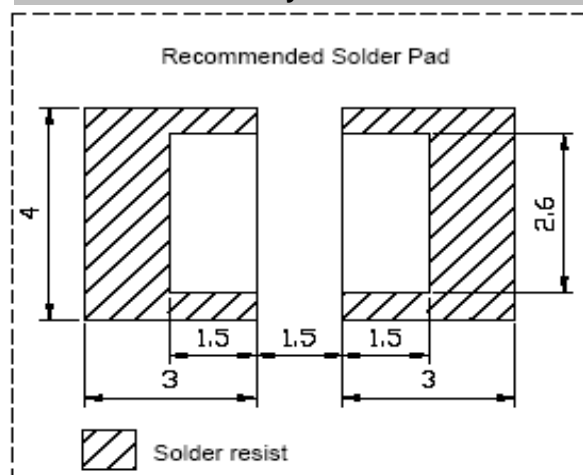
Typical Representative Spatial Radiation Paddern of single LED



Maximum Forward Current vs Ambient Temperature



PCB PAD Layout Dimensions



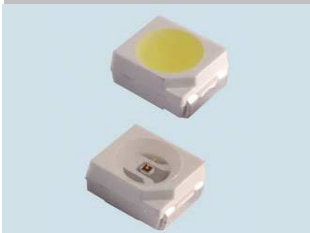
SMD DIAMOND TOP-LED

Part No.: **M11A1333**

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| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 |
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The Power of LED Light

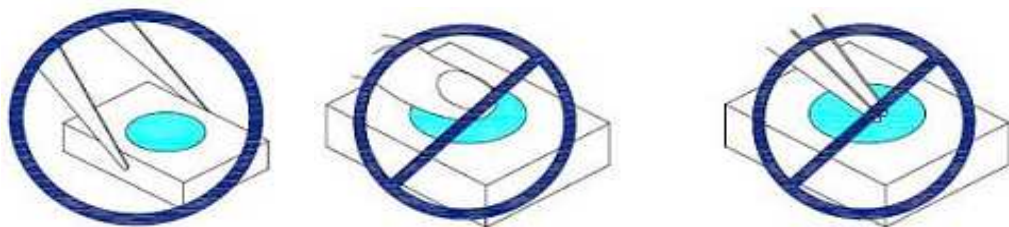


Handling Informations

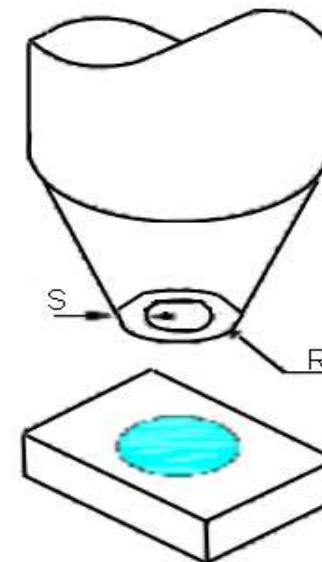
- The outer diameter of the TOP LED pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible.
- A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
- The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

- Handle the component along the side surfaces by using forceps or appropriate tools



- Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



- Do not stack together assembled PCBs containing exposed LEDs. Outside impact may scratch the silicone lens or damage the internal circuitry.



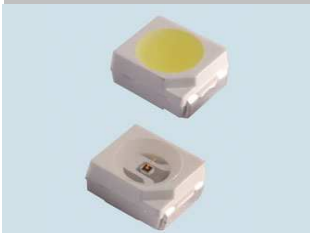
SMD DIAMOND TOP-LED

Part No.: **M11A1333**

Customer:

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|-------|--------|------|--------|--------|--------|-----------|-----------|------|------------|
| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 |
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EDCON-COMPONENTS



The Power of LED Light



Moisture Proof Packing

In Order to prevent moisture absorption into DIAMOND = TOP LED / XEON POWER during the transportation and storage. DIAMOND TOP-LED / XEON-POWER LED is packed in a moisture barrier bag. Desiccants and humidity indicator are packed together with DIAMOND TOP-LED / XEON-POWER LED as the secondary protection. The indication of humidity card provides the information of humidity within TOP Packing.

