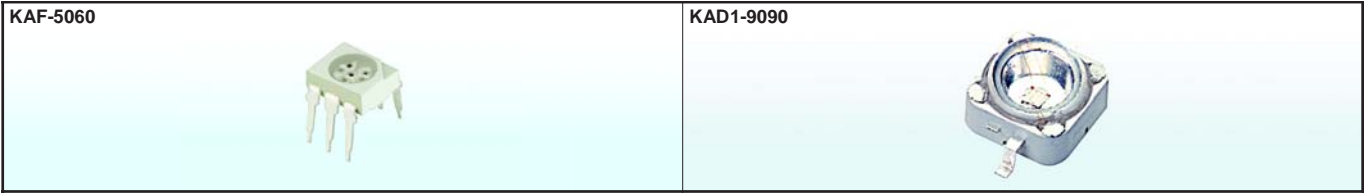


Kingbright

P 2	HIGH CURRENT LED LAMPS
P 3-20	SURFACE MOUNT LED LAMPS
P 21	THROUGH HOLE LED LAMPS
P 22-23	SMD INFRARED EMITTING DIODES
P 24	SMD PHOTOTRANSISTORS
P 25	AMBIENT LOGHT SENSOR & COLOR SENSOR
P 26-33	SMD TAPE SPECIFICATIONS
P 34-36	RECOMMENDED SOLDERING PATTERN

2007-2009



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @350mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		

KAF-5060PBGSEEVGAC	InGaN	470		180	300		5.0mm x 6.0mm
	InGaAlP	621	water clear	**650	**1000	100°	
	InGaN	525		180	350		
KAF-5060PBGSURKVGAC	InGaN	470		180	300		
	InGaAlP	635	water clear	180	350	100°	
	InGaN	525		180	350		

KAD1-9090SE28ZC	InGaAlP	625	water clear	*8000	*12000	100°	9mm x 9mm (XPower)
KAD1-9090SY28ZC	InGaAlP	588	water clear	*8000	*11500	100°	
KAD1-9090ZG9ZC	AlInGaN	530	water clear	*12000	*18000	100°	
KAD1-9090QB9ZC	AlInGaN	466	water clear	*1800	*3500	100°	

NOTES:

1. All dimensions are in millimeters(inches).
2. Tolerance is ±0.25mm(0.01") unless otherwise noted.



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPHHS-1005SURCK	InGaAlP	635	water clear	50	150	120°	1.0mm x 0.5mm x 0.5mm (0402)
KPHHS-1005SECK	InGaAlP	601	water clear	50	160	120°	
KPHHS-1005SYCK	InGaAlP	590	water clear	36	120	120°	
KPHHS-1005CGCK	InGaAlP	570	water clear	10	40	120°	
KPHHS-1005VGC-A	InGaN	525	water clear	50	180	120°	
KPHHS-1005VGC-Z	InGaN	535	water clear	380	800	120°	
KPHHS-1005PBC-A	InGaN	470	water clear	18	60	120°	
KPHHS-1005PBC-J	InGaN	470	water clear	50	160	120°	
KP-1608SURC	InGaAlP	628	water clear	70	200	120°	1.6mm x 0.8mm x 1.1mm (0603)
KP-1608SURCK	InGaAlP	635	water clear	50	150	120°	
KP-1608SEC	InGaAlP	601	water clear	70	200	120°	
KP-1608SECK	InGaAlP	601	water clear	50	160	120°	
KP-1608SYC	InGaAlP	588	water clear	50	150	120°	
KP-1608SYCK	InGaAlP	590	water clear	36	120	120°	
KP-1608MGC	InGaAlP	568	water clear	18	70	120°	
KP-1608CGCK	InGaAlP	570	water clear	10	40	120°	
KP-1608ZGC	AlInGaN	525	water clear	110	300	120°	
KP-1608VGC-A	InGaN	525	water clear	50	180	120°	
KP-1608VGC-Z	InGaN	535	water clear	380	800	120°	
KP-1608QBC-D	AlInGaN	470	water clear	50	100	120°	
KP-1608PBC-A	InGaN	470	water clear	18	60	120°	
KP-1608PBC-J	InGaN	470	water clear	50	160	120°	
KPT-1608EC	GaAsP/GaP	625	water clear	4	12	120°	1.6mm x 0.8mm x 0.75mm (0603 Super Thin)
KPT-1608SRC-PRV	GaAlAs	640	water clear	36	100	120°	
KPT-1608SURC	InGaAlP	628	water clear	70	200	120°	
KPT-1608SURCK	InGaAlP	635	water clear	50	150	120°	
KPT-1608SEC	InGaAlP	601	water clear	70	200	120°	
KPT-1608SECK	InGaAlP	601	water clear	50	160	120°	
KPT-1608YC	GaAsP/GaP	588	water clear	2.6	8	120°	
KPT-1608SYC	InGaAlP	588	water clear	50	150	120°	
KPT-1608SYCK	InGaAlP	590	water clear	36	120	120°	
KPT-1608SGC	GaP	568	water clear	4	15	120°	
KPT-1608MGC	InGaAlP	568	water clear	18	70	120°	
KPT-1608CGCK	InGaAlP	570	water clear	10	40	120°	
KPT-1608ZGC	AlInGaN	525	water clear	110	300	120°	
KPT-1608VGC-A	InGaN	525	water clear	50	180	120°	
KPT-1608VGC-Z	InGaN	535	water clear	380	800	120°	
KPT-1608QBC-D	AlInGaN	470	water clear	50	100	120°	
KPT-1608PBC-A	InGaN	470	water clear	18	60	120°	
KPT-1608PBC-J	InGaN	470	water clear	50	160	120°	

