

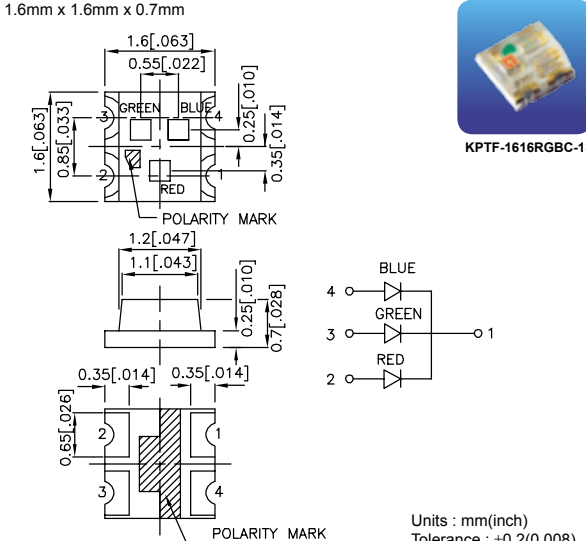
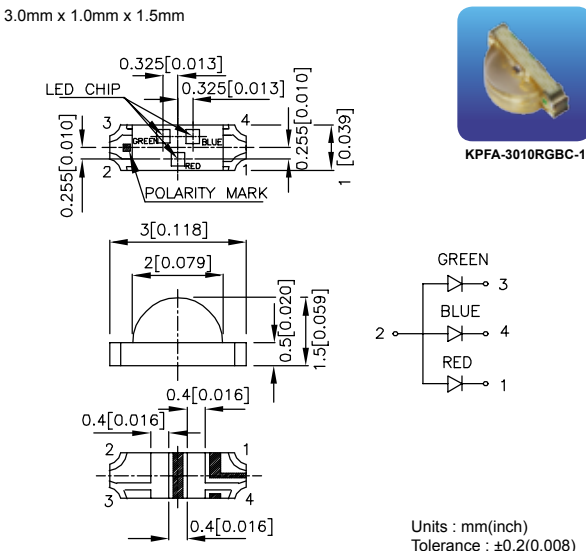
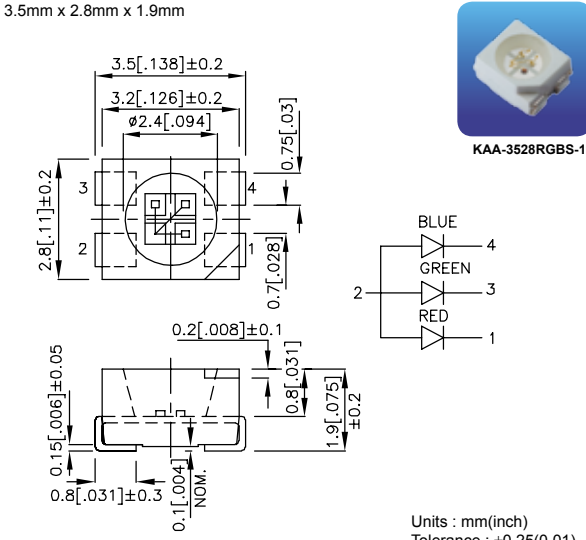
Kingbright

Optoelectronic Components

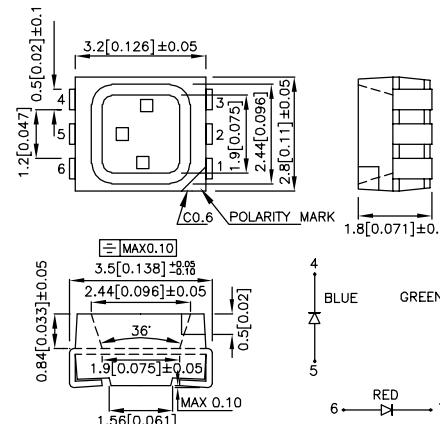
SMD LED

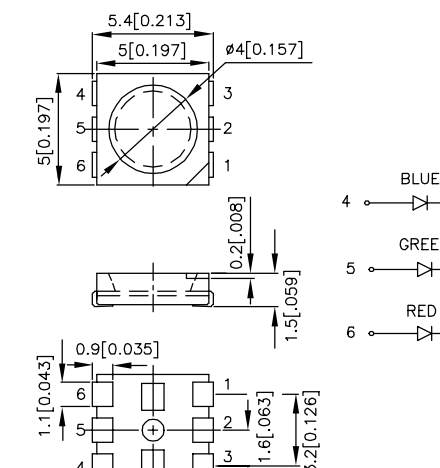
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RGB SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|------------------|----------|------------------|-------------|----------------|------|---------------------------------|---|
| | | | | Min. | Typ. | | |
| KPTF-1616RGBC-13 | AlGaInP | 625 | water clear | 200 | 360 | 120° | 1.6mm x 1.6mm x 0.7mm  |
| | InGaN | 525 | | 500 | 750 | | |
| | InGaN | 470 | | 80 | 140 | | |
| KPFA-3010RGBC-11 | AlGaInP | 621 | water clear | 80 | 140 | 120° | 3.0mm x 1.0mm x 1.5mm  |
| | InGaN | 525 | | 200 | 300 | | |
| | InGaN | 465 | | 40 | 70 | | |
| KAA-3528RGS-11 | AlGaInP | 621 | Water Clear | 120 | 220 | 120° | 3.5mm x 2.8mm x 1.9mm  |
| | InGaN | 525 | | 400 | 500 | | |
| | InGaN | 465 | | 55 | 100 | | |

RGB SMD LED


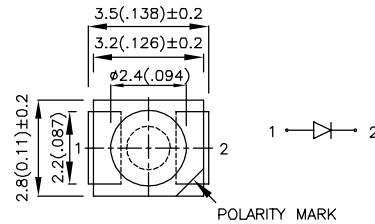
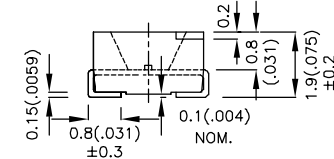
| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|---------------------|----------|------------------|-------------|----------------|------|------------------------------|---|
| | | | | Min. | Typ. | | |
| KAAF-3529RGBS-11-C3 | AlGaInP | 621 | Water Clear | 80 | 180 | 120° | 3.5mm x 2.8mm x 1.8mm  KAAF-3529-11-C3 Units : mm(inch) Tolerance : ±0.2(0.008) |
| | InGaN | 525 | | 400 | 580 | | |
| | InGaN | 465 | | 80 | 130 | | |

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @30mA *50mA | | Viewing Angle 2 θ 1/2 | Dimension |
|------------------|----------|------------------|-------------|----------------------|-------|------------------------------|---|
| | | | | Min. | Typ. | | |
| KAAF-5050RGBS-13 | AlGaInP | 625 | water clear | *1000 | *1400 | 120° | 5.0mm x 5.0mm x 1.5mm  KAAF-5050RGBS-13 Units : mm(inch) Tolerance : ±0.2(0.008) |
| | InGaN | 525 | | 1000 | 1400 | | |
| | InGaN | 470 | | 300 | 420 | | |


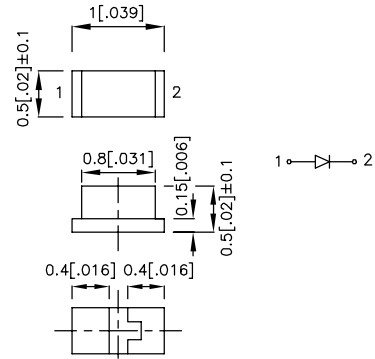

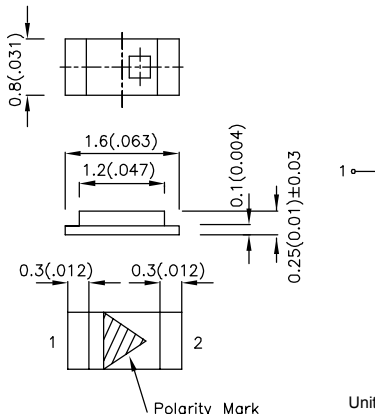
TOP-EMITTING PLCC SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle | Dimension |
|--------------------|-----------|------------------|-------------|----------------|------|---------------|--|
| | | | | Min. | Typ. | | |
| KA-2214SURSK | AlGaInP | 630 | water clear | 55 | 100 | 120° | 2.2mm x 1.4mm x 1.3mm  KA-2214  Units : mm(inch) Tolerance : ±0.2(0.008) |
| KA-2214SESK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KA-2214SYSK | AlGaInP | 590 | Water Clear | 120 | 250 | 120° | |
| KA-2214CGSK | AlGaInP | 570 | water clear | 40 | 70 | 120° | |
| KA-2214ZGS | InGaIn | 525 | water clear | 400 | 700 | 120° | |
| KA-2214QBS-D | InGaIn | 465 | water clear | 80 | 150 | 120° | |
| KA-2214VBS-D | InGaIn | 470 | water clear | 120 | 280 | 120° | |
| KA-3021ES | GaAsP/GaP | 617 | water clear | 8 | 18 | 125° | 3.0mm x 2.0 mm x 1.3mm  KA-3021  Units : mm(inch) Tolerance : ±0.2(0.08) |
| KA-3021SURSK | AlGaInP | 630 | water clear | 40 | 90 | 125° | |
| KA-3021SESK | AlGaInP | 601 | water clear | 120 | 300 | 125° | |
| KA-3021YS | GaAsP/GaP | 588 | water clear | 8 | 15 | 125° | |
| KA-3021SYSK | AlGaInP | 590 | water clear | 120 | 200 | 125° | |
| KA-3021SGS | GaP | 568 | water clear | 12 | 20 | 125° | |
| KA-3021CGSK | AlGaInP | 570 | water clear | 40 | 80 | 125° | |
| KA-3021ZGS | InGaIn | 525 | water clear | 400 | 800 | 125° | |
| KA-3021QBS-D | InGaIn | 465 | water clear | 80 | 120 | 125° | |
| KA-3021VBS-D | InGaIn | 470 | water clear | 200 | 450 | 125° | |
| KA-3022SURSK-4.5SF | AlGaInP | 630 | water clear | 40 | 80 | 120° | 3.0mm x 2.2mm x 1.5mm  KA-3022-4.5SF  Units : mm(inch) Tolerance : ±0.25(0.01) |
| KA-3022SESK-4.5SF | AlGaInP | 601 | water clear | 80 | 150 | 120° | |
| KA-3022SYSK-4.5SF | AlGaInP | 590 | water clear | 120 | 200 | 120° | |
| KA-3022CGSK-4.5SF | AlGaInP | 570 | water clear | 40 | 80 | 120° | |
| KA-3022ZGS-4.5SF | InGaIn | 525 | water clear | 400 | 600 | 120° | |
| KA-3022QBS-D-4.5SF | InGaIn | 465 | water clear | 80 | 120 | 120° | |
| KA-3022VBS-D-4.5SF | InGaIn | 470 | water clear | 200 | 450 | 120° | |