Storage

Shelf life in original sealed bag in storage condition of <math><40^{\circ}\text{C}</math> and 90% RH is 12 months. Baking is required whenever shelf life is expired. Before opening the packaging please check whether bag leak air or not. After opening the DIAMOND TOP-LED / XEON POWER LED must be stored under the condition <math><30^{\circ}\text{C}</math> and 60% RH. Under this condition DIAMOND TOP-LED / XEON POWER LED must be used (subject to reflow) within 24-hours after bag opening, and re-baking is required when exceeding 24 hours. For baking, place DIAMOND TOP-LED / XEON POWER LED in oven at temperature $75^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and relative humidity <math><10\% \text{RH}</math>, for 24 hours. Take out the material from packaging bag for re-bake. Do not open the door of oven frequently during the baking process.

Manual soldering (We do not recommend this method strongly).

No mechanical stress should be exerted on the resin portion of DIAMOND TOP-LED / XEON POWER during soldering.

Handling of DIAMOND TOP-LED / XEON POWER LED should be done when the package has been cooled down to below 40°C or less. This is to prevent the DIAMOND TOP-LED / XEON POWER failures due to the thermal-mechanical stress during handling.

Reflow soldering should not be done more than one time.

No stress should be exerted on the package during soldering.

Electrostatic Discharge and Surge current.

Electrostatic discharge (ESD) or surge current (EOS) may damage LED.

Precautions such as ESD wrist strap, ESD shoe strap or antistatic gloves must be worn whenever handling DIAMOND TOP-LED / XEON POWER LED.

All devices, equipment and machinery must be properly grounded.

It is recommended to perform electrical test to screen out ESD failures in final inspection.

It is important to eliminate the possibility of surge current during circuitry design.

Heat Management

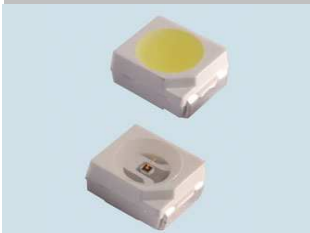
Heat management of DIAMOND TOP-LED / XEON POWER must be taken into consideration during the design stage of DIAMOND TOP-LED / XEON POWER LED application. The current should be de-rated appropriately by referring to the de-rating curve attached on each product specification.

SMD DIAMOND TOP-LED

Part No.: **M11A1333**

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|-------|--------|------|--------|--------|--------|-----------|-----------|-----------|------------|-----------|
| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 | Customer: |
| APPD: | Schumi | | | FINISH | Jamy | | Sheet No. | 6 from 10 | | |