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

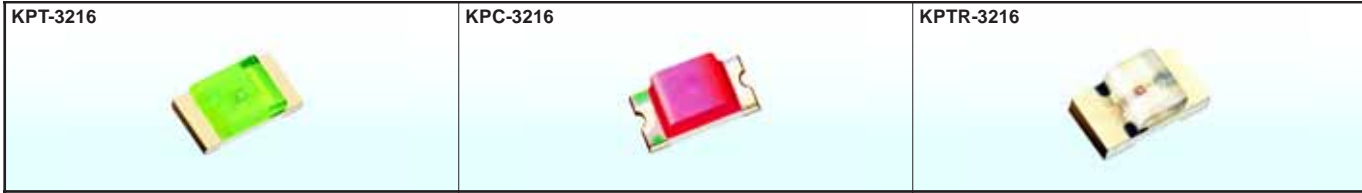


Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KP-2012EC	GaAsP/GaP	625	water clear	4	12	120°	2.0mm x 1.25mm x 1.1mm (0805)
KP-2012SRC-PRV	GaAlAs	640	water clear	36	100	120°	
KP-2012SURC	InGaAlP	628	water clear	70	200	120°	
KP-2012SURCK	InGaAlP	635	water clear	50	150	120°	
KP-2012SEC	InGaAlP	601	water clear	70	200	120°	
KP-2012SECK	InGaAlP	601	water clear	50	160	120°	
KP-2012YC	GaAsP/GaP	588	water clear	2.6	8	120°	
KP-2012SYC	InGaAlP	588	water clear	50	150	120°	
KP-2012SYCK	InGaAlP	590	water clear	36	120	120°	
KP-2012SGC	GaP	568	water clear	4	15	120°	
KP-2012MGC	InGaAlP	568	water clear	18	70	120°	
KP-2012CGCK	InGaAlP	570	water clear	10	40	120°	
KP-2012ZGC	AlInGaN	525	water clear	110	300	120°	
KP-2012VGC-A	InGaN	525	water clear	50	180	120°	
KP-2012VGC-Z	InGaN	535	water clear	380	800	120°	
KP-2012QBC-D	AlInGaN	470	water clear	50	100	120°	
KP-2012PBC-A	InGaN	470	water clear	18	60	120°	
KP-2012PBC-J	InGaN	470	water clear	50	160	120°	
KPT-2012SURC	InGaAlP	628	water clear	70	200	120°	2.0mm x 1.25mm x 0.75mm (0805 Super Thin)
KPT-2012SURCK	InGaAlP	635	water clear	50	150	120°	
KPT-2012SEC	InGaAlP	601	water clear	70	200	120°	
KPT-2012SECK	InGaAlP	601	water clear	50	160	120°	
KPT-2012SYC	InGaAlP	588	water clear	50	150	120°	
KPT-2012SYCK	InGaAlP	590	water clear	36	120	120°	
KPT-2012MGC	InGaAlP	568	water clear	18	70	120°	
KPT-2012CGCK	InGaAlP	570	water clear	10	40	120°	
KPT-2012ZGC	AlInGaN	525	water clear	110	300	120°	
KPT-2012VGC-A	InGaN	525	water clear	50	180	120°	
KPT-2012VGC-Z	InGaN	535	water clear	380	800	120°	
KPT-2012QBC-D	AlInGaN	470	water clear	50	100	120°	
KPT-2012PBC-A	InGaN	470	water clear	18	60	120°	
KPT-2012PBC-J	InGaN	470	water clear	50	160	120°	
KPTC-2012SURC	InGaAlP	628	water clear	70	200	120°	2.0mm x 1.25mm x 0.75mm (0805 Super Thin)
KPTC-2012SURCK	InGaAlP	635	water clear	50	150	120°	
KPTC-2012SEC	InGaAlP	601	water clear	70	200	120°	
KPTC-2012SECK	InGaAlP	601	water clear	50	160	120°	
KPTC-2012SYC	InGaAlP	588	water clear	50	150	120°	
KPTC-2012SYCK	InGaAlP	590	water clear	36	120	120°	
KPTC-2012MGC	InGaAlP	568	water clear	18	70	120°	
KPTC-2012CGCK	InGaAlP	570	water clear	10	40	120°	
KPTC-2012ZGC	AlInGaN	525	water clear	110	300	120°	
KPTC-2012VGC-A	InGaN	525	water clear	50	180	120°	
KPTC-2012VGC-Z	InGaN	535	water clear	380	800	120°	
KPTC-2012QBC-D	AlInGaN	470	water clear	50	100	120°	
KPTC-2012PBC-A	InGaN	470	water clear	18	60	120°	
KPTC-2012PBC-J	InGaN	470	water clear	50	160	120°	

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



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPHCM-2012SURCK	InGaAlP	635	water clear	50	150	110°	2.0mm x 1.25mm x 0.4mm
KPHCM-2012SECK	InGaAlP	601	water clear	50	160	110°	
KPHCM-2012SYCK	InGaAlP	590	water clear	36	120	110°	
KPHCM-2012ZGCK	AllnGaN	525	water clear	110	300	110°	
KPHCM-2012CGCK	InGaAlP	570	water clear	10	40	110°	
KPHCM-2012VGC-A	InGaN	525	water clear	50	180	110°	
KPHCM-2012VGC-Z	InGaN	535	water clear	380	800	110°	
KPHCM-2012QBC-D	AllnGaN	470	water clear	50	100	110°	
KPHCM-2012PBC-A	InGaN	470	water clear	18	60	110°	
KPHCM-2012PBC-J	InGaN	470	water clear	50	160	110°	
KP-23SURC-F	InGaAlP	628	water clear	110	250	120°	3.0mm x 2.4mm x 1.05mm
KP-23SURCK-F	InGaAlP	635	water clear	50	150	120°	
KP-23SEC-F	InGaAlP	601	water clear	70	200	120°	
KP-23SECK-F	InGaAlP	601	water clear	50	160	120°	
KP-23SYC-F	InGaAlP	588	water clear	50	150	120°	
KP-23SYCK-F	InGaAlP	590	water clear	36	120	120°	
KP-23MGC-F	InGaAlP	568	water clear	36	70	120°	
KP-23CGCK-F	InGaAlP	570	water clear	18	60	120°	
KP-23ZGC-F	AllnGaN	525	water clear	110	380	120°	
KP-23VGC-A-F	InGaN	525	water clear	50	180	120°	
KP-23VGC-Z-F	InGaN	535	water clear	380	900	120°	
KP-23QBC-D-F	AllnGaN	470	water clear	50	100	120°	
KP-23PBC-A-F	InGaN	470	water clear	18	50	120°	
KP-23PBC-Z-F-SI	InGaN	465	water clear	110	250	120°	
KP-23ESGC	GaAsP/GaP	625	water clear	7	20	120°	
	GaP	568	water clear	7	20	120°	
KP-23YSGC	GaAsP/GaP	588	water clear	2.6	8	120°	
	GaP	568	water clear	7	20	120°	
KP-3216EC	GaAsP/GaP	625	water clear	4	12	120°	3.2mm x 1.6mm x 1.1mm (1206)
KP-3216SRC-PRV	GaAlAs	640	water clear	36	80	120°	
KP-3216SURC	InGaAlP	628	water clear	70	200	120°	
KP-3216SURCK	InGaAlP	635	water clear	50	150	120°	
KP-3216SEC	InGaAlP	601	water clear	70	200	120°	
KP-3216SECK	InGaAlP	601	water clear	50	160	120°	
KP-3216YC	GaAsP/GaP	588	water clear	2.6	8	120°	
KP-3216SYC	InGaAlP	588	water clear	50	150	120°	
KP-3216SYCK	InGaAlP	590	water clear	36	120	120°	
KP-3216SGC	GaP	568	water clear	4	15	120°	
KP-3216MGC	InGaAlP	568	water clear	18	70	120°	
KP-3216CGCK	InGaAlP	570	water clear	10	40	120°	
KP-3216ZGCK	AllnGaN	525	water clear	110	300	120°	
KP-3216VGC-A	InGaN	525	water clear	50	180	120°	
KP-3216VGC-Z	InGaN	535	water clear	380	800	120°	
KP-3216QBC-D	AllnGaN	470	water clear	50	100	120°	
KP-3216PBC-A	InGaN	470	water clear	18	60	120°	
KP-3216PBC-J	InGaN	470	water clear	50	160	120°	