TOP-EMITTING PLCC SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|---------------|----------|------------------|-------------|----------------|------|------------------------------|--|
| | | | | Min. | Typ. | | |
| KA-3528SURCKT | AlGaInP | 630 | water clear | 55 | 100 | 120° | 3.5mm x 2.8mm x 1.9mm  KA-3528   Units : mm(inch) Tolerance : ±0.25(0.01) |
| KA-3528SECKT | AlGaInP | 601 | water clear | 120 | 230 | 120° | |
| KA-3528SYCKT | AlGaInP | 590 | water clear | 80 | 200 | 120° | |
| KA-3528CGCKT | AlGaInP | 570 | water clear | 40 | 100 | 120° | |
| KA-3528ZGCT | InGaN | 525 | water clear | 400 | 600 | 120° | |
| KA-3528QBS-D | InGaN | 465 | water clear | 80 | 150 | 120° | |
| KA-3528VBS-D | InGaN | 470 | water clear | 300 | 450 | 120° | |

TOP-EMITTING CHIP SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|-------------------|----------|------------------|-------------|----------------|------|------------------------------|--|
| | | | | Min. | Typ. | | |
| KPHHS-1005SURCK | AlGaInP | 630 | water clear | 40 | 70 | 120° | 1.0mm x 0.5mm x 0.5mm (0402)  KPHHS-1005  Units : mm(inch) Tolerance : ±0.1(0.004) |
| KPHHS-1005SECK | AlGaInP | 601 | water clear | 80 | 150 | 120° | |
| KPHHS-1005SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPHHS-1005CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPHHS-1005ZGC-V | InGaN | 525 | water clear | 200 | 450 | 120° | |
| KPHHS-1005QBC-D-V | InGaN | 465 | water clear | 40 | 60 | 120° | |
| KPG-1608SURKC-T | AlGaInP | 630 | water clear | 55 | 110 | 120° | 1.6mm x 0.8mm x 0.25mm (0603)  KPG-1608  Units : mm(inch) Tolerance : ±0.1(0.004) |
| KPG-1608SEKC-T | AlGaInP | 601 | water clear | 55 | 100 | 120° | |
| KPG-1608SYKC-T | AlGaInP | 590 | water clear | 55 | 120 | 120° | |
| KPG-1608CGKC-T | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPG-1608ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPG-1608QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | |
| KPG-1608VBC-D | InGaN | 470 | water clear | 120 | 200 | 120° | |

NOTE:
 1.KP series custom-made is available upon request.

TOP-EMITTING CHIP SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|---------------|-----------|---------------------|-------------|-------------------|------|------------------------------------|--|
| | | | | Min. | Typ. | | |
| KPH-1608EC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | <p>1.6mm x 0.8mm x 0.65mm (0603)</p> <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> |
| KPH-1608SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| KPH-1608SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPH-1608YC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | |
| KPH-1608SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPH-1608SGC | GaP | 568 | water clear | 5 | 12 | 120° | |
| KPH-1608CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPH-1608ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPH-1608QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | |
| KPH-1608VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | |
| KPT-1608EC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | <p>1.6mm x 0.8mm x 0.75mm (0603)</p> <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> |
| KPT-1608SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| KPT-1608SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPT-1608YC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | |
| KPT-1608SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPT-1608SGC | GaP | 568 | water clear | 5 | 12 | 120° | |
| KPT-1608CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPT-1608ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPT-1608QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | |
| KPT-1608VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | |
| KP-1608EC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | <p>1.6mm x 0.8mm x 1.1mm (0603)</p> <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> |
| KP-1608SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| KP-1608SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KP-1608YC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | |
| KP-1608SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KP-1608SGC | GaP | 568 | water clear | 5 | 12 | 120° | |
| KP-1608CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KP-1608ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KP-1608QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | |
| KP-1608VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | |


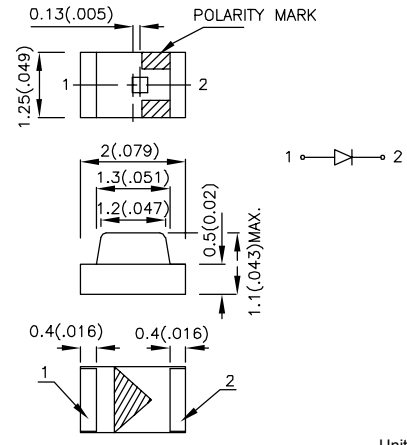

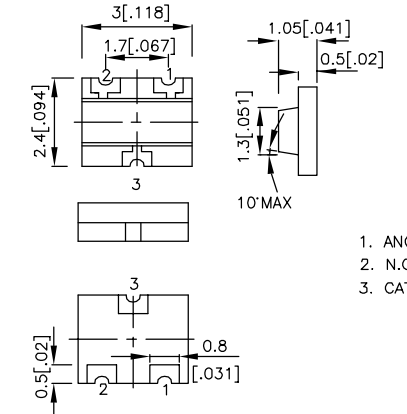
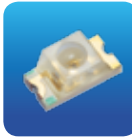
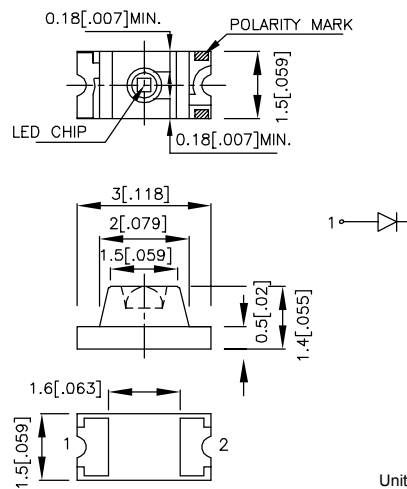
NOTE:
1.KP series custom-made is available upon request.

TOP-EMITTING CHIP SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle | Dimension |
|-----------------|-----------|------------------|-------------|----------------|------|---------------|--|
| | | | | Min. | Typ. | | |
| KPTD-1608SURCK | AlGaInP | 630 | water clear | 80 | 250 | 60° | <p>1.6mm x 0.8mm x 0.95mm (Dome Lens)</p> <p>Units : mm(inch) Tolerance : $\pm 0.15(0.006)$</p> |
| KPTD-1608SECK | AlGaInP | 601 | water clear | 200 | 500 | 60° | |
| KPTD-1608SYCK | AlGaInP | 590 | water clear | 200 | 450 | 60° | |
| KPTD-1608CGCK | AlGaInP | 570 | water clear | 80 | 190 | 60° | |
| KPTD-1608ZGC | InGaN | 525 | water clear | 500 | 1000 | 60° | |
| KPTD-1608ZGC-G | InGaN | 525 | water clear | 700 | 1300 | 60° | |
| KPTD-1608QBC-D | InGaN | 465 | water clear | 80 | 200 | 40° | |
| KPTD-1608QBC-G | InGaN | 465 | water clear | 200 | 350 | 40° | |
| KPHCM-2012SURCK | AlGaInP | 630 | water clear | 40 | 80 | 110° | <p>2.0mm x 1.25mm x 0.4mm (0805)</p> <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> |
| KPHCM-2012SECK | AlGaInP | 601 | water clear | 80 | 180 | 110° | |
| KPHCM-2012SYCK | AlGaInP | 590 | water clear | 80 | 150 | 110° | |
| KPHCM-2012CGCK | AlGaInP | 570 | water clear | 20 | 50 | 110° | |
| KPHCM-2012ZGC | InGaN | 525 | water clear | 200 | 400 | 110° | |
| KPHCM-2012QBC-D | InGaN | 465 | water clear | 40 | 100 | 110° | |
| KPHCM-2012VBC-D | InGaN | 470 | water clear | 120 | 180 | 110° | |
| KPT-2012EC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | <p>2.0mm x 1.25mm x 0.75mm (0805)</p> <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> |
| KPT-2012SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| KPT-2012SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPT-2012YC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | |
| KPT-2012SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPT-2012SGC | GaP | 568 | water clear | 5 | 12 | 120° | |
| KPT-2012CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPT-2012ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPT-2012QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | |
| KPT-2012VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | |


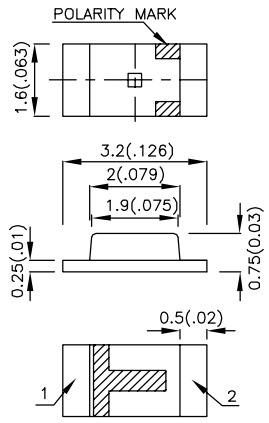
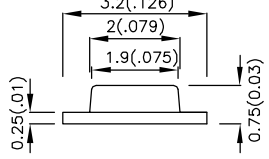
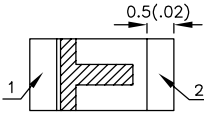

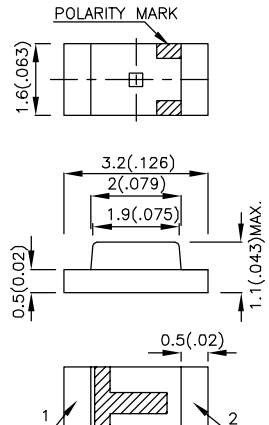
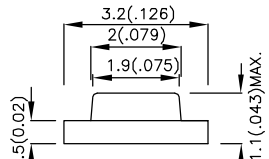
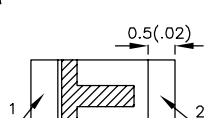
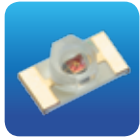
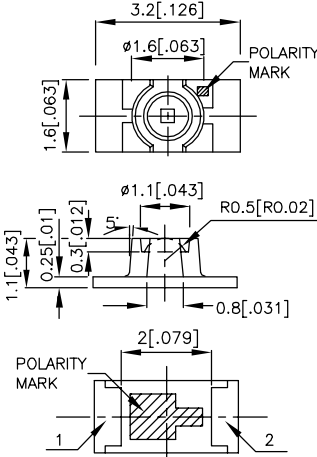
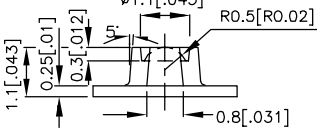
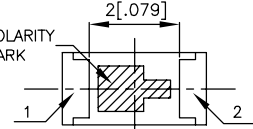
NOTE:
1.KP series custom-made is available upon request.

TOP-EMITTING CHIP SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension | |
|---------------|-----------|------------------|-------------|----------------|------|------------------------------|--|--|
| | | | | Min. | Typ. | | | |
| KP-2012EC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | 2.0mm x 1.25mm x 1.1mm (0805)  KP-2012  Units : mm(inch) Tolerance : ±0.1(0.004) | |
| KP-2012SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | | |
| KP-2012SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | | |
| KP-2012YC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | | |
| KP-2012SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | | |
| KP-2012SGC | GaP | 568 | water clear | 5 | 12 | 120° | | |
| KP-2012CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | | |
| KP-2012ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | | |
| KP-2012QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | | |
| KP-2012VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | | |
| KP-23SURCK-F | AlGaInP | 630 | water clear | 40 | 70 | 120° | | 3.0mm x 2.4mm x 1.05mm  KP-23-F  Units : mm(inch) Tolerance : ±0.2(0.008) |
| KP-23SECK-F | AlGaInP | 601 | water clear | 120 | 230 | 120° | | |
| KP-23SYCK-F | AlGaInP | 590 | water clear | 80 | 150 | 120° | | |
| KP-23CGCK-F | AlGaInP | 570 | water clear | 20 | 50 | 120° | | |
| KP-23ZGC-F | InGaN | 525 | water clear | 200 | 400 | 120° | | |
| KP-23QBC-D-F | InGaN | 465 | water clear | 55 | 100 | 120° | | |
| KP-23VBC-D-F | InGaN | 470 | water clear | 120 | 180 | 120° | | |
| KPL-3015EC | GaAsP/GaP | 617 | water clear | 5 | 12 | 70° | 3.0mm x 1.5mm x 1.4mm (1106)  KPL-3015  Units : mm(inch) Tolerance : ±0.2(0.008) | |
| KPL-3015SURCK | AlGaInP | 630 | water clear | 120 | 180 | 70° | | |
| KPL-3015SECK | AlGaInP | 601 | water clear | 120 | 350 | 70° | | |
| KPL-3015SYCK | AlGaInP | 590 | water clear | 200 | 350 | 70° | | |
| KPL-3015YC | GaAsP/GaP | 588 | water clear | 8 | 14 | 70° | | |
| KPL-3015SGC | GaP | 568 | water clear | 8 | 18 | 70° | | |
| KPL-3015CGCK | AlGaInP | 570 | water clear | 55 | 120 | 70° | | |
| KPL-3015ZGC | InGaN | 525 | water clear | 500 | 800 | 70° | | |
| KPL-3015QBC-D | InGaN | 465 | water clear | 120 | 200 | 70° | | |
| KPL-3015VBC-D | InGaN | 470 | water clear | 300 | 400 | 70° | | |

NOTE:
1.KP series custom-made is available upon request.

TOP-EMITTING CHIP SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension | |
|----------------|-----------|---------------------|-------------|-------------------|------|------------------------------------|---|---|
| | | | | Min. | Typ. | | | |
| KPT-3216EC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | <p>3.2mm x 1.6mm x 0.75mm (1206)</p>  <p>KPT-3216</p>    <p>Units : mm(inch) Tolerance : $\pm 0.2(0.008)$</p> | |
| KPT-3216SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | | |
| KPT-3216SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | | |
| KPT-3216YC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | | |
| KPT-3216SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | | |
| KPT-3216SGC | GaP | 568 | water clear | 5 | 12 | 120° | | |
| KPT-3216CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | | |
| KPT-3216ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | | |
| KPT-3216QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | | |
| KPT-3216VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | | |
| KP-3216EC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | | <p>3.2mm x 1.6mm x 1.1mm (1206)</p>  <p>KP-3216</p>    <p>Units : mm(inch) Tolerance : $\pm 0.2(0.008)$</p> |
| KP-3216SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | | |
| KP-3216SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | | |
| KP-3216YC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | | |
| KP-3216SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | | |
| KP-3216SGC | GaP | 568 | water clear | 5 | 12 | 120° | | |
| KP-3216CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | | |
| KP-3216ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | | |
| KP-3216QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | | |
| KP-3216VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | | |
| KPTL-3216SURCK | AlGaInP | 630 | water clear | 120 | 230 | 70° | <p>3.2mm x 1.6mm x 1.1mm (1206)</p>  <p>KPTL-3216</p>    <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> | |
| KPTL-3216SECK | AlGaInP | 601 | water clear | 200 | 350 | 70° | | |
| KPTL-3216SYCK | AlGaInP | 590 | water clear | 200 | 350 | 70° | | |
| KPTL-3216CGCK | AlGaInP | 570 | water clear | 55 | 100 | 70° | | |
| KPTL-3216ZGC | InGaN | 525 | water clear | 500 | 1100 | 70° | | |
| KPTL-3216ZGC-G | InGaN | 525 | water clear | 700 | 1500 | 70° | | |
| KPTL-3216QBC-D | InGaN | 465 | water clear | 80 | 250 | 70° | | |
| KPTL-3216VBC-D | InGaN | 470 | water clear | 400 | 600 | 70° | | |

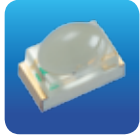
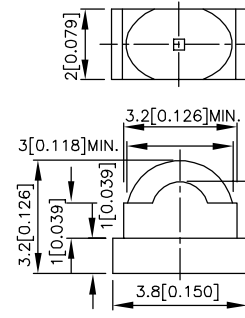
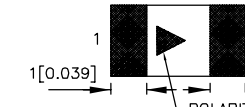
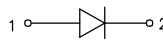
NOTE:
1.KP series custom-made is available upon request.