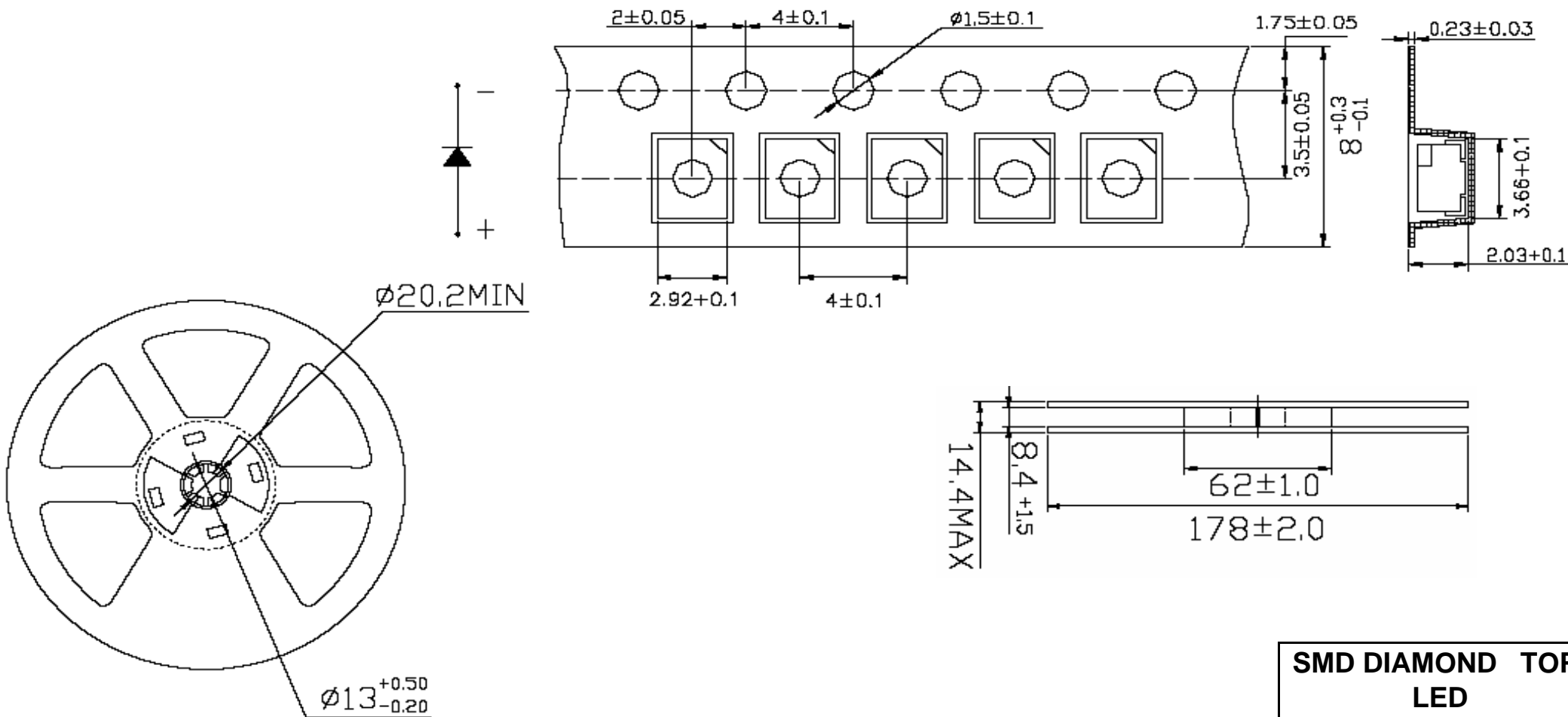
EDCON-COMPONENTS



The Power of LED Light



Packing Specifications



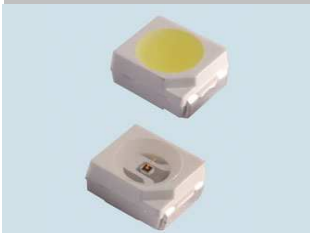
SMD DIAMOND TOP-LED

Part No.: **M11A1333**

Customer:

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|-------|--------|------|--------|--------|--------|-----------|-----------|-----------|------------|
| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 |
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The Power of LED Light



Ordering Informations

| Serie | Color Code | CCT-Range | Voltage Range | ROHS | Packing | | | | | |
|-------|------------|-----------|---------------|------|---------|--|--|--|--|--|
|-------|------------|-----------|---------------|------|---------|--|--|--|--|--|

| | | | | | | | | | | |
|-----------------|-----------|----------|----------|----------|-----------|--|--|--|--|--|
| M11A1333 | WH | B | H | R | TR | | | | | |
|-----------------|-----------|----------|----------|----------|-----------|--|--|--|--|--|

| | | | | |
|------------------|---------------------------|---------------------|------------------------|----------------------|
| WH= White | B= typ 3000 Kelvin | H= 3,0 ~ 3,2 | R= ROHS Conform | TR= TAPE REEL |
| | | | N= NON ROHS | BU= Bulk-Ware |

