

Kingbright

Optoelectronic Components

SMD LED

RGB SMD LED	4
Top-Emitting Chip SMD LED	7
Right Angle SMD LED	14
Multi-Color SMD LED	17
Reverse Mount SMD LED	21
Top-Emitting PLCC SMD LED	21
Subminiature SMD LED	22
SOT-23 SMD LED	23
Ambient Light Sensor	24
Color Sensor	24

RGB SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @5mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPGF-0606GBRC-120	InGaN	527	water clear	30	90	140°	0.65mm x 0.65mm x 0.2mm KPGF-0606 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
	InGaN	467		5	20	140°	
	AlGaInP	624		10	30	140°	
KPGF-1011GBRC-120	InGaN	527	water clear	50	80	150°	1.0mm x 1.0mm x 0.2mm KPGF-1011 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
	InGaN	467		10	23	150°	
	AlGaInP	624		15	30	150°	

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPTF-1616RGBC-11	AlGaInP	621	water clear	55	110	130°	1.6mm x 1.6mm x 0.7mm KPTF-1616 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	InGaN	525		120	280	130°	
	InGaN	465		40	70	130°	

NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

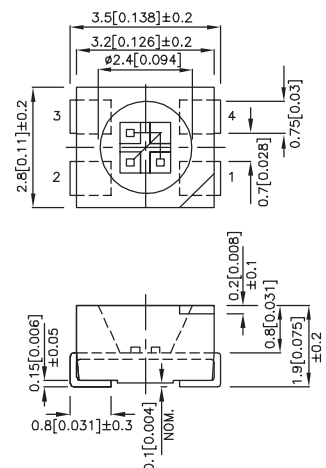
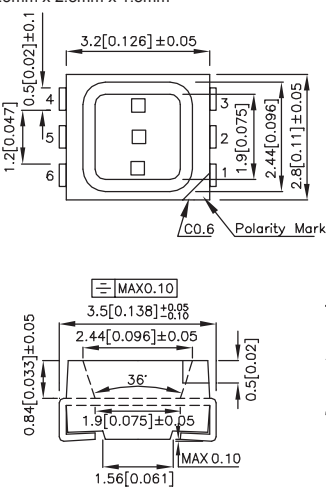
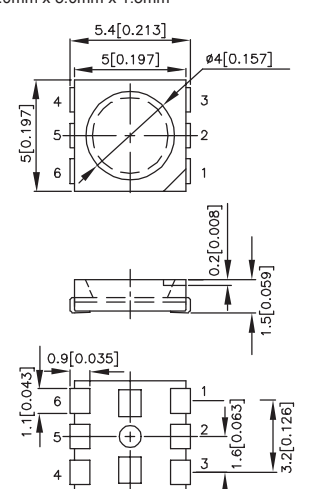
RGB SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPFA-2507BRGC-11	InGaP	465	water clear	40	65	130°	2.5mm x 1.0mm x 0.7mm Units : mm(inch) Tolerance : $\pm 0.15(0.006)$
	AlGaInP	621		80	110	130°	
	InGaP	525		200	400	130°	
KPFA-3010RGBC-11	AlGaInP	621	water clear	80	140	150°	3.0mm x 1.5mm x 1.0mm Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	InGaP	525		300	500	150°	
	InGaP	465		40	70	150°	
KPFA-3011BZ1RGZ1C-132/F	InGaP	470	water clear	55	110	150°	3.0mm x 1.5mm x 1.0mm Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	AlGaInP	624		400	660	150°	
	InGaP	525		500	780	150°	

NOTES:

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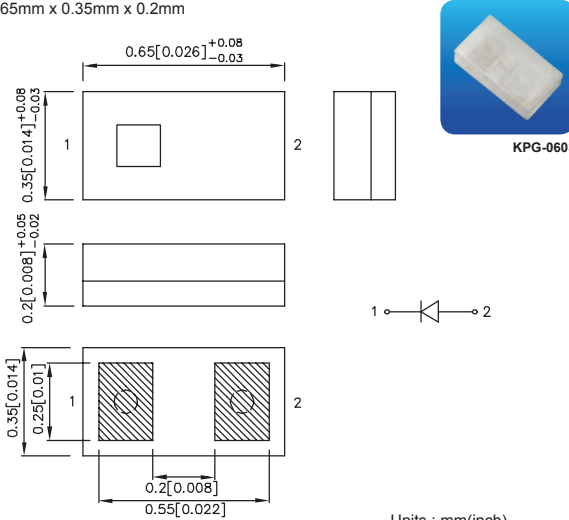
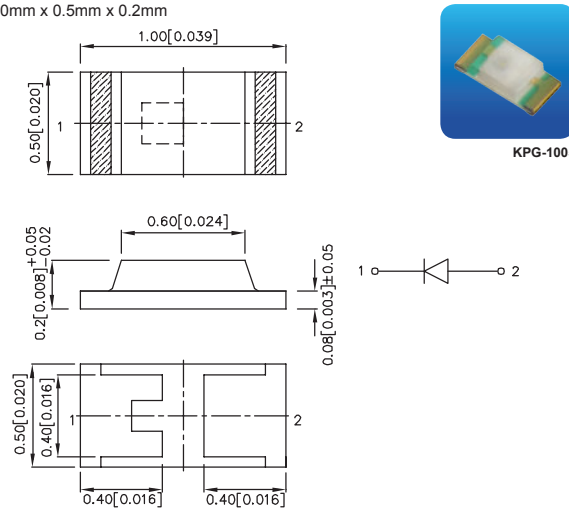
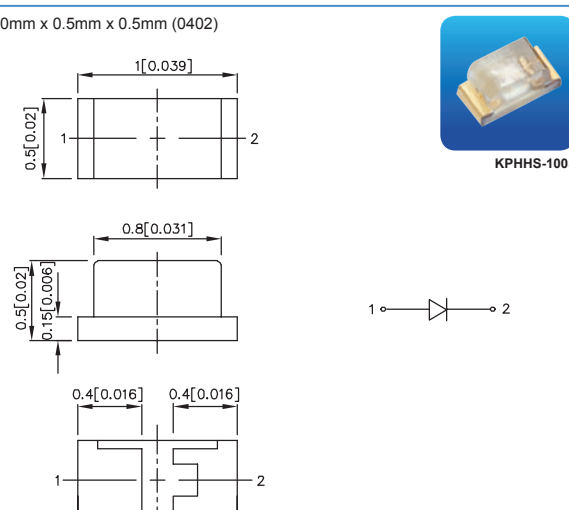
RGB SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KAA-3528RGBS-K11-C8-CC	AlGaInP	625	water clear	400	500	120°	3.5mm x 2.8mm x 1.9mm   KAA-3528 Units : mm(inch) Tolerance : ±0.25(0.01)
	InGaIn	525		1000	1600	120°	
	InGaIn	470		200	330	120°	
KAAF-3529BGRS-132	InGaIn	470	water clear	200	300	130°	3.5mm x 2.8mm x 1.8mm   KAAF-3529 Units : mm(inch) Tolerance : ±0.2(0.008)
	InGaIn	525		1000	1600	130°	
	AlGaInP	624		700	950	130°	
Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @30mA *50mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KAAF-5050RGBS-13	AlGaInP	625	water clear	*1000	*1400	120°	5.0mm x 5.0mm x 1.5mm   KAAF-5050 Units : mm(inch) Tolerance : ±0.2(0.008)
	InGaIn	525		1000	1400	120°	
	InGaIn	470		300	420	120°	

NOTE:

1. Luminous intensity value is traceable to CIE127-2007 standards.

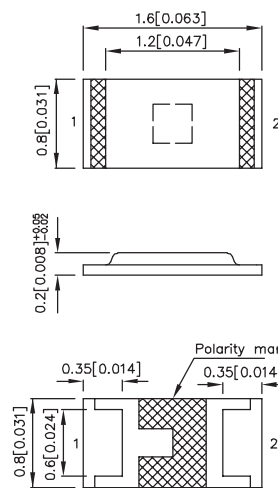
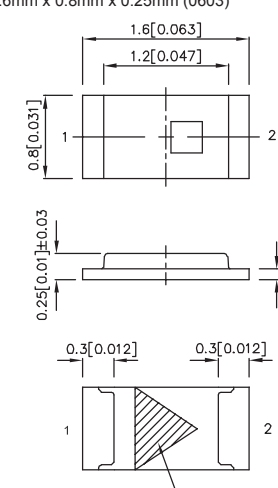
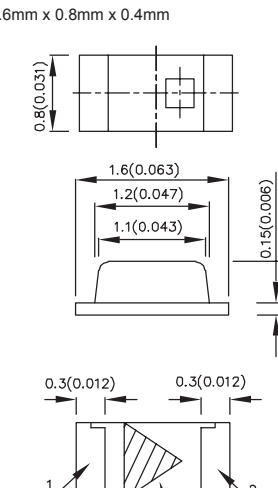
TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA*10mA**5mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPG-0603SURC-TT	AlGaInP	631	water clear	*10	*35	140°	0.65mm x 0.35mm x 0.2mm  KPG-0603 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPG-0603SEC-E-TT	AlGaInP	624	water clear	*15	*40	140°	
KPG-0603SEC-TT	AlGaInP	605	water clear	*20	*50	140°	
KPG-0603SYC-TT	AlGaInP	589	water clear	*10	*30	140°	
KPG-0603CGC-TT	AlGaInP	571	water clear	*6	*15	140°	
KPG-0603VGC-TT-5MAV	InGaN	527	water clear	**30	**80	140°	
KPG-0603PBC-TT-5MAV	InGaN	467	water clear	**15	**25	140°	
KPG-1005SURC-TT	AlGaInP	631	water clear	20	65	120°	1.0mm x 0.5mm x 0.2mm  KPG-1005 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPG-1005SEC-E-TT	AlGaInP	624	water clear	20	75	120°	
KPG-1005SEC-TT	AlGaInP	605	water clear	40	90	120°	
KPG-1005SYC-TT	AlGaInP	589	water clear	55	100	120°	
KPG-1005CGC-TT	AlGaInP	571	water clear	12	35	120°	
KPG-1005VGC-TT-5MAV	InGaN	527	water clear	**30	**70	140°	
KPG-1005PBC-TT-5MAV	InGaN	467	water clear	**20	**28	140°	
KPHHS-1005SURCK	AlGaInP	630	water clear	40	70	120°	1.0mm x 0.5mm x 0.5mm (0402)  KPHHS-1005 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
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	140°	
KPHHS-1005QBC-D-V	InGaN	465	water clear	40	60	140°	