TOP-EMITTING CHIP SMD LED


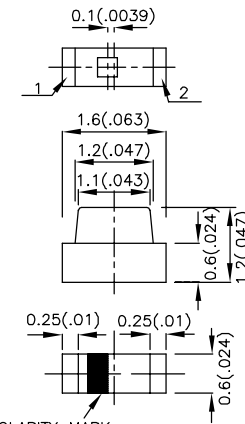
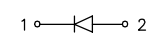

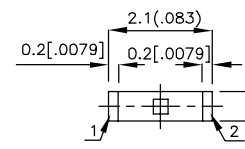
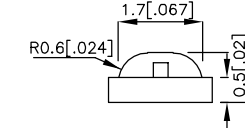
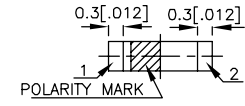
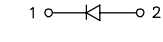
| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|----------------|----------|------------------|-------------|----------------|------|------------------------------|---|
| | | | | Min. | Typ. | | |
| KPTD-3216SURCK | AlGaInP | 630 | water clear | 300 | 800 | 35° | <p>3.2mm x 1.6mm x 1.8mm (1206 Dome Lens)</p> <p>Units : mm(inch) Tolerance : $\pm 0.2(0.008)$</p> |
| KPTD-3216SECK | AlGaInP | 601 | water clear | 500 | 1000 | 35° | |
| KPTD-3216SYCK | AlGaInP | 590 | water clear | 700 | 800 | 35° | |
| KPTD-3216CGCK | AlGaInP | 570 | water clear | 120 | 300 | 35° | |
| KPTD-3216ZGC | InGaN | 525 | water clear | 1300 | 2300 | 35° | |
| KPTD-3216ZGC-G | InGaN | 525 | water clear | 3100 | 4200 | 35° | |
| KPTD-3216QBC-D | InGaN | 465 | water clear | 300 | 700 | 35° | |
| KPTD-3216VBC-D | InGaN | 470 | water clear | 700 | 1200 | 35° | |
| KPD-3224SURCK | AlGaInP | 630 | water clear | 700 | 1500 | 20° | <p>3.2mm x 2.4mm x 2.4mm (Dome Lens)</p> <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> |
| KPD-3224SECK | AlGaInP | 601 | water clear | 1000 | 1600 | 20° | |
| KPD-3224SYCK | AlGaInP | 590 | water clear | 1000 | 1300 | 20° | |
| KPD-3224CGCK | AlGaInP | 570 | water clear | 400 | 600 | 20° | |
| KPD-3224ZGC | InGaN | 525 | water clear | 1900 | 3000 | 20° | |
| KPD-3224ZGC-G | InGaN | 525 | water clear | 3600 | 6000 | 20° | |
| KPD-3224QBC-D | InGaN | 465 | water clear | 400 | 800 | 20° | |
| KPD-3224QBC-G | InGaN | 465 | water clear | 700 | 1400 | 20° | |
| KPD-3224VBC-D | InGaN | 470 | water clear | 1600 | 2000 | 20° | |
| KPED-3528SURCK | AlGaInP | 630 | water clear | 120 | 250 | 40° | <p>3.5mm x 2.8mm x 3.2mm (Dome Lens)</p> <p>Units : mm(inch) Tolerance : $\pm 0.2(0.008)$</p> |
| KPED-3528SECK | AlGaInP | 601 | water clear | 400 | 700 | 40° | |
| KPED-3528SYCK | AlGaInP | 590 | water clear | 300 | 500 | 40° | |
| KPED-3528CGCK | AlGaInP | 570 | water clear | 80 | 200 | 40° | |
| KPED-3528ZGC | InGaN | 525 | water clear | 1000 | 1600 | 40° | |
| KPED-3528ZGC-G | InGaN | 525 | water clear | 1900 | 3200 | 40° | |
| KPED-3528QBC-D | InGaN | 465 | water clear | 300 | 400 | 40° | |
| KPED-3528QBC-G | InGaN | 465 | water clear | 500 | 800 | 40° | |
| KPED-3528VBC-D | InGaN | 470 | water clear | 500 | 750 | 40° | |

NOTE:
1.KP series custom-made is available upon request.

TOP-EMITTING CHIP SMD LED


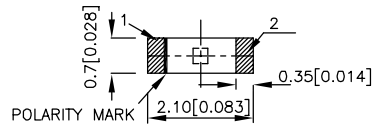
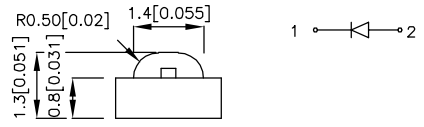
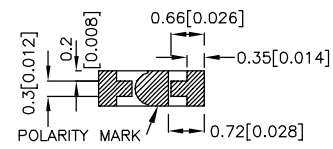

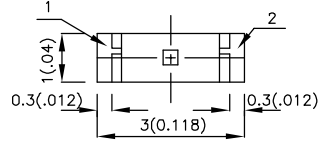
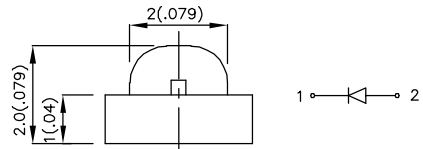
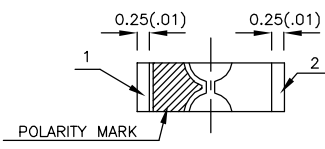

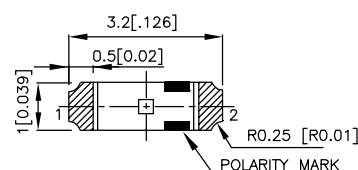
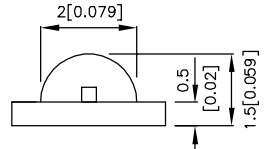
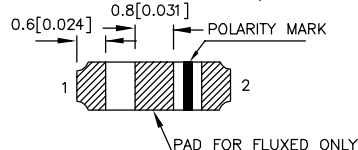
| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|----------------|----------|------------------|-------------|----------------|------|------------------------------|--|
| | | | | Min. | Typ. | | |
| KPED-3820SURCK | AlGaInP | 630 | water clear | 120 | 350 | 60°(H) 35°(V) | 3.8mm x 2.0mm x 3.2mm (Dome Lens)  KPED-3820   POLARITY MARK  Units : mm (inch) Tolerance : $\pm 0.2(0.008)$ |
| KPED-3820SECK | AlGaInP | 601 | water clear | 300 | 600 | 60°(H) 35°(V) | |
| KPED-3820SYCK | AlGaInP | 590 | water clear | 200 | 400 | 60°(H) 35°(V) | |
| KPED-3820CGCK | AlGaInP | 570 | water clear | 80 | 150 | 60°(H) 35°(V) | |
| KPED-3820ZGC | InGaN | 525 | water clear | 700 | 1300 | 60°(H) 35°(V) | |
| KPED-3820ZGC-G | InGaN | 525 | water clear | 1900 | 2700 | 60°(H) 35°(V) | |
| KPED-3820QBC-D | InGaN | 465 | water clear | 120 | 250 | 60°(H) 35°(V) | |
| KPED-3820QBC-G | InGaN | 465 | water clear | 400 | 600 | 60°(H) 35°(V) | |
| KPED-3820VBC-D | InGaN | 470 | water clear | 500 | 750 | 60°(H) 35°(V) | |

RIGHT ANGLE SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|---------------|-----------|------------------|-------------|----------------|------|------------------------------|--|
| | | | | Min. | Typ. | | |
| KPA-1606EC | GaAsP/GaP | 617 | water clear | 3 | 6 | 110° | 1.6mm x 0.6mm x 1.2mm (0602 Right Angle)  KPA-1606  POLARITY MARK  Units : mm (inch) Tolerance : $\pm 0.1(0.004)$ |
| KPA-1606SURCK | AlGaInP | 630 | water clear | 40 | 80 | 110° | |
| KPA-1606SECK | AlGaInP | 601 | water clear | 80 | 180 | 110° | |
| KPA-1606YC | GaAsP/GaP | 588 | water clear | 3 | 6 | 110° | |
| KPA-1606SYCK | AlGaInP | 590 | water clear | 80 | 150 | 110° | |
| KPA-1606SGC | GaP | 568 | water clear | 5 | 12 | 110° | |
| KPA-1606CGCK | AlGaInP | 570 | water clear | 20 | 50 | 110° | |
| KPA-1606ZGC | InGaN | 525 | water clear | 200 | 400 | 110° | |
| KPA-1606ZGC-G | InGaN | 525 | water clear | 400 | 650 | 110° | |
| KPA-1606QBC-D | InGaN | 465 | water clear | 40 | 80 | 110° | |
| KPA-1606QBC-G | InGaN | 465 | water clear | 80 | 150 | 110° | |
| KPA-1606VBC-D | InGaN | 470 | water clear | 120 | 200 | 110° | |
| KPA-2106SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | 2.1mm x 0.6mm x 1.0mm (0802 Right Angle)  KPA-2106    POLARITY MARK  Units : mm (inch) Tolerance : $\pm 0.1(0.004)$ |
| KPA-2106SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPA-2106SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPA-2106CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPA-2106ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPA-2106ZGC-G | InGaN | 525 | water clear | 400 | 650 | 120° | |
| KPA-2106QBC-D | InGaN | 465 | water clear | 40 | 80 | 120° | |
| KPA-2106QBC-G | InGaN | 465 | water clear | 80 | 150 | 120° | |
| KPA-2106VBC-D | InGaN | 470 | water clear | 120 | 200 | 120° | |


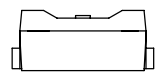
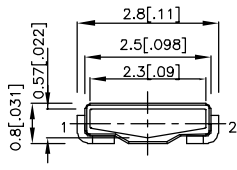
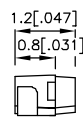
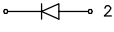

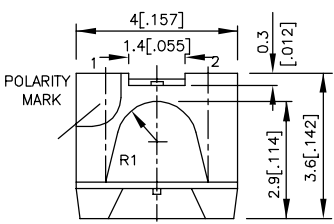
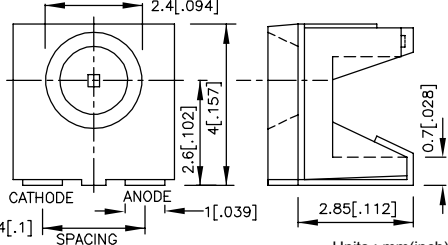
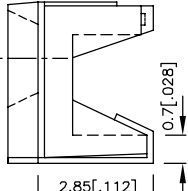
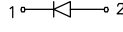
NOTE:
1.KP series custom-made is available upon request.