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPT-3216SURC	InGaAlP	628	water clear	70	200	120°	3.2mm x 1.6mm x 0.75mm (1206 Super Thin) Units : mm(inch) Tolerance : ±0.2(0.008)
KPT-3216SURCK	InGaAlP	635	water clear	50	150	120°	
KPT-3216SEC	InGaAlP	601	water clear	70	200	120°	
KPT-3216SECK	InGaAlP	601	water clear	50	160	120°	
KPT-3216SYC	InGaAlP	588	water clear	50	150	120°	
KPT-3216SYCK	InGaAlP	590	water clear	36	120	120°	
KPT-3216MGC	InGaAlP	568	water clear	18	70	120°	
KPT-3216CGCK	InGaAlP	570	water clear	10	40	120°	
KPT-3216ZGC	AlInGaN	525	water clear	110	300	120°	
KPT-3216VGC-A	InGaN	525	water clear	50	180	120°	
KPT-3216VGC-Z	InGaN	535	water clear	380	800	120°	
KPT-3216QBC-D	AlInGaN	470	water clear	50	100	120°	
KPT-3216PBC-A	InGaN	470	water clear	18	60	120°	
KPT-3216PBC-J	InGaN	470	water clear	50	160	120°	

KPC-3216SURC	InGaAlP	628	water clear	70	200	120°	3.2mm x 1.6mm x 1.1mm (1206) Units : mm(inch) Tolerance : ±0.2(0.008)
KPC-3216SURCK	InGaAlP	635	water clear	50	150	120°	
KPC-3216SEC	InGaAlP	601	water clear	70	200	120°	
KPC-3216SECK	InGaAlP	601	water clear	50	160	120°	
KPC-3216SYC	InGaAlP	588	water clear	50	150	120°	
KPC-3216SYCK	InGaAlP	590	water clear	36	120	120°	
KPC-3216MGC	InGaAlP	568	water clear	18	70	120°	
KPC-3216CGCK	InGaAlP	570	water clear	10	40	120°	
KPC-3216ZGC	AlInGaN	525	water clear	110	300	120°	
KPC-3216VGC-A	InGaN	525	water clear	50	180	120°	
KPC-3216VGC-Z	InGaN	535	water clear	380	800	120°	
KPC-3216QBC-D	AlInGaN	470	water clear	50	100	120°	
KPC-3216PBC-A	InGaN	470	water clear	18	60	120°	
KPC-3216PBC-Z-SI	InGaN	465	water clear	110	250	150°	

KPTR-3216SURC	InGaAlP	628	water clear	70	200	120°	3.2mm x 1.6mm x 1.05mm (1206 Reverse Mount) Units : mm(inch) Tolerance : ±0.2(0.008)
KPTR-3216SURCK	InGaAlP	635	water clear	50	150	120°	
KPTR-3216SEC	InGaAlP	601	water clear	70	200	120°	
KPTR-3216SECK	InGaAlP	601	water clear	50	160	120°	
KPTR-3216SYC	InGaAlP	588	water clear	50	150	120°	
KPTR-3216SYCK	InGaAlP	590	water clear	36	120	120°	
KPTR-3216MGC	InGaAlP	568	water clear	18	70	120°	
KPTR-3216CGCK	InGaAlP	570	water clear	10	40	120°	
KPTR-3216ZGC	AlInGaN	525	water clear	110	300	120°	
KPTR-3216VGC-A	InGaN	525	water clear	50	180	120°	
KPTR-3216VGC-Z	InGaN	535	water clear	380	800	120°	
KPTR-3216QBC-D	AlInGaN	470	water clear	50	100	120°	
KPTR-3216PBC-A	InGaN	470	water clear	18	60	120°	
KPTR-3216PBC-J	InGaN	470	water clear	50	160	120°	



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		

KPA-1606SURCK	InGaAlP	635	water clear	110	250	110°	1.6mm x 0.6mm x 1.2mm (0602 Right Angle)
KPA-1606SECK	InGaAlP	601	water clear	70	250	110°	
KPA-1606SYCK	InGaAlP	590	water clear	50	150	110°	
KPA-1606ZGCK	AllnGaN	525	water clear	70	250	110°	
KPA-1606CGCK	InGaAlP	570	water clear	18	60	110°	
KPA-1606VGC-A	InGaN	525	water clear	70	180	110°	
KPA-1606VGC-Z	InGaN	535	water clear	380	800	110°	
KPA-1606QBC-D	AllnGaN	470	water clear	36	90	110°	
KPA-1606PBC-A	InGaN	470	water clear	18	60	110°	
KPA-1606PBC-Z-SI	InGaN	465	water clear	110	230	110°	

KPA-2106SURC	InGaAlP	628	water clear	110	300	120°	2.1mm x 0.6mm x 1.0mm (0802 Right Angle)
KPA-2106SURCK	InGaAlP	635	water clear	110	250	120°	
KPA-2106SEC	InGaAlP	601	water clear	70	300	120°	
KPA-2106SECK	InGaAlP	601	water clear	70	250	120°	
KPA-2106SYC	InGaAlP	588	water clear	70	180	120°	
KPA-2106SYCK	InGaAlP	590	water clear	50	150	120°	
KPA-2106MGC	InGaAlP	568	water clear	36	80	120°	
KPA-2106CGCK	InGaAlP	570	water clear	18	60	120°	
KPA-2106ZGCK	AllnGaN	525	water clear	70	250	120°	
KPA-2106VGC-A	InGaN	525	water clear	70	180	120°	
KPA-2106VGC-Z	InGaN	535	water clear	380	800	120°	
KPA-2106QBC-D	AllnGaN	470	water clear	36	90	120°	
KPA-2106PBC-A	InGaN	470	water clear	18	60	120°	
KPA-2106PBC-J	InGaN	470	water clear	50	150	120°	