SMD DIAMOND TOP-LED

Part No.: **M11A1333**

| | | | | | | | | | |
|-------|--------|------|--------|--------|--------|-----------|-----------|-----------|------------|
| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 |
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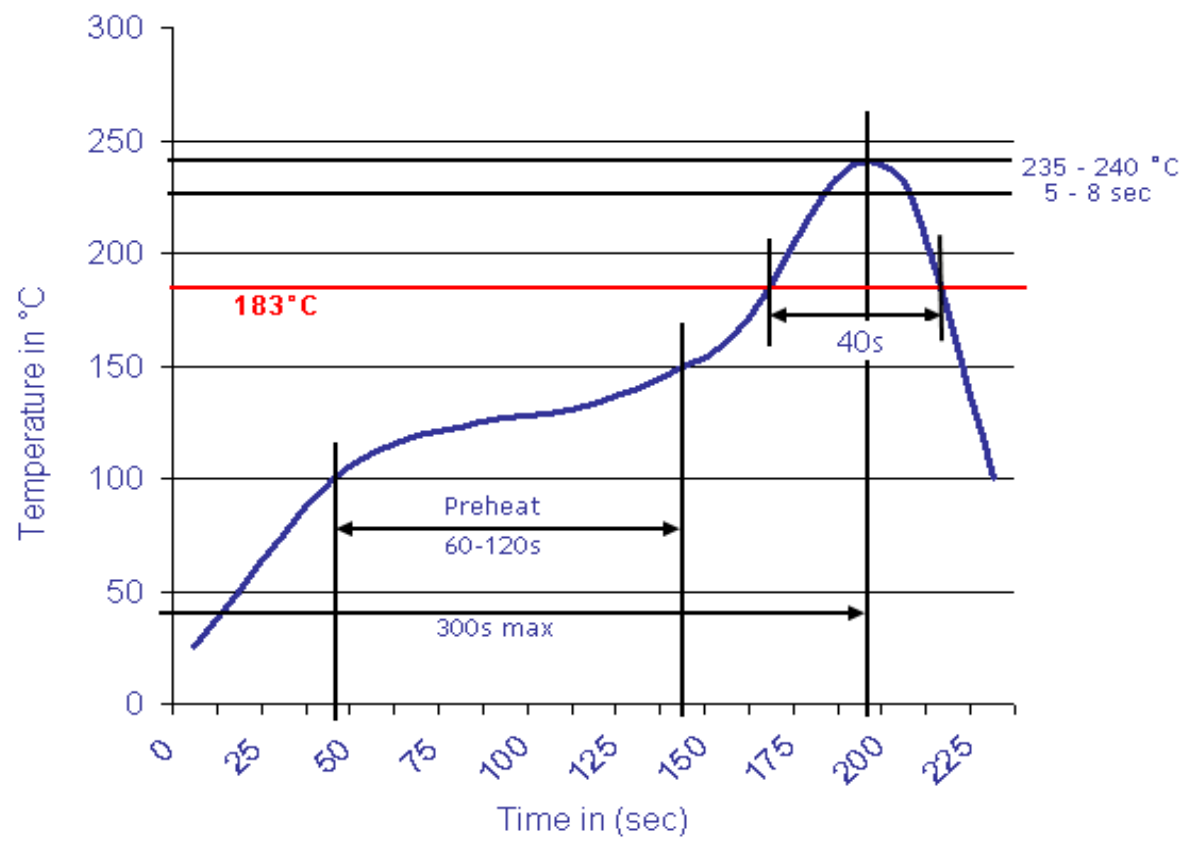


The Power of LED Light



Soldering Profile Curve

Classification Reflow Profile (JEDEC J-STD-020C)