RIGHT ANGLE SMD LED


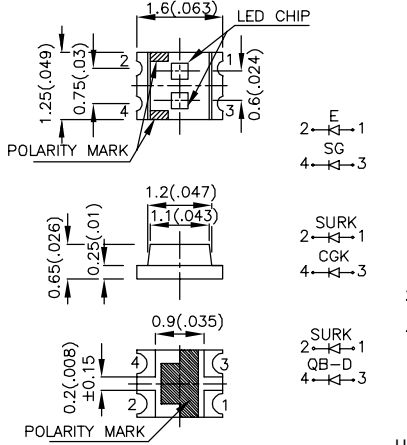

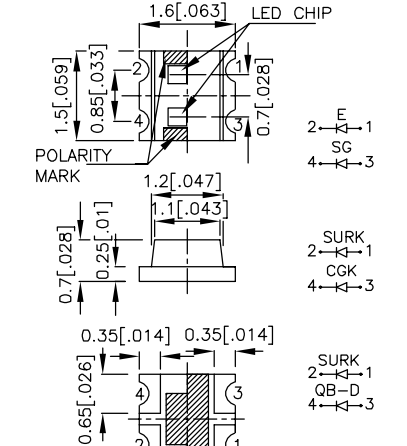

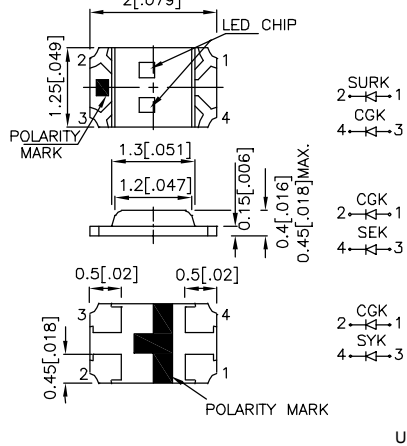
| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|----------------|-----------|------------------|-------------|----------------|------|------------------------------|--|
| | | | | Min. | Typ. | | |
| KPJA-2107SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | 2.1mm x 0.7mm x 1.3mm (0802 Right Angle)     <p>Units : mm(inch) Tolerance : ±0.15(0.006)</p> |
| KPJA-2107SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPJA-2107SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPJA-2107CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPJA-2107ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPJA-2107ZGC-G | InGaN | 525 | water clear | 400 | 650 | 120° | |
| KPJA-2107QBC-D | InGaN | 465 | water clear | 40 | 80 | 120° | |
| KPJA-2107QBC-G | InGaN | 465 | water clear | 80 | 150 | 120° | |
| KPJA-2107VBC-D | InGaN | 470 | water clear | 120 | 200 | 120° | |
| KPA-3010EC | GaAsP/GaP | 617 | water clear | 3 | 6 | 120° | 3.0mm x 1.0mm x 2.0mm (1104 Right Angle)     <p>Units : mm(inch) Tolerance : ±0.15(0.006)</p> |
| KPA-3010SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| KPA-3010SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPA-3010YC | GaAsP/GaP | 588 | water clear | 3 | 6 | 120° | |
| KPA-3010SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPA-3010SGC | GaP | 568 | water clear | 5 | 12 | 120° | |
| KPA-3010CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPA-3010ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPA-3010ZGC-G | InGaN | 525 | water clear | 400 | 650 | 120° | |
| KPA-3010QBC-D | InGaN | 465 | water clear | 40 | 80 | 120° | |
| KPA-3010QBC-G | InGaN | 465 | water clear | 80 | 150 | 120° | |
| KPA-3010VBC-D | InGaN | 470 | water clear | 120 | 200 | 120° | |
| KPA-3210SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | 3.2mm x 1.0mm x 1.5mm (1304 Right Angle)     <p>Units : mm(inch) Tolerance : ±0.1(0.004)</p> |
| KPA-3210SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPA-3210SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPA-3210CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPA-3210ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPA-3210ZGC-G | InGaN | 525 | water clear | 400 | 650 | 120° | |
| KPA-3210QBC-D | InGaN | 465 | water clear | 40 | 80 | 120° | |
| KPA-3210QBC-G | InGaN | 465 | water clear | 80 | 150 | 120° | |
| KPA-3210VBC-D | InGaN | 470 | water clear | 120 | 200 | 120° | |

NOTE:
1.KP series custom-made is available upon request.

RIGHT ANGLE SMD LED


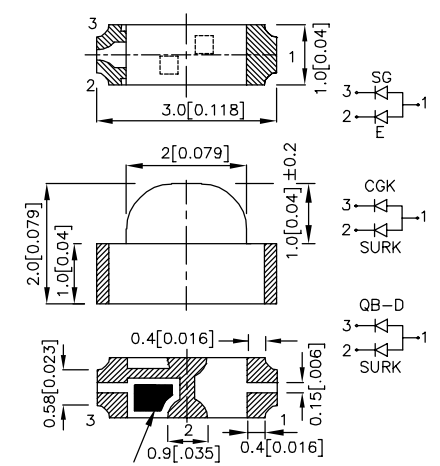

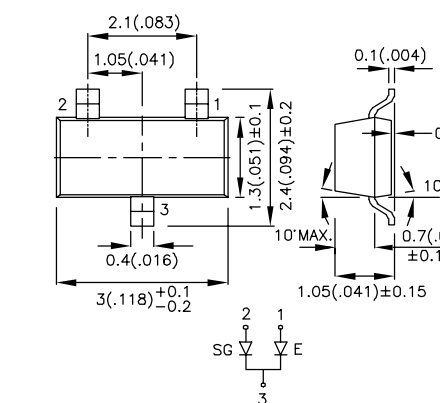
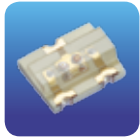
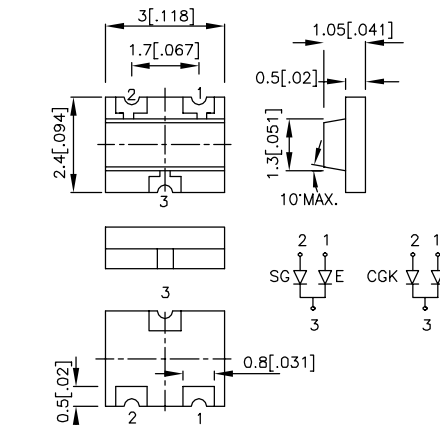
| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|---------------|----------|---------------------|-------------|-------------------|------|------------------------------------|--|
| | | | | Min. | Typ. | | |
| KA-2810ASURSK | AlGaInP | 630 | water clear | 40 | 100 | 110° | 2.8mm x 0.8mm (Right Angle)      <p>Units : mm(inch) Tolerance : $\pm 0.1(0.004)$</p> |
| KA-2810ASESK | AlGaInP | 601 | water clear | 120 | 250 | 110° | |
| KA-2810ASYSK | AlGaInP | 590 | water clear | 120 | 200 | 110° | |
| KA-2810ACGSK | AlGaInP | 570 | water clear | 20 | 60 | 110° | |
| KA-2810AZGS | InGaN | 525 | water clear | 400 | 700 | 110° | |
| KA-2810AZGS-G | InGaN | 525 | water clear | 700 | 1200 | 110° | |
| KA-2810AQBS-D | InGaN | 465 | water clear | 80 | 150 | 110° | |
| KA-2810AQBS-G | InGaN | 465 | water clear | 200 | 300 | 110° | |
| KA-2810AVBS-D | InGaN | 470 | water clear | 200 | 350 | 110° | |
| KA-4008SURSK | AlGaInP | 630 | water clear | 55 | 90 | 120° | |
| KA-4008SESK | AlGaInP | 601 | water clear | 80 | 160 | 120° | |
| KA-4008SYSK | AlGaInP | 590 | water clear | 80 | 200 | 120° | |
| KA-4008ZGS | InGaN | 525 | water clear | 400 | 600 | 120° | |
| KA-4008ZGS-G | InGaN | 525 | water clear | 700 | 1200 | 120° | |
| KA-4008QBS-D | InGaN | 465 | water clear | 55 | 120 | 120° | |
| KA-4008QBS-G | InGaN | 465 | water clear | 200 | 300 | 120° | |
| KA-4008VBS-D | InGaN | 470 | water clear | 300 | 450 | 120° | |
| KA-4040SURSK | AlGaInP | 630 | water clear | 80 | 150 | 120° | 4.0mm x 4.0mm (Right Angle)      <p>Units : mm(inch) Tolerance : $\pm 0.25(0.01)$</p> |
| KA-4040SESK | AlGaInP | 601 | water clear | 80 | 220 | 120° | |
| KA-4040SYSK | AlGaInP | 590 | water clear | 120 | 250 | 120° | |
| KA-4040CGSK | AlGaInP | 570 | water clear | 40 | 90 | 120° | |
| KA-4040ZGS | InGaN | 525 | water clear | 400 | 800 | 120° | |
| KA-4040ZGS-G | InGaN | 525 | water clear | 700 | 1200 | 120° | |
| KA-4040QBS-D | InGaN | 465 | water clear | 80 | 220 | 120° | |
| KA-4040QBS-G | InGaN | 465 | water clear | 200 | 350 | 120° | |
| KA-4040VBS-D | InGaN | 470 | water clear | 300 | 500 | 120° | |