KPJA-2107SURC	InGaAlP	628	water clear	110	300	120°	2.1mm x 0.7mm x 1.3mm (0802 Right Angle)
KPJA-2107SURCK	InGaAlP	635	water clear	110	250	120°	
KPJA-2107SEC	InGaAlP	601	water clear	70	300	120°	
KPJA-2107SECK	InGaAlP	601	water clear	70	250	120°	
KPJA-2107SYC	InGaAlP	588	water clear	70	180	120°	
KPJA-2107SYCK	InGaAlP	590	water clear	50	150	120°	
KPJA-2107MGC	InGaAlP	568	water clear	36	80	120°	
KPJA-2107CGCK	InGaAlP	570	water clear	18	60	120°	
KPJA-2107ZGCK	AllnGaN	525	water clear	70	250	120°	
KPJA-2107VGC-A	InGaN	525	water clear	70	180	120°	
KPJA-2107VGC-Z	InGaN	535	water clear	380	800	120°	
KPJA-2107QBC-D	AllnGaN	470	water clear	36	90	120°	
KPJA-2107PBC-A	InGaN	470	water clear	18	60	120°	
KPJA-2107PBC-Z-SI	InGaN	465	water clear	110	230	150°	

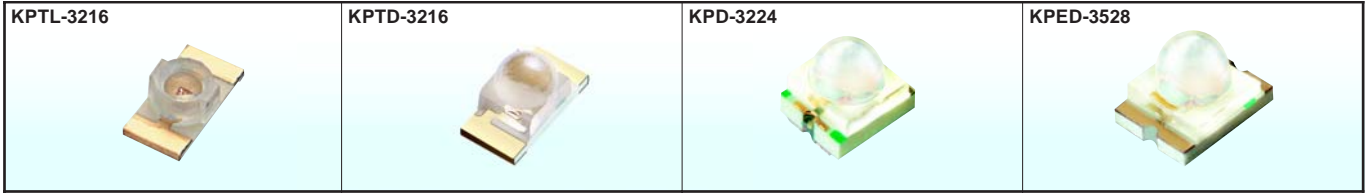


Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPA-3010SURC	InGaAlP	628	water clear	110	300	120°	3.0mm x 1.0mm x 2.0mm (1104 Right Angle)
KPA-3010SURCK	InGaAlP	635	water clear	110	250	120°	
KPA-3010SEC	InGaAlP	601	water clear	70	300	120°	
KPA-3010SECK	InGaAlP	601	water clear	70	250	120°	
KPA-3010SYC	InGaAlP	588	water clear	70	180	120°	
KPA-3010SYCK	InGaAlP	590	water clear	50	150	120°	
KPA-3010MGC	InGaAlP	568	water clear	36	80	120°	
KPA-3010CGCK	InGaAlP	570	water clear	18	60	120°	
KPA-3010ZGC	AlInGaN	525	water clear	70	250	120°	
KPA-3010VGC-A	InGaN	525	water clear	70	180	120°	
KPA-3010VGC-Z	InGaN	535	water clear	380	800	120°	
KPA-3010QBC-D	AlInGaN	470	water clear	36	90	120°	
KPA-3010PBC-A	InGaN	470	water clear	18	60	120°	
KPA-3010PBC-Z-SI	InGaN	465	water clear	110	230	120°	

KPA-3210SURC	InGaAlP	628	water clear	110	300	120°	3.2mm x 1.0mm x 1.5mm (1304 Right Angle)
KPA-3210SURCK	InGaAlP	635	water clear	110	250	120°	
KPA-3210SEC	InGaAlP	601	water clear	70	300	120°	
KPA-3210SECK	InGaAlP	601	water clear	70	250	120°	
KPA-3210SYC	InGaAlP	588	water clear	70	180	120°	
KPA-3210SYCK	InGaAlP	590	water clear	50	150	120°	
KPA-3210MGC	InGaAlP	568	water clear	36	80	120°	
KPA-3210CGCK	InGaAlP	570	water clear	18	60	120°	
KPA-3210ZGC	AlInGaN	525	water clear	70	250	120°	
KPA-3210VGC-A	InGaN	525	water clear	70	180	120°	
KPA-3210VGC-Z	InGaN	535	water clear	380	800	120°	
KPA-3210QBC-D	AlInGaN	470	water clear	36	90	120°	
KPA-3210PBC-A	InGaN	470	water clear	18	60	120°	
KPA-3210PBC-J	InGaN	470	water clear	50	150	120°	

KPL-3015SURC	InGaAlP	628	water clear	110	280	70°	3.0mm x 1.5mm x 1.4mm (1106)
KPL-3015SURCK	InGaAlP	635	water clear	70	240	70°	
KPL-3015SEC	InGaAlP	601	water clear	180	500	70°	
KPL-3015SECK	InGaAlP	601	water clear	70	300	70°	
KPL-3015SYC	InGaAlP	588	water clear	50	200	70°	
KPL-3015SYCK	InGaAlP	590	water clear	36	150	70°	
KPL-3015MGC	InGaAlP	568	water clear	70	140	70°	
KPL-3015CGCK	InGaAlP	570	water clear	36	90	70°	
KPL-3015ZGC	AlInGaN	525	water clear	380	850	70°	
KPL-3015VGC-A	InGaN	525	water clear	110	300	70°	
KPL-3015VGC-Z	InGaN	535	water clear	1200	1800	70°	
KPL-3015QBC-D	AlInGaN	470	water clear	70	180	70°	
KPL-3015PBC-A	InGaN	470	water clear	50	120	70°	
KPL-3015PBC-Z-SI	InGaN	465	water clear	480	850	70°	

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



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		

KPTL-3216SURCK	InGaAlP	635	water clear	280	550	70°	3.2mm x 1.6mm x 1.1mm (1206)
KPTL-3216SECK	InGaAlP	601	water clear	380	550	70°	
KPTL-3216SYCK	InGaAlP	590	water clear	110	350	70°	
KPTL-3216ZGC	AlInGaN	525	water clear	650	1100	70°	
KPTL-3216CGCK	InGaAlP	570	water clear	70	200	70°	
KPTL-3216VGC-A	InGaN	525	water clear	280	450	70°	
KPTL-3216VGC-Z	InGaN	535	water clear	1500	2200	70°	
KPTL-3216QBC-D	AlInGaN	470	water clear	180	340	70°	
KPTL-3216PBC-A	InGaN	470	water clear	50	200	70°	
KPTL-3216PBC-J	InGaN	470	water clear	180	400	70°	

KPTD-3216SURC	InGaAlP	628	water clear	280	600	50°	3.2mm x 1.6mm x 1.8mm (1206 Dome Lens)
KPTD-3216SURCK	InGaAlP	635	water clear	180	500	50°	
KPTD-3216SEC	InGaAlP	601	water clear	380	1200	50°	
KPTD-3216SECK	InGaAlP	601	water clear	280	700	50°	
KPTD-3216SYC	InGaAlP	588	water clear	110	300	50°	
KPTD-3216SYCK	InGaAlP	590	water clear	70	250	50°	
KPTD-3216MGC	InGaAlP	568	water clear	110	350	50°	
KPTD-3216CGCK	InGaAlP	570	water clear	70	200	50°	
KPTD-3216ZGC	AlInGaN	525	water clear	380	850	50°	
KPTD-3216VGC-A	InGaN	525	water clear	280	800	50°	
KPTD-3216VGC-Z	InGaN	535	water clear	2200	5000	50°	
KPTD-3216QBC-D	AlInGaN	470	water clear	280	500	40°	
KPTD-3216PBC-A	InGaN	470	water clear	70	220	50°	
KPTD-3216PBC-J	InGaN	470	water clear	650	1200	50°	