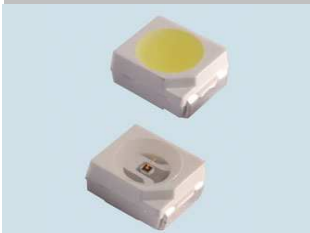


SMD DIAMOND TOP-LED

Part No.: **M11A1333**

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|-------|--------|------|--------|--------|--------|-----------|-----------|-----------|------------|
| DRW: | Jason | CHKD | Wilson | MATL: | Wilson | TOLERANCE | Mason | DATE | 14.07.2011 |
| APPD: | Schumi | | | FINISH | Jamy | | Sheet No. | 9 from 10 | Customer: |

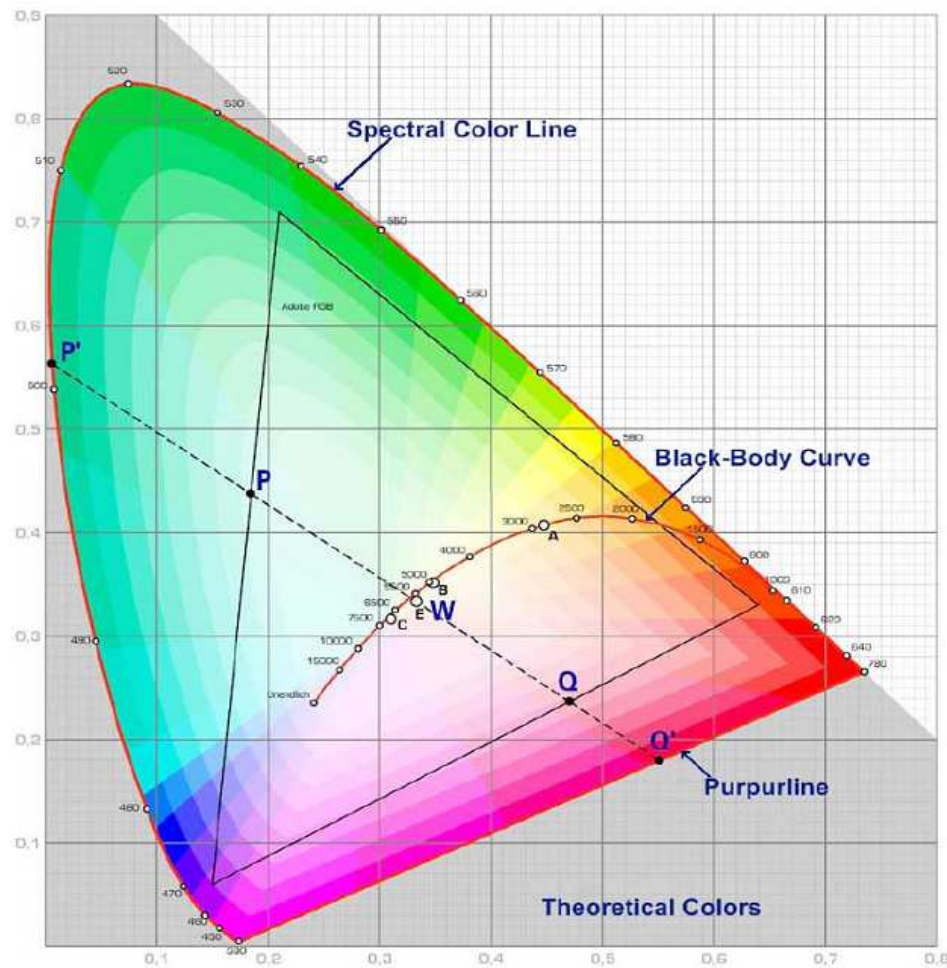
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Spectral Color Curve



SMD DIAMOND TOP-LED

Part No.: **M11A1333**

Customer:

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|-------|--------|------|--------|--------|--------|-----------|-----------|------------|------------|
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