NOTES:

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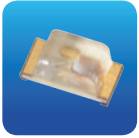
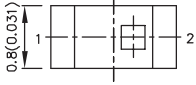
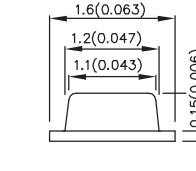
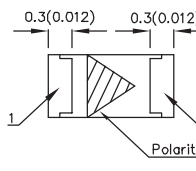
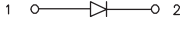
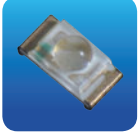
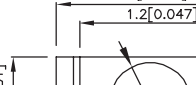
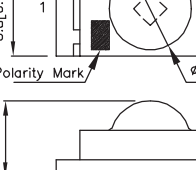
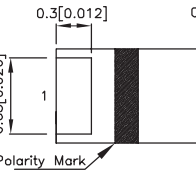
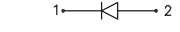
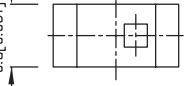
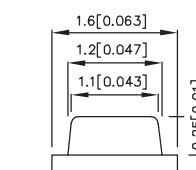
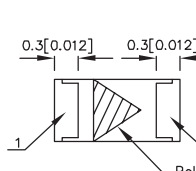
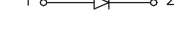
TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA*5mA		Viewing Angle 2 θ /2	Dimensions
				Min.	Typ.		
KPG1-1608SURC-TT	AlGaInP	631	water clear	20	65	120°	1.6mm x 0.8mm x 0.2mm  Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPG1-1608SEC-E-TT	AlGaInP	624	water clear	20	75	120°	
KPG1-1608SEC-TT	AlGaInP	605	water clear	40	90	120°	
KPG1-1608SYC-TT	AlGaInP	589	water clear	55	100	120°	
KPG1-1608CGC-TT	AlGaInP	571	water clear	12	35	120°	
KPG1-1608VGC-TT-5MAV	InGaN	527	water clear	*30	*70	120°	
KPG1-1608PBC-TT-5MAV	InGaN	467	water clear	*8	*20	120°	
KPG-1608SURKC-T	AlGaInP	630	water clear	55	110	120°	1.6mm x 0.8mm x 0.25mm (0603)  Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
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	300	450	130°	
KPG-1608QBC-D	InGaN	465	water clear	40	100	130°	
KPG-1608VBC-D	InGaN	470	water clear	120	200	130°	
KPHM-1608EC-T	GaAsP/GaP	617	water clear	3	8	150°	1.6mm x 0.8mm x 0.4mm  Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPHM-1608SURCK	AlGaInP	630	water clear	40	80	120°	
KPHM-1608SECK	AlGaInP	601	water clear	80	180	120°	
KPHM-1608YC-T	GaAsP/GaP	588	water clear	5	8	150°	
KPHM-1608SYCK	AlGaInP	590	water clear	80	150	120°	
KPHM-1608SGC-T	GaP	568	water clear	5	12	150°	
KPHM-1608CGCK	AlGaInP	570	water clear	20	50	120°	
KPHM-1608QBC-D	InGaN	465	water clear	40	100	130°	
KPHM-1608VBC-D	InGaN	470	water clear	120	180	130°	

NOTES:

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2. Luminous intensity value is traceable to CIE127-2007 standards.

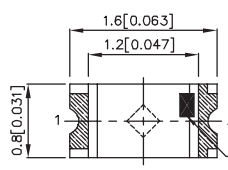
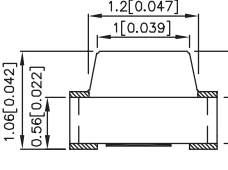
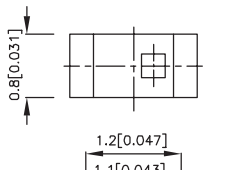
TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPH-1608SURCK	AlGaInP	630	water clear	40	80	120°	1.6mm x 0.8mm x 0.65mm (0603)  KPH-1608     Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPH-1608SECK	AlGaInP	601	water clear	80	180	120°	
KPH-1608YC	GaAsP/GaP	588	water clear	3	8	150°	
KPH-1608SYCK	AlGaInP	590	water clear	80	150	120°	
KPH-1608SGC	GaP	568	water clear	5	12	150°	
KPH-1608CGCK	AlGaInP	570	water clear	20	50	120°	
KPH-1608QBC-D	InGaN	465	water clear	40	100	130°	
KPHD-1608SURCK	AlGaInP	630	water clear	40	170	120°	1.6mm x 0.8mm x 0.65mm  KPHD-1608     Units : mm(inch) Tolerance : $\pm 0.15(0.006)$
KPHD-1608SECK-J3-PRV	AlGaInP	625	water clear	300	600	120°	
KPHD-1608SECK-J4-PRV	AlGaInP	605	water clear	400	820	120°	
KPHD-1608SECK	AlGaInP	601	water clear	80	210	120°	
KPHD-1608SYCK	AlGaInP	590	water clear	80	210	120°	
KPHD-1608SYCK-J3-PRV	AlGaInP	590	water clear	300	600	120°	
KPHD-1608CGCK	AlGaInP	570	water clear	20	80	120°	
KPHD-1608ZGCK	InGaN	525	water clear	400	940	90°	
KPHD-1608QBC-D	InGaN	465	water clear	40	140	90°	
KPHD-1608VBC-D	InGaN	470	water clear	120	260	90°	
KPT-1608EC	GaAsP/GaP	617	water clear	3	8	150°	1.6mm x 0.8mm x 0.75mm (0603)  KPT-1608     Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
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	150°	
KPT-1608SYCK	AlGaInP	590	water clear	80	150	120°	
KPT-1608SGC	GaP	568	water clear	5	12	150°	
KPT-1608CGCK	AlGaInP	570	water clear	20	50	120°	
KPT-1608ZGC	InGaN	525	water clear	200	400	130°	
KPT-1608QBC-D	InGaN	465	water clear	40	100	130°	
KPT-1608VBC-D	InGaN	470	water clear	120	180	130°	

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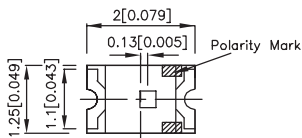
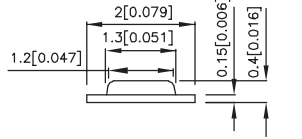
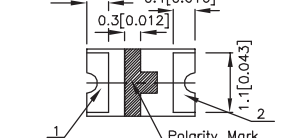
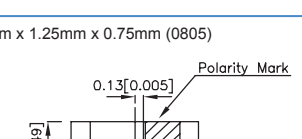
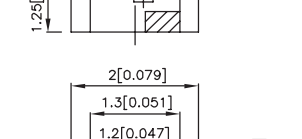
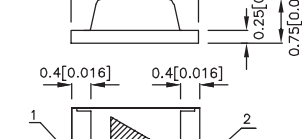
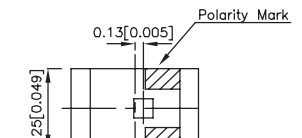
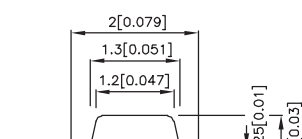
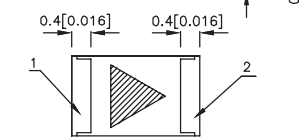
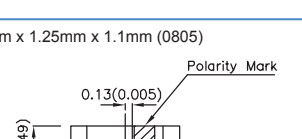
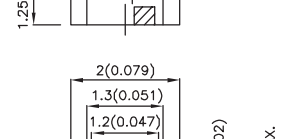
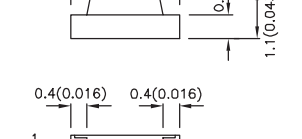
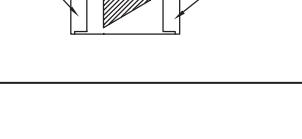
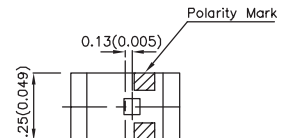
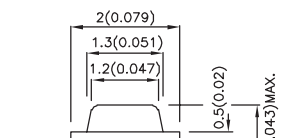
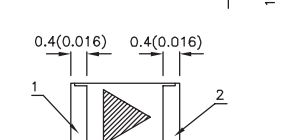
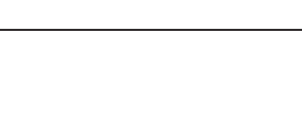
TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPC-1608SEC-E	AlGaInP	621	water clear	55	100	150°	1.6mm x 0.8mm x 1.06mm  Index & Polarity Mark Temperature Measurement KPC-1608SECK-J4-PRV KPC-1608SYCK-J3-PRV  Index & Polarity Mark Temperature Measurement  Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPC-1608SECK-J4-PRV	AlGaInP	605	water clear	300	550	150°	
KPC-1608SYCK	AlGaInP	590	water clear	80	150	150°	
KPC-1608SYCK-J3-PRV	AlGaInP	590	water clear	200	320	150°	
KPC-1608FGCK	AlGaInP	568	water clear	20	50	150°	
KP-1608EC	GaAsP/GaP	617	water clear	3	8	150°	1.6mm x 0.8mm x 1.1mm (0603)  Index & Polarity Mark Temperature Measurement  Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
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	150°	
KP-1608SYCK	AlGaInP	590	water clear	80	150	120°	
KP-1608SGC	GaP	568	water clear	5	12	150°	
KP-1608CGCK	AlGaInP	570	water clear	20	50	120°	
KP-1608ZGC	InGaN	525	water clear	200	400	130°	
KP-1608QBC-D	InGaN	465	water clear	40	100	130°	

NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

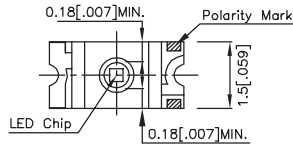
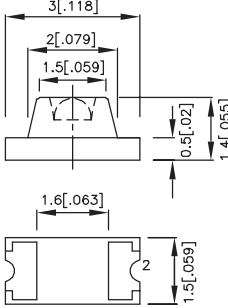
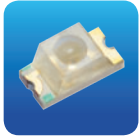
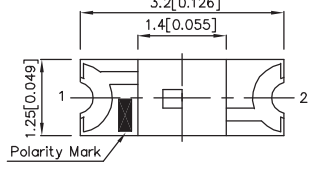
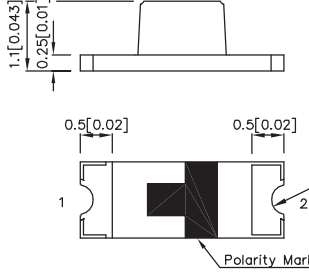
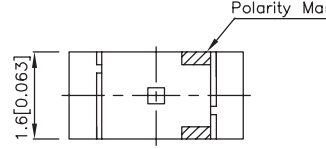
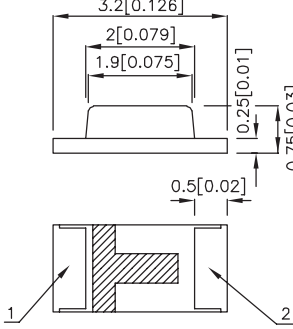
TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPHCM-2012SURCK	AlGaInP	630	water clear	40	80	140°	2.0mm x 1.25mm x 0.4mm (0805)      
KPHCM-2012SECK	AlGaInP	601	water clear	80	180	140°	
KPHCM-2012SYCK	AlGaInP	590	water clear	80	150	140°	
KPHCM-2012CGCK	AlGaInP	570	water clear	20	50	140°	
KPHCM-2012ZGCK	InGaN	525	water clear	200	400	140°	
KPHCM-2012QBC-D	InGaN	465	water clear	40	100	140°	
KPT-2012EC	GaAsP/GaP	617	water clear	3	8	160°	2.0mm x 1.25mm x 0.75mm (0805)        
KPT-2012SURCK	AlGaInP	630	water clear	40	80	140°	
KPT-2012SECK	AlGaInP	601	water clear	80	180	140°	
KPT-2012YC	GaAsP/GaP	588	water clear	3	8	160°	
KPT-2012SYCK	AlGaInP	590	water clear	80	150	140°	
KPT-2012SGC	GaP	568	water clear	5	12	160°	
KPT-2012CGCK	AlGaInP	570	water clear	20	50	140°	
KPT-2012ZGCK	InGaN	525	water clear	200	400	140°	
KPT-2012QBC-D	InGaN	465	water clear	40	100	140°	
KPT-2012VBC-D	InGaN	470	water clear	120	180	140°	
KP-2012EC	GaAsP/GaP	617	water clear	3	8	160°	2.0mm x 1.25mm x 1.1mm (0805)     
KP-2012SURCK	AlGaInP	630	water clear	40	80	140°	
KP-2012SECK	AlGaInP	601	water clear	80	180	140°	
KP-2012YC	GaAsP/GaP	588	water clear	3	8	160°	
KP-2012SYCK	AlGaInP	590	water clear	80	150	140°	
KP-2012SGC	GaP	568	water clear	5	12	160°	
KP-2012CGCK	AlGaInP	570	water clear	20	50	140°	
KP-2012ZGCK	InGaN	525	water clear	200	400	140°	
KP-2012QBC-D	InGaN	465	water clear	40	100	140°	

NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

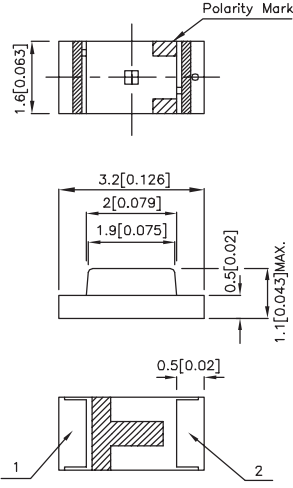
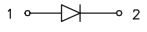
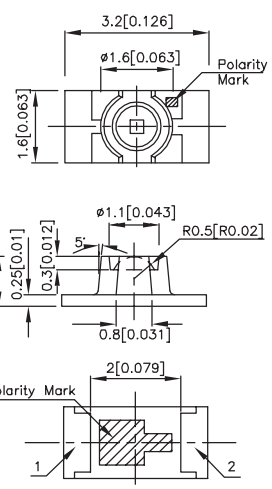
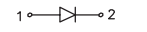
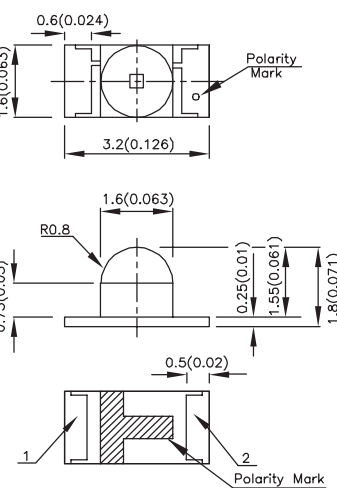
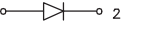
TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ /2	Dimensions
				Min.	Typ.		
KPL-3015EC	GaAsP/GaP	617	water clear	5	12	100°	3.0mm x 1.5mm x 1.4mm (1106)  0.18[.007]MIN. Polarity Mark LED Chip 1.5[.059] 0.18[.007]MIN.  3[.118] 2[.079] 1.5[.059] 0.5[.02] 1.4[.055] 1.6[.063] 1.5[.059] 1 2 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$  KPL-3015
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	100°	
KPL-3015SGC	GaP	568	water clear	8	18	100°	
KPL-3015CGCK	AlGaInP	570	water clear	55	120	70°	
KPL-3015ZGC	InGaN	525	water clear	500	800	50°	
KPL-3015QBC-D	InGaN	465	water clear	120	200	50°	
KPTC-3212SURCK-01	AlGaInP	630	water clear	40	80	140°	3.2mm x 1.25mm x 1.1mm  3.2[0.126] 1.4[0.055] 1.25[0.049] Polarity Mark  1.1[0.043] 0.25[0.01] 0.5[0.02] 0.5[0.02] R0.25[0.01] Polarity Mark 1 2 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$  KPTC-3212
KPTC-3212SECK-01	AlGaInP	601	water clear	80	180	140°	
KPTC-3212SYCK-01	AlGaInP	590	water clear	80	180	140°	
KPTC-3212CGCK-01	AlGaInP	570	water clear	20	50	140°	
KPTC-3212QBC-D-01	InGaN	465	water clear	40	80	140°	
KPT-3216EC	GaAsP/GaP	617	water clear	3	8	160°	3.2mm x 1.6mm x 0.75mm (1206)  1.6[0.063] Polarity Mark  3.2[0.126] 2[0.079] 1.9[0.075] 0.25[0.01] 0.75[0.03] 0.5[0.02] 1 2 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$  KPT-3216
KPT-3216SURCK	AlGaInP	630	water clear	40	80	140°	
KPT-3216SECK	AlGaInP	601	water clear	80	180	140°	
KPT-3216YC	GaAsP/GaP	588	water clear	3	8	160°	
KPT-3216SYCK	AlGaInP	590	water clear	80	150	140°	
KPT-3216SGC	GaP	568	water clear	5	12	160°	
KPT-3216CGCK	AlGaInP	570	water clear	20	50	140°	
KPT-3216ZGC	InGaN	525	water clear	200	400	150°	
KPT-3216QBC-D	InGaN	465	water clear	40	100	150°	

NOTES:

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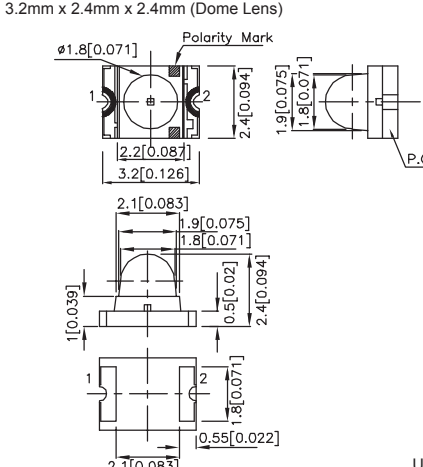
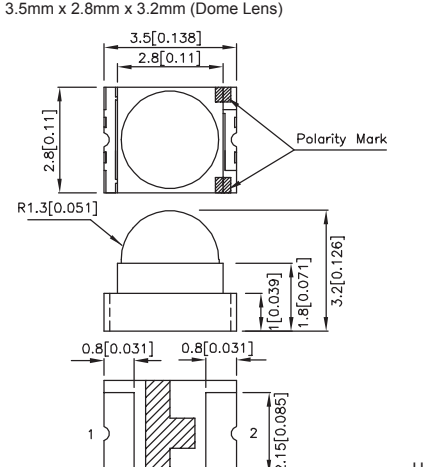
TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KP-3216EC	GaAsP/GaP	617	water clear	3	8	160°	3.2mm x 1.6mm x 1.1mm (1206)   Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
KP-3216SURCK	AlGaInP	630	water clear	40	80	140°	
KP-3216SECK	AlGaInP	601	water clear	80	180	140°	
KP-3216YC	GaAsP/GaP	588	water clear	3	8	160°	
KP-3216SYCK	AlGaInP	590	water clear	80	150	140°	
KP-3216SGC	GaP	568	water clear	5	12	160°	
KP-3216CGCK	AlGaInP	570	water clear	20	50	140°	
KP-3216ZGC	InGaN	525	water clear	200	400	150°	
KP-3216QBC-D	InGaN	465	water clear	40	100	150°	
KPTL-3216SURCK	AlGaInP	630	water clear	120	230	80°	3.2mm x 1.6mm x 1.1mm (1206)   Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
KPTL-3216SECK	AlGaInP	601	water clear	200	350	80°	
KPTL-3216SYCK	AlGaInP	590	water clear	200	350	80°	
KPTL-3216CGCK	AlGaInP	570	water clear	55	100	80°	
KPTL-3216ZGC	InGaN	525	water clear	700	1100	80°	
KPTL-3216QBC-D	InGaN	465	water clear	120	250	80°	
KPTD-3216SURCK	AlGaInP	630	water clear	300	800	40°	3.2mm x 1.6mm x 1.8mm (1206 Dome Lens)   Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
KPTD-3216SECK	AlGaInP	601	water clear	500	1000	40°	
KPTD-3216SYCK	AlGaInP	590	water clear	700	800	40°	
KPTD-3216CGCK	AlGaInP	570	water clear	120	300	40°	
KPTD-3216ZGC	InGaN	525	water clear	1900	3500	30°	
KPTD-3216ZGC-G	InGaN	525	water clear	3100	4200	30°	
KPTD-3216QBC-D	InGaN	465	water clear	300	700	30°	

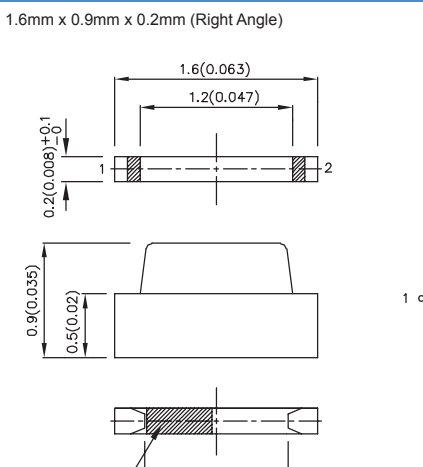
NOTES:

1. KP series custom-made is available upon request.
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TOP-EMITTING CHIP SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPD-3224SURCK	AlGaInP	630	water clear	700	1500	20°	3.2mm x 2.4mm x 2.4mm (Dome Lens)  Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
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	3100	6000	20°	
KPD-3224QBC-D	InGaN	465	water clear	500	900	20°	
KPED-3528SURCK	AlGaInP	630	water clear	120	250	70°	3.5mm x 2.8mm x 3.2mm (Dome Lens)  Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
KPED-3528SECK	AlGaInP	601	water clear	400	700	70°	
KPED-3528SYCK	AlGaInP	590	water clear	300	500	70°	
KPED-3528CGCK	AlGaInP	570	water clear	80	200	70°	

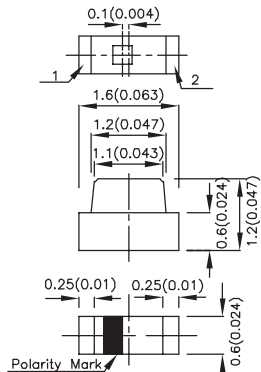
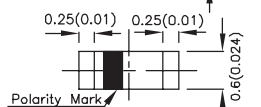
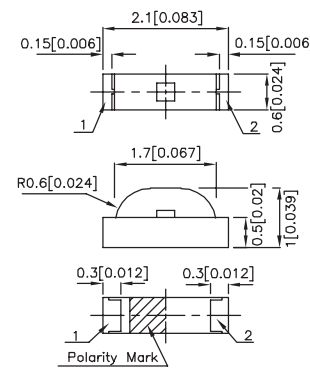
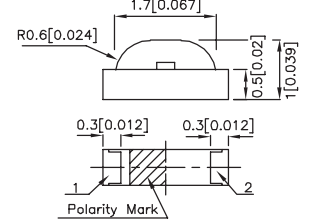
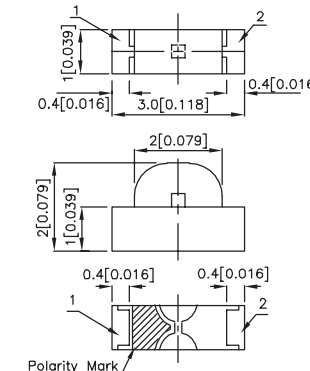
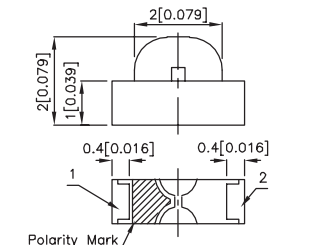
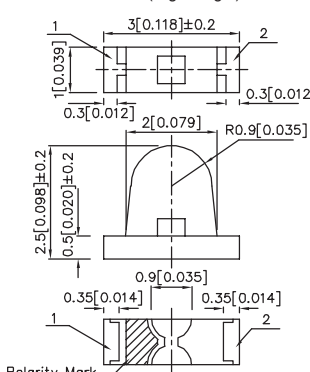
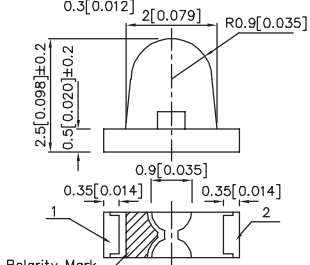
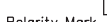
RIGHT ANGLE SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPGA-1602SURC-KA	AlGaInP	631	water clear	20	70	150°	1.6mm x 0.9mm x 0.2mm (Right Angle)  Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPGA-1602SEC-E-KA	AlGaInP	624	water clear	55	120	150°	
KPGA-1602SEC-KA	AlGaInP	605	water clear	20	70	150°	
KPGA-1602SYC-KA	AlGaInP	589	water clear	40	75	150°	
KPGA-1602CGC-KA	AlGaInP	571	water clear	12	30	150°	
KPGA-1602QBC-KA	InGaN	463	water clear	20	60	150°	

NOTES:

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2. Luminous intensity value is traceable to CIE127-2007 standards.