KPD-3224SURC	InGaAlP	628	water clear	650	1200	20°	3.2mm x 2.4mm x 2.4mm (Dome Lens)
KPD-3224SURCK	InGaAlP	635	water clear	480	1000	20°	
KPD-3224SEC	InGaAlP	601	water clear	650	2000	20°	
KPD-3224SECK	InGaAlP	601	water clear	650	1300	20°	
KPD-3224SYC	InGaAlP	588	water clear	180	700	20°	
KPD-3224SYCK	InGaAlP	590	water clear	110	600	20°	
KPD-3224MGC	InGaAlP	568	water clear	280	550	20°	
KPD-3224CGCK	InGaAlP	570	water clear	180	550	20°	
KPD-3224ZGC	AlInGaN	525	water clear	1200	2400	20°	
KPD-3224VGC-A	InGaN	525	water clear	480	1000	20°	
KPD-3224VGC-Z	InGaN	535	water clear	3800	6000	20°	
KPD-3224QBC-D	AlInGaN	470	water clear	480	900	20°	
KPD-3224PBC-A	InGaN	470	water clear	110	380	20°	
KPD-3224PBC-Z-SI	InGaN	465	water clear	1800	3000	20°	

KPED-3528SURC	InGaAlP	628	water clear	110	500	40°	3.5mm x 2.8mm x 3.2mm (Dome Lens)
KPED-3528SURCK	InGaAlP	635	water clear	110	450	40°	
KPED-3528SEC	InGaAlP	601	water clear	380	700	40°	
KPED-3528SECK	InGaAlP	601	water clear	280	550	40°	
KPED-3528SYC	InGaAlP	588	water clear	70	250	40°	
KPED-3528SYCK	InGaAlP	590	water clear	70	200	40°	
KPED-3528MGC	InGaAlP	568	water clear	70	250	40°	
KPED-3528CGCK	InGaAlP	570	water clear	70	170	40°	
KPED-3528ZGC	AlInGaN	525	water clear	480	1400	40°	
KPED-3528VGC-A	InGaN	525	water clear	110	300	40°	
KPED-3528VGC-Z	InGaN	535	water clear	1200	2500	40°	
KPED-3528QBC-D	AlInGaN	470	water clear	280	500	40°	
KPED-3528PBC-A	InGaN	470	water clear	50	150	40°	
KPED-3528PBC-Z-SI	InGaN	465	water clear	900	1500	40°	

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



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimension
				Min.	Typ.		
KPED-3820SURC	InGaAlP	628	water clear	180	500	60°(H) 35°(V)	3.8mm x 2.0mm x 3.2mm (Dome Lens)
KPED-3820SURCK	InGaAlP	635	water clear	180	450	60°(H) 35°(V)	
KPED-3820SEC	InGaAlP	601	water clear	480	800	60°(H) 35°(V)	
KPED-3820SECK	InGaAlP	601	water clear	280	600	60°(H) 35°(V)	
KPED-3820SYC	InGaAlP	588	water clear	110	250	60°(H) 35°(V)	
KPED-3820SYCK	InGaAlP	590	water clear	70	200	60°(H) 35°(V)	
KPED-3820MGC	InGaAlP	568	water clear	70	250	60°(H) 35°(V)	
KPED-3820CGCK	InGaAlP	570	water clear	70	170	60°(H) 35°(V)	
KPED-3820ZGC	AlInGaN	525	water clear	480	1200	60°(H) 35°(V)	
KPED-3820VGC-A	InGaN	525	water clear	180	450	60°(H) 35°(V)	
KPED-3820VGC-Z	InGaN	535	water clear	2200	2800	60°(H) 35°(V)	
KPED-3820QBC-D	AlInGaN	470	water clear	110	300	60°(H) 35°(V)	
KPED-3820PBC-A	InGaN	470	water clear	50	150	60°(H) 35°(V)	
KPED-3820PBC-Z-SI	InGaN	465	water clear	480	1100	60°(H) 35°(V)	

KPTB-1612ESGC	GaAsP/GaP	625	water clear	4	12	120°	1.6mm x 1.25mm x 0.65mm (0605 Bi-Color)
	GaP	568		4	12		
KPTB-1612PBASEKC	InGaN	470	water clear	18	60	120°	
	InGaAlP	601		70	140		
KPTB-1612SYKCGKC	InGaAlP	590	water clear	36	100	120°	
	InGaAlP	570		18	50		
KPTB-1612SURKCGKC	InGaAlP	635	water clear	70	150	120°	
	InGaAlP	570		18	50		
KPTB-1612SURKQBDC	InGaAlP	635	water clear	70	150	120°	
	AlInGaN	470		50	90		

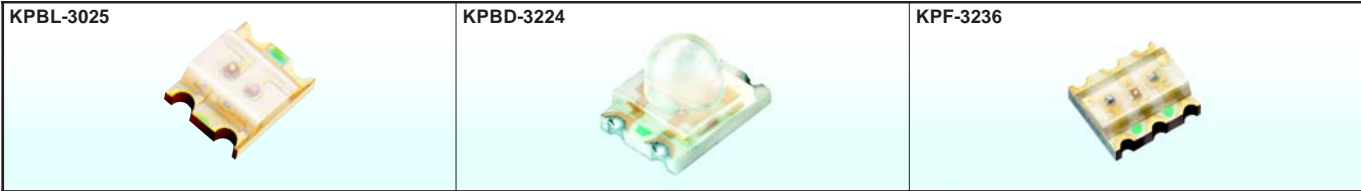
KPTB-1615ESGC	GaAsP/GaP	625	water clear	4	12	120°	1.6mm x 1.5mm x 0.7mm (0606 Bi-Color)
	GaP	568		4	12		
KPTB-1615SURKSGC	InGaAlP	635	water clear	70	150	120°	
	GaP	568		4	12		
KPTB-1615SURKCGKC	InGaAlP	635	water clear	70	150	120°	
	InGaAlP	570		18	50		
KPTB-1615YSGC	GaAsP/GaP	588	water clear	2.6	8	120°	
	GaP	568		4	12		
KPTB-1615SYKCGKC	InGaAlP	590	water clear	36	100	120°	
	InGaAlP	570		18	50		
KPTB-1615SGNC	GaP	568	water clear	4	12	120°	
	GaAsP/GaP	610		4	12		
KPTB-1615SURKQBDC	InGaAlP	635	water clear	70	150	120°	
	AlInGaN	470		50	90		