MULTI-COLOR SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|--------------------|-----------|------------------|-------------|----------------|------|------------------------------|---|
| | | | | Min. | Typ. | | |
| KPTB-1612ESGC | GaAsP/GaP | 617 | water clear | 3 | 7 | 120° | 1.6mm x 1.25mm x 0.65mm (0605 Bi-Color)  KPTB-1612  LED CHIP POLARITY MARK Units : mm(inch) Tolerance : ±0.2(0.008) |
| | GaP | 568 | | 5 | 12 | | |
| KPTB-1612SURKCGKC | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| | AlGaInP | 570 | | 20 | 50 | | |
| KPTB-1612SURKQBDC | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| | InGaN | 465 | | 40 | 80 | | |
| KPTB-1612SYKCGKC | AlGaInP | 590 | water clear | 80 | 120 | 120° | |
| | AlGaInP | 570 | | 20 | 50 | | |
| KPTB-1612QBDSEKC | InGaN | 465 | water clear | 40 | 80 | 120° | |
| | AlGaInP | 601 | | 80 | 150 | | |
| KPTB-1615ESGC | GaAsP/GaP | 617 | water clear | 3 | 7 | 120° | 1.6mm x 1.5mm x 0.7mm (0606 Bi-Color)  KPTB-1615  LED CHIP POLARITY MARK Units : mm(inch) Tolerance : ±0.2(0.008) |
| | GaP | 568 | | 5 | 12 | | |
| KPTB-1615SURKCGKC | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| | AlGaInP | 570 | | 20 | 50 | | |
| KPTB-1615SURKQBDC | AlGaInP | 630 | water clear | 40 | 80 | 120° | |
| | InGaN | 465 | | 40 | 80 | | |
| KPTB-1615YSGC | GaAsP/GaP | 588 | water clear | 3 | 8 | 120° | |
| | GaP | 568 | | 5 | 12 | | |
| KPTB-1615SYKCGKC | AlGaInP | 590 | water clear | 80 | 120 | 120° | |
| | AlGaInP | 570 | | 20 | 50 | | |
| KPHBM-2012SURKCGKC | AlGaInP | 630 | water clear | 40 | 80 | 120° | 2.0mm x 1.25mm x 0.45mm (Bi-Color)  KPHBM-2012  LED CHIP POLARITY MARK Units : mm(inch) Tolerance : ±0.1(0.004) |
| | AlGaInP | 570 | | 20 | 50 | | |
| KPHBM-2012CGKSEKC | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| | AlGaInP | 601 | | 80 | 180 | | |
| KPHBM-2012CGKSYKC | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| | AlGaInP | 590 | | 80 | 120 | | |
| KPHBM-2012QBDSURKC | InGaN | 465 | water clear | 40 | 80 | 120° | |
| | AlGaInP | 630 | | 40 | 80 | | |
| KPHBM-2012QBDCGKC | InGaN | 465 | water clear | 40 | 80 | 120° | |
| | AlGaInP | 570 | | 20 | 50 | | |


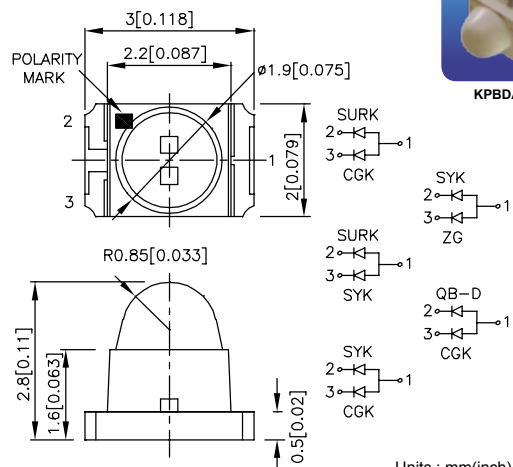

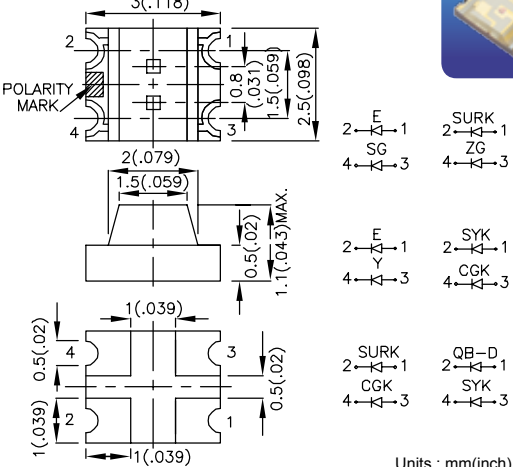

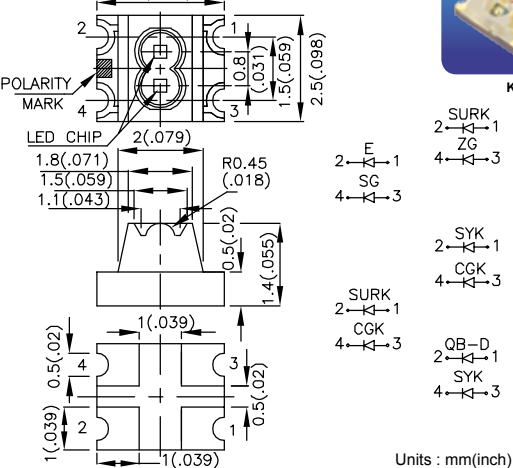
NOTE:
1.KP series custom-made is available upon request.

MULTI-COLOR SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension | |
|-------------------|-----------|------------------|-------------|----------------|------|------------------------------|--|--|
| | | | | Min. | Typ. | | | |
| KPBA-3010ESGC | GaAsP/GaP | 617 | water clear | 3 | 8 | 140° | <p>3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)</p>  <p>KPBA-3010</p>  <p>Units : mm(inch) Tolerance : $\pm 0.15(0.006)$</p> | |
| | GaP | 568 | | 5 | 15 | | | |
| KPBA-3010SURKCGKC | AlGaInP | 630 | water clear | 40 | 80 | 140° | | |
| | AlGaInP | 570 | | 40 | 70 | | | |
| KPBA-3010SURKQBDC | AlGaInP | 630 | water clear | 40 | 80 | 140° | | |
| | InGaN | 465 | | 40 | 90 | | | |
| KPBA-3010SEKCGKC | AlGaInP | 601 | water clear | 80 | 150 | 140° | | |
| | AlGaInP | 570 | | 40 | 70 | | | |
| KPBA-3010SYKCGKC | AlGaInP | 590 | water clear | 80 | 120 | 140° | | |
| | AlGaInP | 570 | | 40 | 70 | | | |
| KM-23ESGC | GaAsP/GaP | 617 | water clear | 3 | 5 | 140° | <p>SOT-23 Surface Mount LED Lamp (3mm x 1.3mm)</p>  <p>KM-23ESG</p>  <p>Units : mm(inch) Tolerance : $\pm 0.25(0.01)$</p> | |
| | GaP | 568 | | 5 | 10 | | | |
| KP-23ESGC | GaAsP/GaP | 617 | water clear | 3 | 6 | 120° | | <p>3.0mm x 2.4mm x 1.05mm</p>  <p>KP-23xxx</p>  <p>Units : mm(inch) Tolerance : $\pm 0.2(0.008)$</p> |
| | GaP | 568 | | 5 | 12 | | | |
| KP-23SURKCGKC | AlGaInP | 630 | water clear | 40 | 80 | 120° | | |
| | AlGaInP | 570 | | 40 | 70 | | | |

NOTE:
1.KP series custom-made is available upon request.