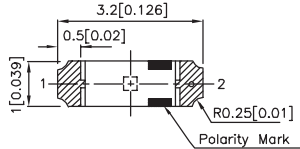
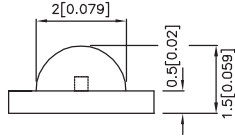
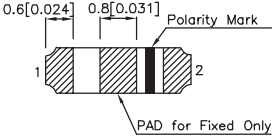
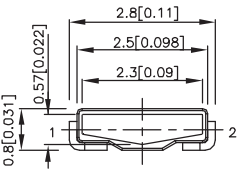
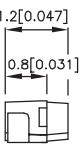
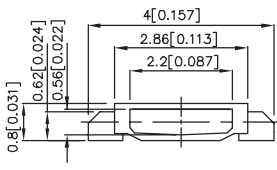
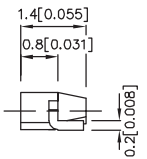
RIGHT ANGLE SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle	Dimensions
				Min.	Typ.		
KPA-1606SURCK	AlGaInP	630	water clear	40	80	110°	1.6mm x 1.2mm x 0.6mm (0602 Right Angle)    Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPA-1606SECK	AlGaInP	601	water clear	80	180	110°	
KPA-1606SYCK	AlGaInP	590	water clear	80	150	110°	
KPA-1606CGCK	AlGaInP	570	water clear	20	50	110°	
KPA-1606ZGC	InGaN	525	water clear	200	400	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-2107SURCK	AlGaInP	630	water clear	40	80	140°	2.1mm x 1.0mm x 0.6mm (Right Angle)    Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPA-2107SECK	AlGaInP	601	water clear	80	180	140°	
KPA-2107SYCK	AlGaInP	590	water clear	80	150	140°	
KPA-2107CGCK	AlGaInP	570	water clear	20	50	140°	
KPA-2107ZGCK	InGaN	525	water clear	200	300	170°	
KPA-2107ZGC-G	InGaN	525	water clear	400	650	170°	
KPA-2107QBC-D	InGaN	465	water clear	40	80	170°	
KPA-2107VBC-D	InGaN	470	water clear	120	200	170°	
KPA-3010EC	GaAsP/GaP	617	water clear	3	6	120°	3.0mm x 2.0mm x 1.0mm (1104 Right Angle)    Units : mm(inch) Tolerance : $\pm 0.15(0.006)$
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-3010QBC-D	InGaN	465	water clear	40	80	120°	
KPPA-3010SURCK	AlGaInP	630	water clear	200	300	30°	3.0mm x 2.5mm x 1.0mm (Right Angle)    Units : mm(inch) Tolerance : $\pm 0.15(0.006)$
KPPA-3010SYCK	AlGaInP	590	water clear	300	450	30°	
KPPA-3010CGCK	AlGaInP	570	water clear	80	150	30°	

NOTES:

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2. Luminous intensity value is traceable to CIE127-2007 standards.

RIGHT ANGLE SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPA-3210SYCK	AlGaInP	590	water clear	80	150	120°	3.2mm x 1.5mm x 1.0mm (1304 Right Angle)     KPA-3210 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KPA-3210ZGC	InGaN	525	water clear	200	400	150°	
KPA-3210VBC-D	InGaN	470	water clear	120	200	150°	
KA-2810ASURSK	AlGaInP	630	water clear	40	100	110°	2.8mm x 1.2mm x 0.8mm (Right Angle)    KA-2810A Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KA-2810ASYSK	AlGaInP	590	water clear	120	200	110°	
KA-2810ACGSK	AlGaInP	570	water clear	20	60	110°	
KA-2810AZGS	InGaN	525	water clear	500	850	110°	
KA-2810AZGS-G	InGaN	525	water clear	1000	1400	110°	
KA-2810AQBS-D	InGaN	465	water clear	80	150	110°	
KA-2810AVBS-D	InGaN	470	water clear	200	350	110°	
KA-4008SURSK	AlGaInP	630	water clear	55	90	120°	4.0mm x 0.8mm (Right Angle)    KA-4008 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KA-4008ZGS	InGaN	525	water clear	500	800	120°	
KA-4008VBS-D	InGaN	470	water clear	300	450	120°	

NOTES:

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RIGHT ANGLE SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KA-4040SURCKT	AlGaInP	630	water clear	80	150	120°	4.0mm x 4.0mm (Right Angle) KA-4040 Units : mm(inch) Tolerance : ±0.25(0.01)
KA-4040SECKT	AlGaInP	601	water clear	80	220	120°	
KA-4040SYCKT	AlGaInP	590	water clear	120	250	120°	
KA-4040CGCKT	AlGaInP	570	water clear	40	90	120°	
KA-4040ZGCT	InGaN	525	water clear	500	850	120°	
KA-4040QBS-D	InGaN	465	water clear	80	220	120°	

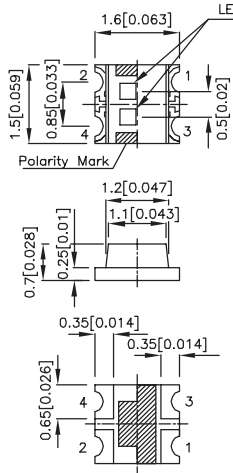
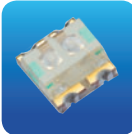
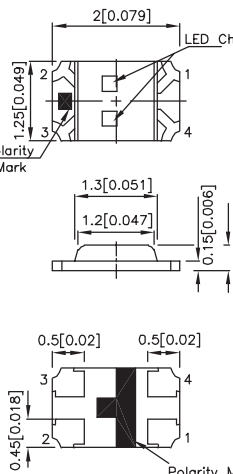
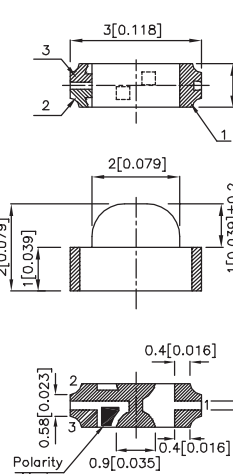
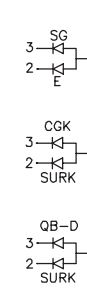
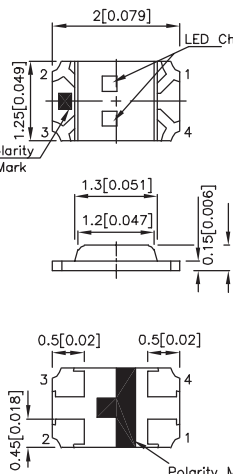
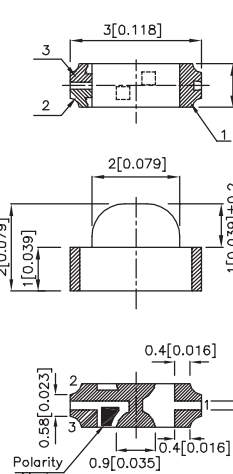
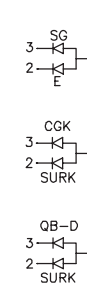
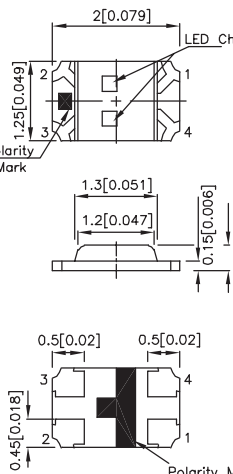
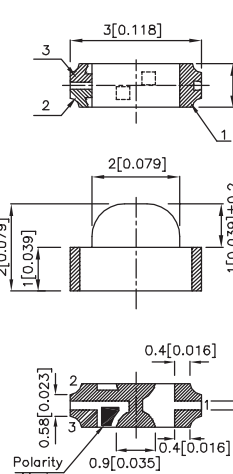
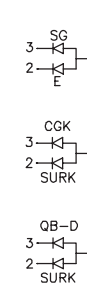
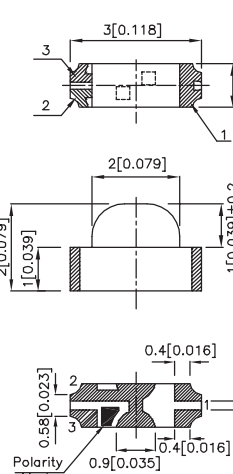
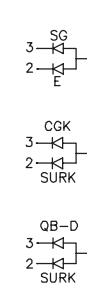
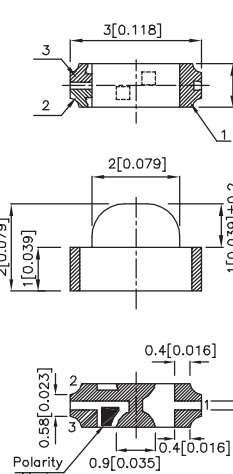
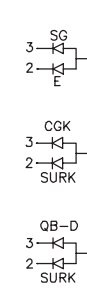
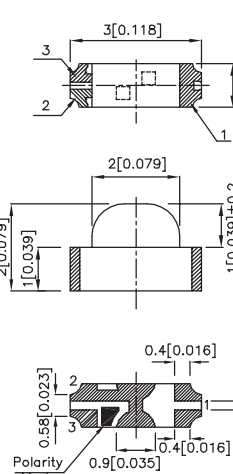
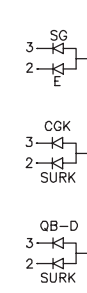
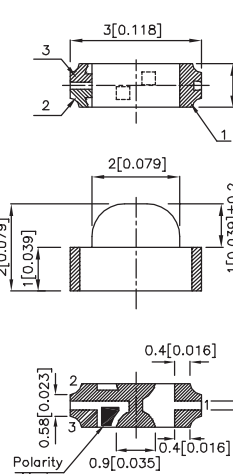
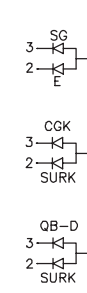
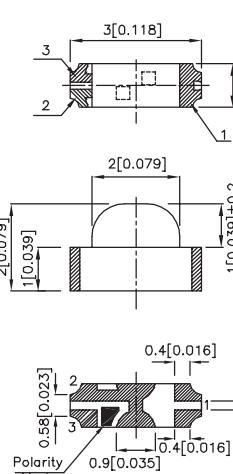
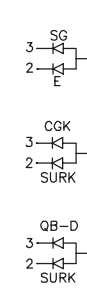
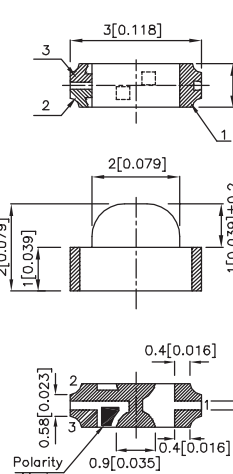
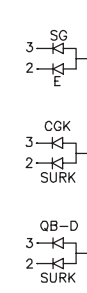
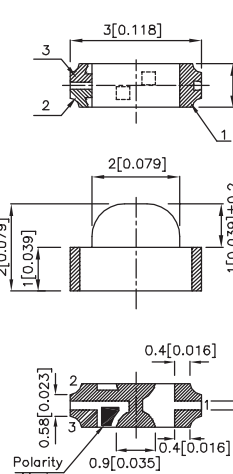
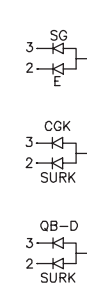
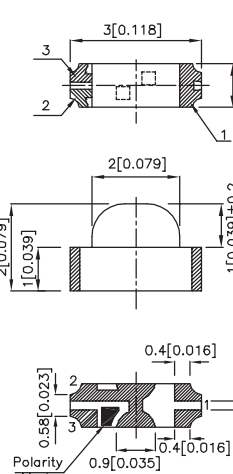
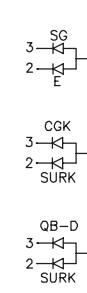
MULTI-COLOR SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions														
				Min.	Typ.																
KPHB-1608CGKSYKC-GX	AlGaInP	570	water clear	20	50	130°	1.6mm x 0.8mm x 0.5mm (Bi-Color) LED Chip KPHB-1608 <table><tr><td>SYK</td><td>Y</td></tr><tr><td>CGK</td><td>SG</td></tr><tr><td>SURK</td><td>E</td></tr><tr><td>ZG</td><td>SG</td></tr><tr><td>SURK</td><td>CGK</td></tr><tr><td>CGK</td><td>QB-D</td></tr><tr><td>SURK</td><td>SYK</td></tr></table> Units : mm(inch) Tolerance : ±0.15(0.006)	SYK	Y	CGK	SG	SURK	E	ZG	SG	SURK	CGK	CGK	QB-D	SURK	SYK
	SYK	Y																			
CGK	SG																				
SURK	E																				
ZG	SG																				
SURK	CGK																				
CGK	QB-D																				
SURK	SYK																				
KPHB-1608ZGSURKC-GX	InGaN	525	200	350	130°																
KPHB-1608ZGSURKC-GX	AlGaInP	630	40	90																	
KPHB-1608CGKSURKC-GX	AlGaInP	570	water clear	20	50	130°															
	KPHB-1608CGKSURKC-GX	AlGaInP		630	40		90														
KPHB-1608SGYC-GX	GaP	568	water clear	5	15	130°															
	KPHB-1608SGYC-GX	GaAsP/GaP		588	3		5														
KPHB-1608SGEC-GX	GaP	568	water clear	5	15	130°															
	KPHB-1608SGEC-GX	GaAsP/GaP		617	5		12														
KPHB-1608QBDCGKC-GX	InGaN	465	water clear	40	70	130°															
	KPHB-1608QBDCGKC-GX	AlGaInP		570	20		50														
KPHB-1608SYKSURKC-GX	AlGaInP	590	water clear	80	150	130°															
	KPHB-1608SYKSURKC-GX	AlGaInP		630	40		90														
KPTB-1612ESGC	GaAsP/GaP	617	water clear	3	7	150°	1.6mm x 1.25mm x 0.65mm (0605 Bi-Color) LED Chip KPTB-1612 <table><tr><td>E</td><td>SURK</td></tr><tr><td>SG</td><td>QB-D</td></tr><tr><td>SURK</td><td>SYK</td></tr><tr><td>CGK</td><td>CGK</td></tr></table> Units : mm(inch) Tolerance : ±0.2(0.008)	E	SURK	SG	QB-D	SURK	SYK	CGK	CGK						
	E	SURK																			
SG	QB-D																				
SURK	SYK																				
CGK	CGK																				
KPTB-1612SURKCGKC	AlGaInP	630	water clear	40	80	150°															
KPTB-1612SURKCGKC	AlGaInP	570		20	50																
KPTB-1612SURKQBDC	AlGaInP	630	water clear	40	80	150°															
	KPTB-1612SURKQBDC	InGaN		465	40			80													
KPTB-1612SYKCGKC	AlGaInP	590	water clear	80	120	150°															
	KPTB-1612SYKCGKC	AlGaInP		570	20		50														

NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

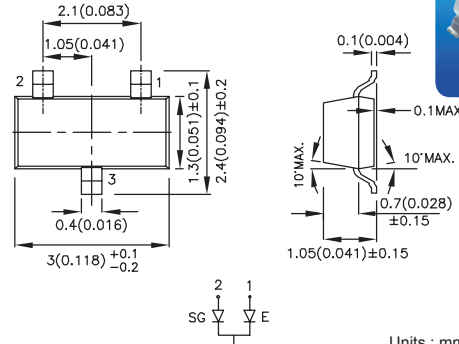
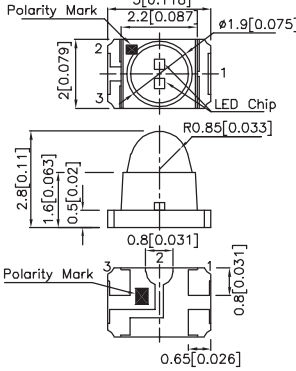
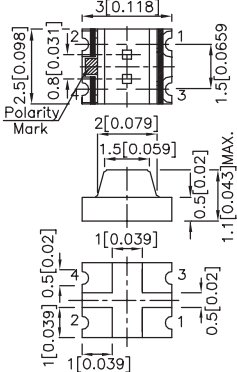
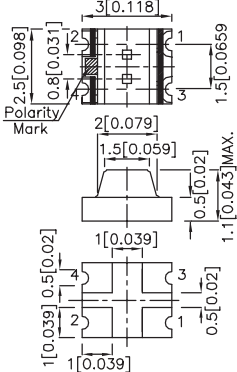
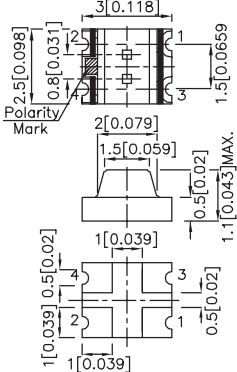
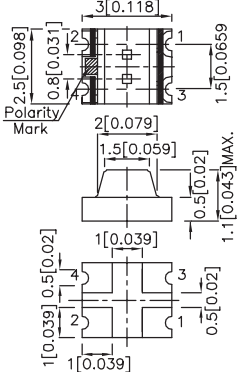
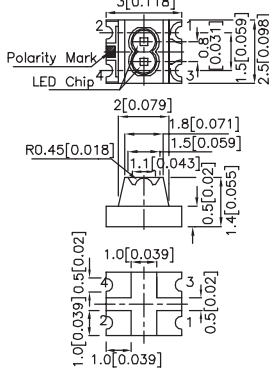
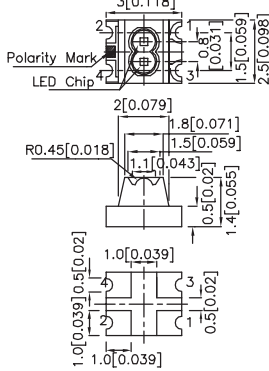
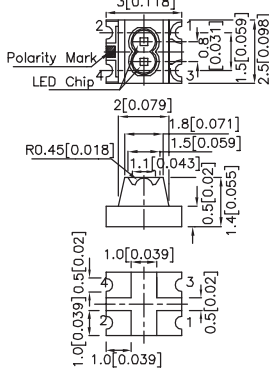
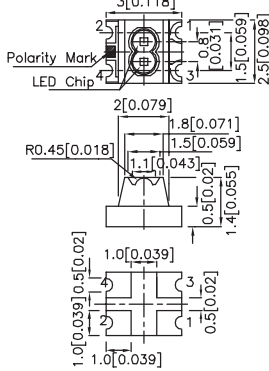
MULTI-COLOR SMD LED

Part Number	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle	Dimensions				
				Min.	Typ.						
KPTB-1615ESGC	GaAsP/GaP	617	water clear	3	7	150°	1.6mm x 1.5mm x 0.7mm (0606 Bi-Color)    KPTB-1615 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$				
	GaP	568		5	12						
KPTB-1615SURKCGKC	AlGaInP	630	water clear	40	80	150°		2.0mm x 1.25mm x 0.45mm (Bi-Color)    KPTB-1615 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$			
	AlGaInP	570		20	50						
KPTB-1615SURKQBDC	AlGaInP	630	water clear	40	80	150°			3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPTB-1615 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$		
	InGaIn	465		40	80						
KPTB-1615YSGC	GaAsP/GaP	588	water clear	3	8	150°				2.0mm x 1.25mm x 0.45mm (Bi-Color)    KPTB-1615 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$	
	GaP	568		5	12						
KPTB-1615SYKCGKC	AlGaInP	590	water clear	80	120	150°					3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPTB-1615 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	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 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$				
	AlGaInP	570		20	50						
KPHBM-2012CGKSEKC	AlGaInP	570	water clear	20	50	120°		3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPHBM-2012 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$			
	AlGaInP	601		80	180						
KPHBM-2012CGKSYKC	AlGaInP	570	water clear	20	50	120°			3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPHBM-2012 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$		
	AlGaInP	590		80	120						
KPHBM-2012QBDSURKC	InGaIn	465	water clear	40	80	120°				3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPHBM-2012 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$	
	AlGaInP	630		40	80						
KPHBM-2012QBDCGKC	InGaIn	465	water clear	40	80	120°					3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPHBM-2012 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	AlGaInP	570		20	50						
KPBA-3010ESGC	GaAsP/GaP	617	water clear	3	8	140°	3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPBA-3010 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$				
	GaP	568		5	15						
KPBA-3010SURKCGKC	AlGaInP	630	water clear	40	80	140°		3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPBA-3010 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$			
	AlGaInP	570		40	70						
KPBA-3010SURKQBDC	AlGaInP	630	water clear	40	80	140°			3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPBA-3010 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$		
	InGaIn	465		40	90						
KPBA-3010SEKCGKC	AlGaInP	601	water clear	80	150	140°				3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPBA-3010 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$	
	AlGaInP	570		40	70						
KPBA-3010SYKCGKC	AlGaInP	590	water clear	80	120	140°					3.0mm x 1.0mm x 2.0mm (1104 Right Angle, Bi-Color)    KPBA-3010 Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
	AlGaInP	570		40	70						

NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

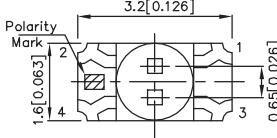
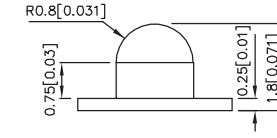
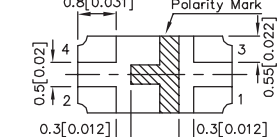
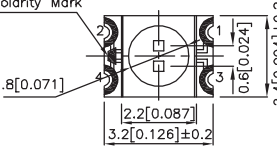
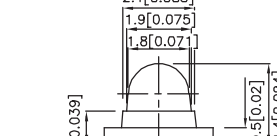
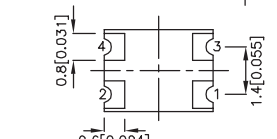
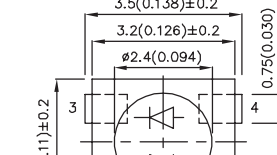
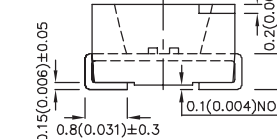
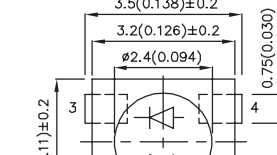
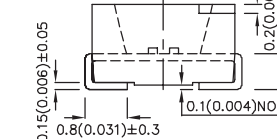
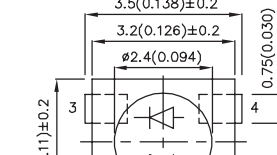
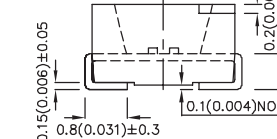
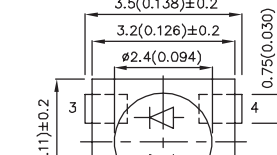
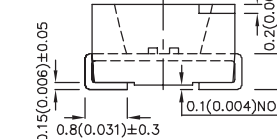
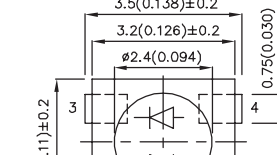
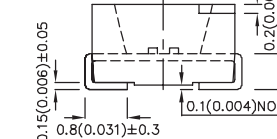
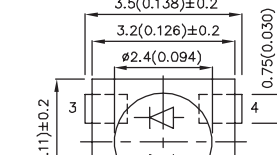
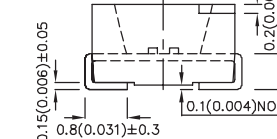
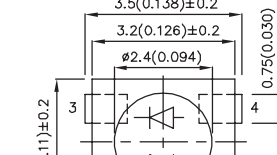
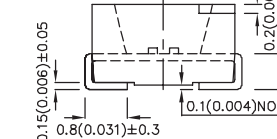
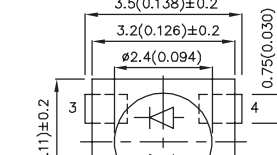
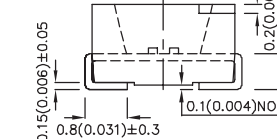
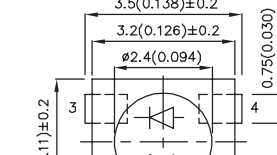
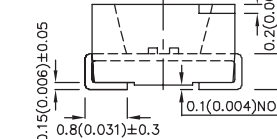
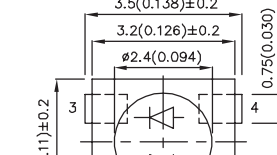
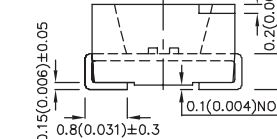
MULTI-COLOR SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KM-23ESGC	GaAsP/GaP	617	water clear	3	5	160°	SOT-23 Surface Mount LED Lamp (3mm x 1.3mm)   KM-23 Units : mm(inch) Tolerance : $\pm 0.25(0.01)$
	GaP	568		5	10		
KPBD-3020SURKCGKC-PF	AlGaInP	630	water clear	120	300	15°	3.0mm x 2.8mm x 2.0mm (Right Angle, Dome Lens)   KPBD-3020 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	AlGaInP	570		120	300		
KPB-3025ESGC	GaAsP/GaP	617	water clear	3	8	160°	3.0mm x 2.5mm x 1.1mm (1109 Bi-Color)   KPB-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	GaP	568		8	15		
KPB-3025SURKCGKC	AlGaInP	630	water clear	40	70	160°	3.0mm x 2.5mm x 1.1mm (1109 Bi-Color)   KPB-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	AlGaInP	570		20	60		
KPB-3025SURKZGC	AlGaInP	630	water clear	40	70	160°	3.0mm x 2.5mm x 1.1mm (1109 Bi-Color)   KPB-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	InGaIn	525		200	350		
KPB-3025SURKSYKC	AlGaInP	630	water clear	40	70	160°	3.0mm x 2.5mm x 1.1mm (1109 Bi-Color)   KPB-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	AlGaInP	590		80	120		
KPBL-3025ESGC	GaAsP/GaP	617	water clear	8	15	70°	3.0mm x 2.5mm x 1.4mm (1109 Bi-Color)   KPBL-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	GaP	568		12	20		
KPBL-3025SURKCGKC	AlGaInP	630	water clear	120	300	50°	3.0mm x 2.5mm x 1.4mm (1109 Bi-Color)   KPBL-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	AlGaInP	570		80	150		
KPBL-3025SURKZGC	AlGaInP	630	water clear	120	300	50°	3.0mm x 2.5mm x 1.4mm (1109 Bi-Color)   KPBL-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	InGaIn	525		400	800		
KPBL-3025SYKCGKC	AlGaInP	590	water clear	200	400	50°	3.0mm x 2.5mm x 1.4mm (1109 Bi-Color)   KPBL-3025 Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
	AlGaInP	570		80	150		

NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

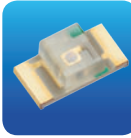
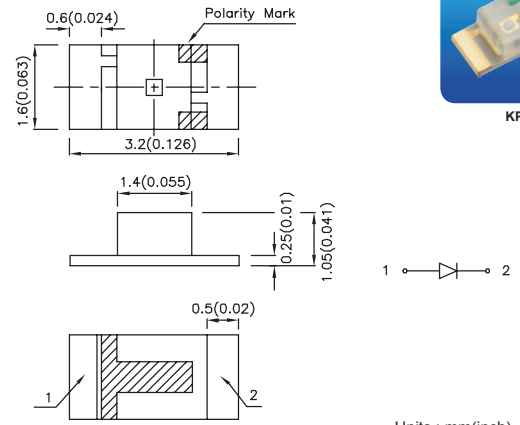
MULTI-COLOR SMD LED

Part Number	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle	Dimensions				
				Min.	Typ.						
KPTBD-3216ESGC	GaAsP/GaP	617	water clear	3	8	30°	3.2mm x 1.6mm x 1.8mm (Bi-Color)    Units : mm(inch) Tolerance : $\pm 0.2(0.008)$				
	GaP	568		20	40						
KPTBD-3216SURKCGKC	AlGaInP	630	water clear	300	600	30°		3.2mm x 2.4mm x 2.4mm (Dome Lens)    Units : mm(inch) Tolerance : $\pm 0.1(0.004)$			
	AlGaInP	570		120	250						
KPTBD-3216SURKZGC	AlGaInP	630	water clear	300	600	30°			3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$		
	InGaN	525		500	1000						
KPTBD-3216SEJ3ZGGC	AlGaInP	625	water clear	1000	1500	30°				3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$	
	InGaN	525		700	1300						
KPTBD-3216SYKCGKC	AlGaInP	590	water clear	300	600	30°					3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$
	AlGaInP	570		120	250						
KPBD-3224ESGC	GaAsP/GaP	617	water clear	12	40	20°	3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$				
	GaP	568		20	55						
KPBD-3224SURKCGKC	AlGaInP	630	water clear	120	400	20°		3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$			
	AlGaInP	570		80	280						
KPBD-3224SURKZGC	AlGaInP	630	water clear	120	400	20°			3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$		
	InGaN	525		500	950						
KPBD-3224SYKCGKC	AlGaInP	590	water clear	400	800	20°				3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$	
	AlGaInP	570		80	280						
KAA-3528ESGCT	GaAsP/GaP	617	water clear	8	15	120°					3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$
	GaP	568		12	30						
KAA-3528SURKCGKCT	AlGaInP	630	water clear	55	100	120°	3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$				
	AlGaInP	570		40	80						
KAA-3528SURKSYKCT	AlGaInP	630	water clear	55	100	120°		3.5mm x 2.8mm    Units : mm(inch) Tolerance : $\pm 0.25(0.01)$			
	AlGaInP	590		120	240						