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



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension	
				Min.	Typ.			
KPHBM-2012CGKSEKC	InGaAlP	570	water clear	36	80	120°	<p>2.0mm x 1.25mm x 0.45mm (Bi-Color)</p> <p>LED CHIP</p> <p>2[0.079]</p> <p>1.25[.049]</p> <p>1.3[.051]</p> <p>1.2[.047]</p> <p>0.15[.006]</p> <p>0.4[.016]</p> <p>0.45[.018]MAX</p> <p>0.5[0.02]</p> <p>0.5[0.02]</p> <p>0.45[.018]</p> <p>POLARITY MARK</p> <p>Units : mm(inch) Tolerance : ±0.1(0.004)</p>	
	InGaAlP	601		110	250			
KPHBM-2012PBACGKC	InGaN	470	water clear	18	50	120°		
	InGaAlP	570		36	80			
KPHBM-2012PBASURKC	InGaN	470	water clear	18	50	120°		
	InGaAlP	635		70	200			
KPHBM-2012SURKCGKC	InGaAlP	635	water clear	70	200	120°		
	InGaAlP	570		36	80			
KPBA-3010ESGC	GaAsP/GaP	625	water clear	4	12	140°		<p>3.0mm x 1.0mm x 2mm (1104 Right Angle, Bi-Color)</p> <p>0.35[.014]</p> <p>0.35[.014]</p> <p>3[.118]</p> <p>1[.04]</p> <p>2[.079]</p> <p>1[.04]±0.2</p> <p>0.58[.023]</p> <p>0.4[.016]</p> <p>0.2[.008]</p> <p>0.8[.032]</p> <p>0.4[.016]</p> <p>POLARITY MARK</p> <p>Units : mm(inch) Tolerance : ±0.15(0.006)</p>
	GaP	568		4	12			
KPBA-3010YSGC	GaAsP/GaP	588	water clear	2.6	6	140°		
	GaP	568		4	12			
KPBA-3010SRSGC-PRV	GaAlAs	640	water clear	50	80	140°		
	GaP	568		4	12			
KPBA-3010SURKSGC	InGaAlP	635	water clear	110	200	140°		
	GaP	568		4	12			
KPBA-3010SURKQBDC	InGaAlP	635	water clear	110	200	140°		
	AlInGaN	470		36	90			
KPBA-3010SURKMGKC	InGaAlP	635	water clear	110	200	140°		
	InGaAlP	570		36	80			
KPBA-3010SYKCGKC	InGaAlP	590	water clear	50	150	140°		
	InGaAlP	570		18	50			
KPB-3025ESGC	GaAsP/GaP	625	water clear	4	12	120°	<p>3.0mm x 2.5mm x 1.1mm (1109 Bi-Color)</p> <p>3(.118)</p> <p>2(.079)</p> <p>1.5(.06)</p> <p>0.8(.031)</p> <p>1.5(.098)</p> <p>2.5(.098)</p> <p>1.1(.043)MAX.</p> <p>0.5(.02)</p> <p>1(.04)</p> <p>1(.04)</p> <p>0.5(.02)</p> <p>1(.04)</p> <p>1(.04)</p> <p>POLARITY MARK</p> <p>Units : mm(inch) Tolerance : ±0.2(0.008)</p>	
	GaP	568		4	12			
KPB-3025EYEC	GaAsP/GaP	625	water clear	4	12	120°		
	GaAsP/GaP	588		2.6	8			
KPB-3025SRSGC-PRV	GaAlAs	640	water clear	36	100	120°		
	GaP	568		4	12			
KPB-3025SRCGKC-PRV	GaAlAs	640	water clear	36	100	120°		
	InGaAlP	570		18	50			
KPB-3025NSGC	GaAsP/GaP	610	water clear	4	12	120°		
	GaP	568		4	12			
KPB-3025YSGC	GaAsP/GaP	588	water clear	2.6	8	120°		
	GaP	568		4	12			
KPB-3025SURKCGKC	InGaAlP	635	water clear	50	160	120°		
	InGaAlP	570		18	50			
KPB-3025PBASYKC	InGaN	470	water clear	18	60	120°		
	InGaAlP	590		50	130			

NOTE:
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Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		

Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPBL-3025ESGC	GaAsP/GaP	625	water clear	7	20	100°	3.0mm x 2.5mm x 1.4mm (1109 Bi-Color)
	GaP	568	water clear	7	20		
KPBL-3025EYC	GaAsP/GaP	625	water clear	7	20	100°	
	GaAsP/GaP	588	water clear	4	15		
KPBL-3025SRSGC-PRV	GaAlAs	640	water clear	36	100	100°	
	GaP	568	water clear	7	20		
KPBL-3025NSGC	GaAsP/GaP	610	water clear	7	20	100°	
	GaP	568	water clear	7	20		
KPBL-3025YSGC	GaAsP/GaP	588	water clear	4	15	100°	
	GaP	568	water clear	7	20		
KPBL-3025SURKCGKC	InGaAlP	635	water clear	110	300	100°	
	InGaAlP	570	water clear	36	80		
KPBL-3025PBASYKC	InGaN	470	water clear	70	150	100°	
	InGaAlP	590	water clear	70	150		

KPBD-3224ESGC	GaAsP/GaP	625	water clear	18	60	20°	3.2mm x 2.4mm x 2.4mm (Dome Lens)
	GaP	568	water clear	10	40		
KPBD-3224YSGC	GaAsP/GaP	588	water clear	4	15	20°	
	GaP	568	water clear	10	40		
KPBD-3224SURKCGKC	InGaAlP	635	water clear	380	800	20°	
	InGaAlP	570	water clear	110	300		
KPBD-3224SYKCGKC	InGaAlP	590	water clear	110	500	20°	
	InGaAlP	570	water clear	110	300		
KPBD-3224SURKSGC	InGaAlP	635	water clear	380	800	20°	
	GaP	568	water clear	18	60		

KPF-3236SRSGPBAC-PRV	GaAlAs	640	water clear	36	70	120°	3.2mm x 3.6mm x 1.1mm (Full Color)
	GaP	568	water clear	4	12		
	InGaN	470	water clear	18	60		
KPF-3236SURKVGAPBAC	InGaAlP	635	water clear	70	150	120°	
	InGaN	525	water clear	50	150		
KPF-3236SURKMGKPBAC	InGaAlP	635	water clear	70	150	120°	
	InGaAlP	570	water clear	18	60		
	InGaN	470	water clear	18	60		