MULTI-COLOR SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|------------------------|-----------|------------------|-------------|----------------|------|------------------------------|--|
| | | | | Min. | Typ. | | |
| KPBD A-3020SURKCGKC-PF | AlGaInP | 630 | water clear | 120 | 300 | 15° | <p>3.0mm x 2.0mm x 2.8mm (Right Angle, Dome Lens)</p>  <p>KPBD A-3020-PF</p>  <p>Units : mm(inch) Tolerance : ±0.2(0.008)</p> |
| | AlGaInP | 570 | | 120 | 300 | | |
| KPBD A-3020SURKSYKC-PF | AlGaInP | 630 | water clear | 120 | 300 | 15° | |
| | AlGaInP | 590 | | 400 | 700 | | |
| KPBD A-3020SYKCGKC-PF | AlGaInP | 590 | water clear | 500 | 900 | 15° | |
| | AlGaInP | 570 | | 120 | 300 | | |
| KPBD A-3020SYKZGC-PF | AlGaInP | 590 | water clear | 500 | 900 | 15° | |
| | InGaN | 525 | | 400 | 800 | | |
| KPBD A-3020QBDCGKC-PF | InGaN | 465 | water clear | 120 | 300 | 15° | |
| | AlGaInP | 570 | | 120 | 300 | | |
| KP B-3025ESGC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | <p>3.0mm x 2.5mm x 1.1mm (1109 Bi-Color)</p>  <p>KP B-3025</p>  <p>Units : mm(inch) Tolerance : ±0.2(0.008)</p> |
| | GaP | 568 | | 8 | 15 | | |
| KP B-3025EYC | GaAsP/GaP | 617 | water clear | 3 | 8 | 120° | |
| | GaAsP/GaP | 588 | | 5 | 10 | | |
| KP B-3025SURKCGKC | AlGaInP | 630 | water clear | 40 | 70 | 120° | |
| | AlGaInP | 570 | | 20 | 60 | | |
| KP B-3025SURKZGC | AlGaInP | 630 | water clear | 40 | 70 | 120° | |
| | InGaN | 525 | | 200 | 350 | | |
| KP B-3025SYKCGKC | AlGaInP | 590 | water clear | 80 | 120 | 120° | |
| | AlGaInP | 570 | | 20 | 60 | | |
| KP B-3025QBDSYKC | InGaN | 465 | water clear | 55 | 80 | 120° | |
| | AlGaInP | 590 | | 80 | 120 | | |
| KPBL-3025ESGC | GaAsP/GaP | 617 | water clear | 8 | 15 | 100° | <p>3.0mm x 2.5mm x 1.4mm (1109 Bi-Color)</p>  <p>KPBL-3025</p>  <p>Units : mm(inch) Tolerance : ±0.2(0.008)</p> |
| | GaP | 568 | | 12 | 20 | | |
| KPBL-3025SURKCGKC | AlGaInP | 630 | water clear | 80 | 200 | 100° | |
| | AlGaInP | 570 | | 55 | 120 | | |
| KPBL-3025SURKZGC | AlGaInP | 630 | water clear | 80 | 200 | 100° | |
| | InGaN | 525 | | 400 | 800 | | |
| KPBL-3025SYKCGKC | AlGaInP | 590 | water clear | 200 | 400 | 100° | |
| | AlGaInP | 570 | | 55 | 120 | | |
| KPBL-3025QBDSYKC | InGaN | 465 | water clear | 120 | 250 | 100° | |
| | AlGaInP | 590 | | 200 | 400 | | |


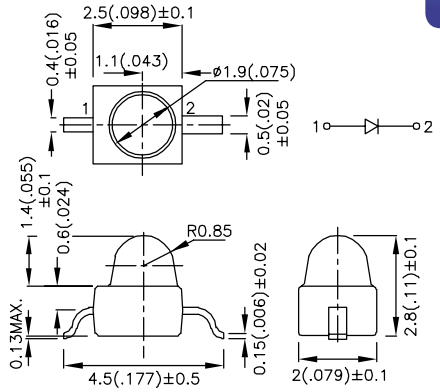

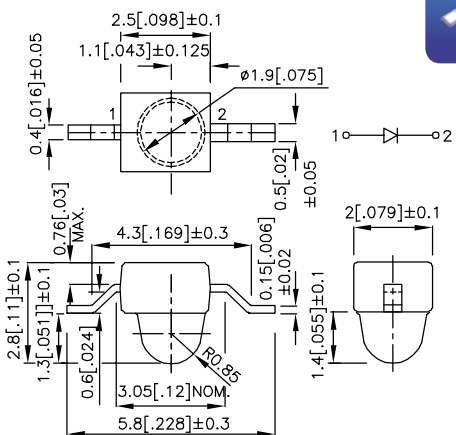
NOTE:
1.KP series custom-made is available upon request.

MULTI-COLOR SMD LED


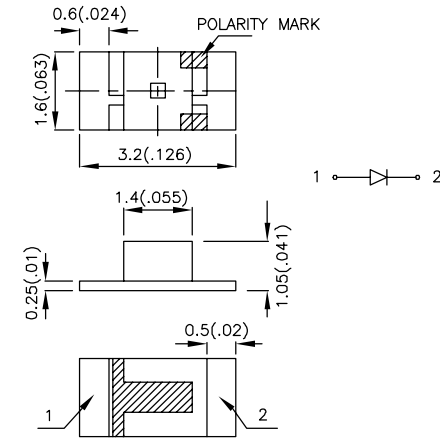
| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle | Dimension |
|-------------------|-----------|------------------|-------------|----------------|------|---------------|--|
| | | | | Min. | Typ. | | |
| KPBD-3224ESGC | GaAsP/GaP | 617 | water clear | 12 | 40 | 20° | <p>3.2mm x 2.4mm x 2.4mm (Dome Lens)</p> <p>Units : mm(inch) Tolerance : ±0.1(0.004)</p> |
| | GaP | 568 | | 20 | 55 | | |
| KPBD-3224SURKCGKC | AlGaInP | 630 | water clear | 120 | 400 | 20° | |
| | AlGaInP | 570 | | 80 | 280 | | |
| KPBD-3224SURKZGC | AlGaInP | 630 | water clear | 120 | 400 | 20° | |
| | InGaN | 525 | | 500 | 950 | | |
| KPBD-3224SURKSYKC | AlGaInP | 630 | water clear | 120 | 400 | 20° | |
| | AlGaInP | 590 | | 300 | 600 | | |
| KPBD-3224SYKCGKC | AlGaInP | 590 | water clear | 400 | 800 | 20° | |
| | AlGaInP | 570 | | 80 | 280 | | |
| KPBD-3224QBDSEKC | InGaN | 465 | water clear | 120 | 300 | 20° | |
| | AlGaInP | 601 | | 300 | 400 | | |
| KA-2735SURKCGKS | AlGaInP | 630 | water clear | 55 | 100 | 120° | <p>2.7mm x 3.5mm (Bi-Color)</p> <p>Units : mm(inch) Tolerance : ±0.25(0.01)</p> |
| | AlGaInP | 570 | | 40 | 65 | | |
| KAA-3528ESGS | GaAsP/GaP | 617 | water clear | 8 | 15 | 120° | <p>3.5mm x 2.8mm</p> <p>Units : mm(inch) Tolerance : ±0.25(0.01)</p> |
| | GaP | 568 | | 12 | 30 | | |
| KAA-3528SURKCGKS | AlGaInP | 630 | water clear | 55 | 100 | 120° | |
| | AlGaInP | 570 | | 40 | 80 | | |
| KAA-3528SURKSYKS | AlGaInP | 630 | water clear | 55 | 100 | 120° | |
| | AlGaInP | 590 | | 120 | 240 | | |

NOTE:
1.KP series custom-made is available upon request.

SUBMINIATURE SMD LED


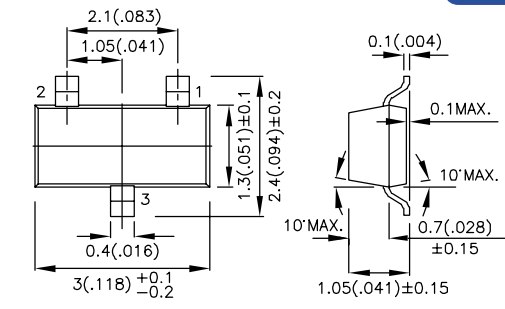
| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle | Dimension |
|---------------|-----------|------------------|-------------|----------------|------|---------------|--|
| | | | | Min. | Typ. | | |
| KM2520EC03 | GaAsP/GaP | 617 | water clear | 20 | 50 | 20° | Subminiature Solid State Lamps Gull Wing Lead  KM2520xxx03  Units : mm(inch) Tolerance : ±0.25(0.01) |
| KM2520SURCK03 | AlGaInP | 630 | water clear | 500 | 1000 | 20° | |
| KM2520SECK03 | AlGaInP | 601 | water clear | 1000 | 1800 | 20° | |
| KM2520YC03 | GaAsP/GaP | 588 | water clear | 20 | 50 | 20° | |
| KM2520SYCK03 | AlGaInP | 590 | water clear | 1300 | 2300 | 20° | |
| KM2520SGC03 | GaP | 568 | water clear | 40 | 90 | 20° | |
| KM2520CGCK03 | AlGaInP | 570 | water clear | 400 | 800 | 20° | |
| KM2520ZGC03 | InGaN | 525 | water clear | 1900 | 3000 | 20° | |
| KM2520ZGC-G03 | InGaN | 525 | water clear | 3600 | 5000 | 20° | |
| KM2520QBC-D03 | InGaN | 465 | water clear | 300 | 900 | 20° | |
| KM2520QBC-G03 | InGaN | 465 | water clear | 700 | 1300 | 20° | |
| KM2520VBC-D03 | InGaN | 470 | water clear | 1000 | 1600 | 20° | |
| KM2520SURCK08 | AlGaInP | 630 | water clear | 500 | 1000 | 20° | |
| KM2520SECK08 | AlGaInP | 601 | water clear | 1000 | 1800 | 20° | |
| KM2520SYCK08 | AlGaInP | 590 | water clear | 1300 | 2300 | 20° | |
| KM2520CGCK08 | AlGaInP | 570 | water clear | 400 | 800 | 20° | |
| KM2520ZGC08 | InGaN | 525 | water clear | 1900 | 3000 | 20° | |
| KM2520QBC-D08 | InGaN | 465 | water clear | 300 | 900 | 20° | |
| KM2520QBC-G08 | InGaN | 465 | water clear | 700 | 1300 | 20° | |
| KM2520VBC-D08 | InGaN | 470 | water clear | 1000 | 1600 | 20° | |
| KM2520EC09 | GaAsP/GaP | 617 | water clear | 20 | 50 | 20° | Subminiature Solid State Lamps Z-Bend Lead  KM2520xxx09  Units : mm(inch) Tolerance : ±0.25(0.01) |
| KM2520SURCK09 | AlGaInP | 630 | water clear | 500 | 1000 | 20° | |
| KM2520SECK09 | AlGaInP | 601 | water clear | 1000 | 1800 | 20° | |
| KM2520YC09 | GaAsP/GaP | 588 | water clear | 20 | 50 | 20° | |
| KM2520SYCK09 | AlGaInP | 590 | water clear | 1300 | 2300 | 20° | |
| KM2520SGC09 | GaP | 568 | water clear | 40 | 90 | 20° | |
| KM2520CGCK09 | AlGaInP | 570 | water clear | 400 | 800 | 20° | |
| KM2520ZGC09 | InGaN | 525 | water clear | 1900 | 3000 | 20° | |
| KM2520ZGC-G09 | InGaN | 525 | water clear | 3600 | 5000 | 20° | |
| KM2520QBC-D09 | InGaN | 465 | water clear | 300 | 900 | 20° | |
| KM2520QBC-G09 | InGaN | 465 | water clear | 700 | 1300 | 20° | |
| KM2520VBC-D09 | InGaN | 470 | water clear | 1000 | 1600 | 20° | |