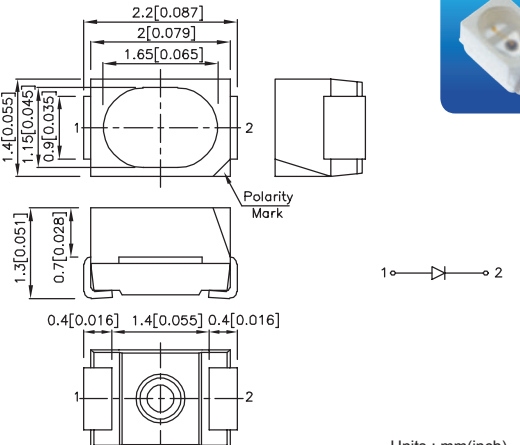
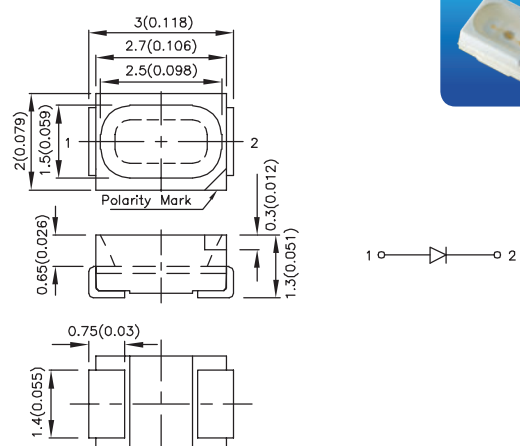
NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

REVERSE MOUNT SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KPTR-3216SURCK	AlGaInP	630	water clear	40	80	140°	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	140°	
KPTR-3216SYCK	AlGaInP	590	water clear	80	150	140°	
KPTR-3216CGCK	AlGaInP	570	water clear	20	50	140°	
KPTR-3216ZGC	InGaN	525	water clear	200	400	140°	
KPTR-3216QBC-D	InGaN	465	water clear	40	100	140°	

TOP-EMITTING PLCC SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				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 : $\pm 0.2(0.008)$
KA-2214ZGS	InGaN	525	water clear	400	700	120°	
KA-2214QBS-D	InGaN	465	water clear	80	150	120°	
KA-3021SURSK	AlGaInP	630	water clear	40	90	120°	3.0mm x 2.0mm x 1.3mm  KA-3021  Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
KA-3021YS	GaAsP/GaP	588	water clear	8	15	120°	
KA-3021SYSK	AlGaInP	590	water clear	120	200	120°	
KA-3021SGS	GaP	568	water clear	12	20	120°	
KA-3021CGSK	AlGaInP	570	water clear	40	80	120°	
KA-3021ZGS	InGaN	525	water clear	400	800	120°	
KA-3021QBS-D	InGaN	465	water clear	80	120	120°	

NOTES:

1. KP series custom-made is available upon request.
2. Luminous intensity value is traceable to CIE127-2007 standards.

TOP-EMITTING PLCC SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KA-3022CGSK-4.5SF	AlGaInP	570	water clear	40	80	120°	3.0mm x 2.2mm x 1.5mm Units : mm(inch) Tolerance : $\pm 0.25(0.01)$
KA-3528SURCKT	AlGaInP	630	water clear	55	100	120°	3.5mm x 2.8mm x 1.9mm Units : mm(inch) Tolerance : $\pm 0.25(0.01)$
KA-3528SECKT	AlGaInP	601	water clear	120	230	120°	
KA-3528SYCKT	AlGaInP	590	water clear	120	250	120°	
KA-3528CGCKT	AlGaInP	570	water clear	40	100	120°	
KA-3528ZGCKT	InGaIn	525	water clear	300	500	120°	
KA-3528QBS-D	InGaIn	465	water clear	80	150	120°	
KA-3528VBS-D	InGaIn	470	water clear	300	450	120°	Units : mm(inch) Tolerance : $\pm 0.25(0.01)$

SUBMINIATURE SMD LED

Part Number	Material	λ_D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimensions
				Min.	Typ.		
KM2520EC03	GaAsP/GaP	617	water clear	20	50	20°	Subminiature Solid State Lamps Gull Wing Lead Units : mm(inch) Tolerance : $\pm 0.25(0.01)$
KM2520SURCK03	AlGaInP	630	water clear	500	1000	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	InGaIn	525	water clear	2700	6000	20°	
KM2520QBC-D03	InGaIn	465	water clear	300	900	20°	

NOTE:

1. Luminous intensity value is traceable to CIE127-2007 standards.

AMBIENT LIGHT SENSOR

Part Number

KPS-3227SP1C

Electrical And Radiant Characteristics
($T_A = 25^\circ\text{C}$, Unless Otherwise Specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector Emitter Breakdown Voltage	BV_{ceo}	60	-	-	V	$I_{ceo}=100\mu\text{A}$
Emitter Collector Breakdown Voltage	BV_{eco}	4	-	-	V	$I_{eco}=100\mu\text{A}$
Collector Dark Current	I_D	-	10	100	nA	$V_{CE}=5\text{V}$ $E_V=0\text{Lx}$
Light Current(1)	I_{PH1}	-	6	-	μA	$V_{CE}=5\text{V}$, $E_V=100\text{ Lx}^{[1]}$
Light Current(2)	I_{PH2}	-	130	-	μA	$V_{CE}=5\text{V}$, $E_V=1000\text{ Lx}^{[1]}$
Light Current(3)	I_{PH3}	-	950	-	μA	$V_{CE}=5\text{V}$, $E_V=1000\text{ Lx}^{[2]}$
Light Current(4)	I_{PH4}	-	420	-	μA	$V_{CE}=5\text{V}$, $E_V=1000\text{ Lx}^{[3]}$
Saturation Output Voltage	V_o	4.5	4.7	-	V	$V_{CC}=5\text{V}$, $E_V=1000\text{Lx}^{[1]}$, $R_L=75\text{K}\Omega$
Peak Wavelength	λ_P	-	580	-	nm	-
Response Wavelength	λ	390	-	700	nm	>10% Response
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_c=10\text{ mA}$

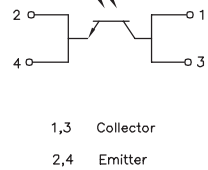
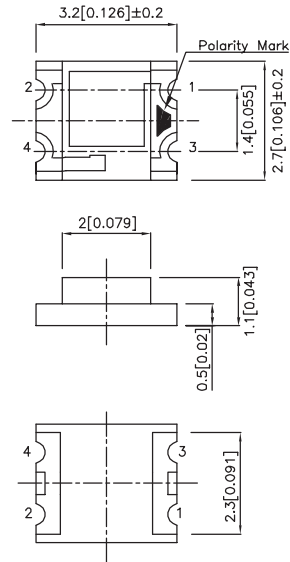
Notes:

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.

Dimensions

KPS-3227SP1C 3.2mm x 2.7mm x 1.1mm
(Ambient Light Sensor)

KPS-3227SP1C

Units : mm(inch)
Tolerance : $\pm 0.1(0.004)$

COLOR SENSOR

Part Number

KPS-5130PD7C

Electrical And Radiant Characteristics
($T_A = 25^\circ\text{C}$, 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] $V_R=5\text{V}$	Red	-	0.039	μA
			Green	-	0.042	
			Blue	-	0.022	
Light Current (2)	I_{L2}	1000Lux [1] $V_R=5\text{V}$	Red	-	0.427	μA
			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}	$\lambda_R=620\text{ nm}$ $\lambda_G=550\text{ nm}$ $\lambda_B=470\text{ nm}$	-	0.33 0.25 0.18	-	A/W
Reverse Dark Current	I_D	$V_R=5\text{V}$	-	-	10	nA

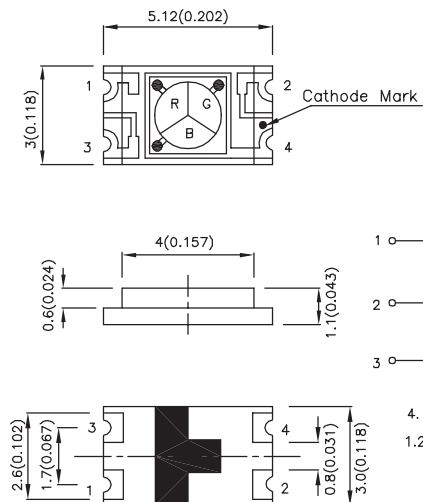
Note:

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

Dimensions

KPS-5130PD7C 5.12mm x 3mm x 1.1mm
(RGB Color Sensor)

KPS-5130PD7C

4. Cathode
1,2,3. AnodeUnits : mm(inch)
Tolerance : $\pm 0.25(0.01)$