NOTE:
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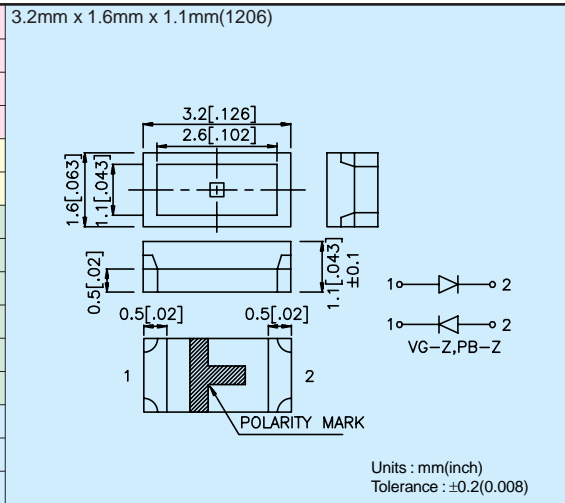
Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPHK-1608SURC	InGaAlP	628	water clear	110	250	90°	1.6mm x 0.8mm x 0.7mm (0603)
KPHK-1608SURCK	InGaAlP	635	water clear	70	200	90°	
KPHK-1608SEC	InGaAlP	601	water clear	110	280	90°	
KPHK-1608SECK	InGaAlP	601	water clear	70	250	90°	
KPHK-1608SYC	InGaAlP	588	water clear	50	150	90°	
KPHK-1608SYCK	InGaAlP	590	water clear	36	120	90°	
KPHK-1608MGC	InGaAlP	568	water clear	36	90	90°	
KPHK-1608CGCK	InGaAlP	570	water clear	18	60	90°	
KPHK-1608TGC	InGaN	505	water clear	70	150	90°	
KPHK-1608ZGC	AlInGaN	525	water clear	110	300	90°	
KPHK-1608VGC-A	InGaN	525	water clear	70	200	90°	
KPHK-1608VGC-Z	InGaN	535	water clear	480	1000	90°	
KPHK-1608QBC-D	AlInGaN	470	water clear	50	120	90°	
KPHK-1608PBC-A	InGaN	470	water clear	36	70	90°	
KPHK-1608PBC-J	InGaN	470	water clear	70	250	90°	
KPTK-2012SURC	InGaAlP	628	water clear	110	250	100°	2.0mm x 1.25mm x 0.75mm (0805)
KPTK-2012SURCK	InGaAlP	635	water clear	70	200	100°	
KPTK-2012SEC	InGaAlP	601	water clear	110	280	100°	
KPTK-2012SECK	InGaAlP	601	water clear	70	250	100°	
KPTK-2012SYC	InGaAlP	588	water clear	50	150	100°	
KPTK-2012SYCK	InGaAlP	590	water clear	36	120	100°	
KPTK-2012MGC	InGaAlP	568	water clear	36	90	100°	
KPTK-2012CGCK	InGaAlP	570	water clear	18	60	100°	
KPTK-2012TGC	InGaN	505	water clear	70	150	100°	
KPTK-2012ZGC	AlInGaN	525	water clear	110	300	100°	
KPTK-2012VGC-A	InGaN	525	water clear	70	200	100°	
KPTK-2012VGC-Z	InGaN	535	water clear	480	1000	100°	
KPTK-2012QBC-D	AlInGaN	470	water clear	50	120	100°	
KPTK-2012PBC-A	InGaN	470	water clear	36	70	100°	
KPTK-2012PBC-J	InGaN	470	water clear	70	250	100°	
KPKA-2810SURC	InGaAlP	628	water clear	70	250	90°	2.8mm x 1.0mm x 1.2mm (1104 Right Angle)
KPKA-2810SURCK	InGaAlP	635	water clear	70	200	90°	
KPKA-2810SEC	InGaAlP	601	water clear	110	300	90°	
KPKA-2810SECK	InGaAlP	601	water clear	70	250	90°	
KPKA-2810SYC	InGaAlP	588	water clear	50	150	90°	
KPKA-2810SYCK	InGaAlP	590	water clear	36	120	90°	
KPKA-2810MGC	InGaAlP	568	water clear	36	90	90°	
KPKA-2810CGCK	InGaAlP	570	water clear	18	60	90°	
KPKA-2810TGC	InGaN	505	water clear	70	150	90°	
KPKA-2810ZGC	AlInGaN	525	water clear	110	300	90°	
KPKA-2810VGC-A	InGaN	525	water clear	70	200	90°	
KPKA-2810VGC-Z	InGaN	535	water clear	480	1000	90°	
KPKA-2810QBC-D	AlInGaN	470	water clear	50	120	90°	
KPKA-2810PBC-A	InGaN	470	water clear	36	70	90°	
KPKA-2810PBC-Z-SI	InGaN	465	water clear	110	250	110°	

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

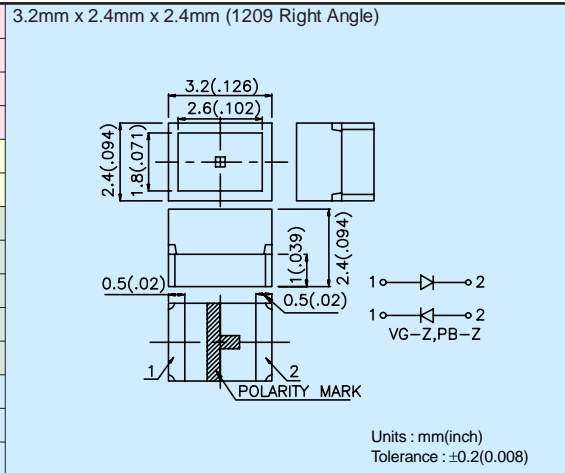


Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		

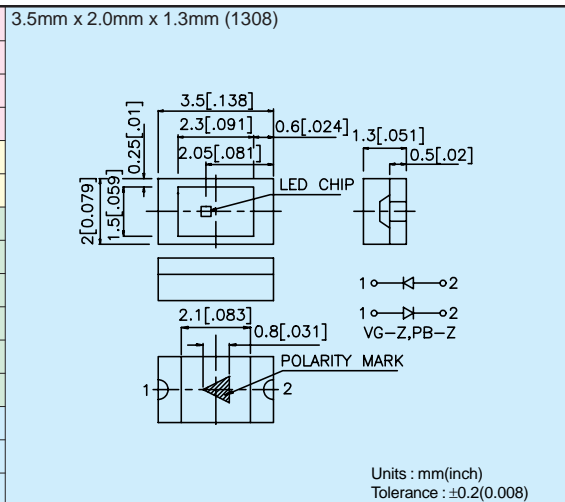
KPK-3216SURC	InGaAlP	628	water clear	110	250	90°
KPK-3216SURCK	InGaAlP	635	water clear	70	200	90°
KPK-3216SEC	InGaAlP	601	water clear	110	300	90°
KPK-3216SECK	InGaAlP	601	water clear	70	250	90°
KPK-3216SYC	InGaAlP	588	water clear	50	150	90°
KPK-3216SYCK	InGaAlP	590	water clear	36	120	90°
KPK-3216MGC	InGaAlP	568	water clear	36	90	90°
KPK-3216CGCK	InGaAlP	570	water clear	18	60	90°
KPK-3216TGC	InGaN	505	water clear	70	150	90°
KPK-3216ZGC	AlInGaN	525	water clear	110	300	90°
KPK-3216VGC-A	InGaN	525	water clear	70	200	90°
KPK-3216VGC-Z	InGaN	535	water clear	480	1000	90°
KPK-3216QBC-D	AlInGaN	470	water clear	50	120	90°
KPK-3216PBC-A	InGaN	470	water clear	36	70	90°
KPK-3216PBC-Z-SI	InGaN	465	water clear	110	250	110°