REVERSE MOUNT SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|----------------|----------|------------------|-------------|----------------|------|------------------------------|---|
| | | | | Min. | Typ. | | |
| KPTR-3216SURCK | AlGaInP | 630 | water clear | 40 | 80 | 120° | 3.2mm x 1.6mm x 1.05mm (1206 Reverse Mount)  KPTR-3216  Units : mm(inch) Tolerance : $\pm 0.2(0.008)$ |
| KPTR-3216SECK | AlGaInP | 601 | water clear | 80 | 180 | 120° | |
| KPTR-3216SYCK | AlGaInP | 590 | water clear | 80 | 150 | 120° | |
| KPTR-3216CGCK | AlGaInP | 570 | water clear | 20 | 50 | 120° | |
| KPTR-3216ZGC | InGaN | 525 | water clear | 200 | 400 | 120° | |
| KPTR-3216ZGC-G | InGaN | 525 | water clear | 400 | 750 | 120° | |
| KPTR-3216QBC-D | InGaN | 465 | water clear | 40 | 100 | 120° | |
| KPTR-3216QBC-G | InGaN | 465 | water clear | 80 | 160 | 120° | |
| KPTR-3216VBC-D | InGaN | 470 | water clear | 120 | 180 | 120° | |

NOTE:
 1.KP series custom-made is available upon request.

SOT-23 SMD LED

| Part Number | Material | λ_D (nm) | Lens Type | Iv (mcd) @20mA | | Viewing Angle 2 θ 1/2 | Dimension |
|--------------|-----------|------------------|-------------|----------------|------|------------------------------|---|
| | | | | Min. | Typ. | | |
| KM-23EC-F | GaAsP/GaP | 617 | water clear | 3 | 5 | 140° | SOT-23 Surface Mount LED Lamp (3mm x 1.3mm)  KM-23-F  1. ANODE 2. N.C 3. CATHODE Units : mm(inch) Tolerance : $\pm 0.25(0.01)$ |
| KM-23SURCK-F | AlGaInP | 630 | water clear | 40 | 60 | 140° | |
| KM-23YC-F | GaAsP/GaP | 588 | water clear | 3 | 8 | 140° | |
| KM-23SYCK-F | AlGaInP | 590 | water clear | 80 | 120 | 140° | |
| KM-23SGC-F | GaP | 568 | water clear | 5 | 10 | 140° | |
| KM-23CGCK-F | AlGaInP | 570 | water clear | 20 | 50 | 140° | |
| KM-23ZGC-F | InGaN | 525 | water clear | 200 | 300 | 140° | |
| KM-23ZGC-G-F | InGaN | 525 | water clear | 400 | 500 | 140° | |
| KM-23QBC-D-F | InGaN | 465 | water clear | 40 | 70 | 140° | |
| KM-23QBC-G-F | InGaN | 465 | water clear | 80 | 150 | 140° | |
| KM-23VBC-D-F | InGaN | 470 | water clear | 120 | 170 | 140° | |

AMBIENT LIGHT SENSOR

Part Number

KPS-3227SP1C

**Electrical And Radiant Characteristics
(Ta =25°C,Unless Otherwise Specified)**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test Condition |
|--------------------------------------|----------------------|------|------|------|------|---|
| Collector Emitter Breakdown Voltage | BVceo | 60 | - | - | V | I _{ceo} =100μA |
| Emitter Collector Breakdown Voltage | BVeco | 4 | - | - | V | I _{eco} =100μA |
| Collector Dark Current | I _D | - | 10 | 100 | nA | V _{CE} =5V E _V =0Lx |
| Angle Of half Sensitivity | 2θ1/2 | - | 120 | - | ° | - |
| Light Current(1) | I _{PH1} | - | 6 | - | μA | V _{CE} =5V,E _V =100 Lx ⁽¹⁾ |
| Light Current(2) | I _{PH2} | - | 130 | - | μA | V _{CE} =5V,E _V =1000 Lx ⁽¹⁾ |
| Light Current(3) | I _{PH3} | - | 950 | - | μA | V _{CE} =5V,E _V =1000 Lx ⁽²⁾ |
| Light Current(4) | I _{PH4} | - | 420 | - | μA | V _{CE} =5V,E _V =1000 Lx ⁽³⁾ |
| Saturation Output Voltage | V _o | 4.5 | 4.7 | - | V | V _{CC} =5V,E _V =1000Lx ⁽¹⁾ , R _L =75KΩ |
| Peak Wavelength | λ _P | - | 580 | - | nm | - |
| Response Wavelength | λ | 390 | - | 700 | nm | >10% Response |
| Collector Emitter Saturation Voltage | V _{CE(sat)} | - | - | 0.4 | V | I _C =10 mA |

Notes:
 1.White Fluorescent light (Color Temperature = 6200K) is used as light source.
 2.Illuminance by CIE standard illuminant-A/2856K,incandescent lamp.
 3.Sunlight (Color Temperature = 4600K) is used as light source.

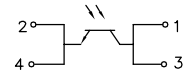
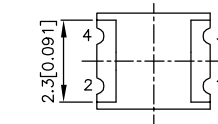
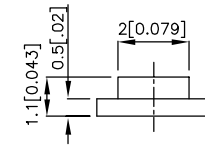
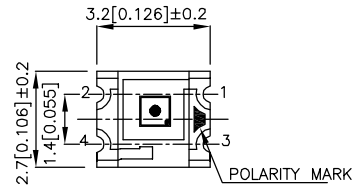
Dimension

KPS-3227SP1C 3.2mm x 2.7mm x 1.1mm

(Ambient Light Sensor)



KPS-3227SP1C



1,3 Collector
2,4 Emitter

Units : mm(inch)
Tolerance : ±0.1(0.004)

COLOR SENSOR

Part Number

KPS-5130PD7C

**Electrical And Radiant Characteristics
(Ta =25°C,Unless Otherwise Specified)**

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit | |
|---|------------------|--|-------|----------------------|-------|-----------------|---|
| Peak Sensitivity Wavelength | λ _P | Red | - | 620 | - | nm | |
| | | Green | - | 550 | - | | |
| | | Blue | - | 470 | - | | |
| Light Current (1) | I _{L1} | 100Lux [1] VR =5V | Red | - | 0.039 | μA | |
| | | | Green | - | 0.042 | | - |
| | | | Blue | - | 0.022 | | - |
| Light Current (2) | I _{L2} | 1000Lux [1] VR =5V | Red | - | 0.427 | V | |
| | | | Green | - | 0.498 | | - |
| | | | Blue | - | 0.262 | | - |
| Diameter of the irradiation sensitive area | D | | - | 2.0 | - | mm | |
| Irradiation sensitive area per element | A | | - | 0.85 | - | mm ² | |
| Photo sensibility of the single color areas | S _{Max} | λ _R =620 nm λ _G =550 nm λ _B =470 nm | - | 0.33 0.25 0.18 | - | A/W | |
| Reverse Dark Current | I _D | VR =5V | - | - | 10 | nA | |

Note:
 1.White fluorescent light (Color Temperature = 6500K) is used as light source.

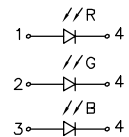
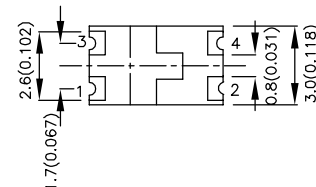
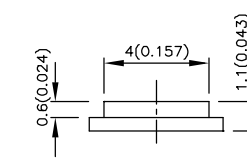
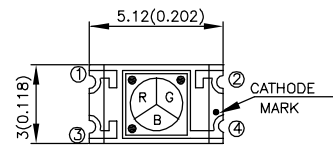
Dimension

KPS-5130PD7C 5.12mm x 3mm x 1.1mm

(RGB Color Sensor)



KPS-5130PD7C



4. Cathode
1,2,3. Anode

Units : mm(inch)
Tolerance : ±0.1(0.004)