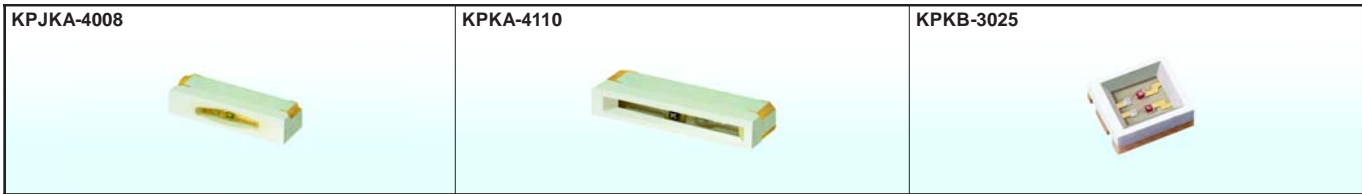
KPEKA-3224SURC	InGaAlP	628	water clear	110	280	90°
KPEKA-3224SURCK	InGaAlP	635	water clear	110	250	90°
KPEKA-3224SEC	InGaAlP	601	water clear	110	300	90°
KPEKA-3224SECK	InGaAlP	601	water clear	110	250	90°
KPEKA-3224SYC	InGaAlP	588	water clear	50	150	90°
KPEKA-3224SYCK	InGaAlP	590	water clear	50	120	90°
KPEKA-3224MGC	InGaAlP	568	water clear	50	110	90°
KPEKA-3224CGCK	InGaAlP	570	water clear	36	60	90°
KPEKA-3224ZGC	AlInGaN	525	water clear	110	300	90°
KPEKA-3224VGC-A	InGaN	525	water clear	70	250	90°
KPEKA-3224VGC-Z	InGaN	535	water clear	480	1000	90°
KPEKA-3224QBC-D	AlInGaN	470	water clear	50	120	90°
KPEKA-3224PBC-A	InGaN	470	water clear	36	100	90°
KPEKA-3224PBC-Z-SI	InGaN	465	water clear	110	250	110°



KPK-3520SURC	InGaAlP	628	water clear	70	230	120°
KPK-3520SURCK	InGaAlP	635	water clear	50	200	120°
KPK-3520SEC	InGaAlP	601	water clear	110	300	120°
KPK-3520SECK	InGaAlP	601	water clear	70	250	120°
KPK-3520SYC	InGaAlP	588	water clear	50	150	120°
KPK-3520SYCK	InGaAlP	590	water clear	36	120	120°
KPK-3520MGC	InGaAlP	568	water clear	36	90	120°
KPK-3520CGCK	InGaAlP	570	water clear	18	50	120°
KPK-3520TGC	InGaN	505	water clear	50	150	120°
KPK-3520ZGC	AlInGaN	525	water clear	110	200	120°
KPK-3520VGC-A	InGaN	525	water clear	70	200	120°
KPK-3520VGC-Z	InGaN	535	water clear	480	1000	120°
KPK-3520QBC-D	AlInGaN	470	water clear	70	130	120°
KPK-3520PBC-A	InGaN	470	water clear	18	60	120°
KPK-3520PBC-Z-SI	InGaN	465	water clear	110	250	110°



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

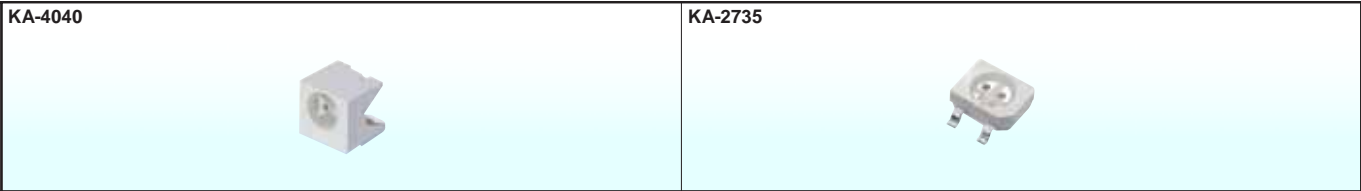


Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPJKA-4008SURC	InGaAlP	628	water clear	110	250	90°	4.0mm x 0.8mm x 1.4mm (1503 Right Angle) Units : mm(inch) Tolerance : ±0.2(0.008)
KPJKA-4008SEC	InGaAlP	601	water clear	110	300	90°	
KPJKA-4008SYC	InGaAlP	588	water clear	50	150	90°	
KPJKA-4008MGC	InGaAlP	568	water clear	36	90	90°	
KPJKA-4008TGC	InGaN	505	water clear	70	150	90°	
KPJKA-4008ZGC	AlInGaN	525	water clear	110	300	90°	
KPJKA-4008VGC-A	InGaN	525	water clear	70	200	90°	
KPJKA-4008VGC-Z	InGaN	535	water clear	480	1000	90°	
KPJKA-4008QBC-D	AlInGaN	470	water clear	50	120	90°	
KPJKA-4008PBC-A	InGaN	470	water clear	36	70	90°	
KPJKA-4008PBC-Z-SI	InGaN	465	water clear	110	250	110°	

KPKA-4110SURC	InGaAlP	628	water clear	110	250	90°	4.1mm x 1.0mm x 1.52mm (1604 Right Angle) Units : mm(inch) Tolerance : ±0.25(0.01)
KPKA-4110SEC	InGaAlP	601	water clear	110	300	90°	
KPKA-4110SYC	InGaAlP	588	water clear	50	150	90°	
KPKA-4110MGC	InGaAlP	568	water clear	36	90	90°	
KPKA-4110TGC	InGaN	505	water clear	70	150	90°	
KPKA-4110ZGC	AlInGaN	525	water clear	110	300	90°	
KPKA-4110VGC-A	InGaN	525	water clear	70	200	90°	
KPKA-4110VGC-Z	InGaN	535	water clear	480	1000	90°	
KPKA-4110QBC-D	AlInGaN	470	water clear	50	120	90°	
KPKA-4110PBC-A	InGaN	470	water clear	36	70	90°	
KPKA-4110PBC-Z-SI	InGaN	465	water clear	110	250	110°	

KPKB-3025ESGC	GaAsP/GaP	625	water clear	10	20	120°	3.0mm x 2.5mm x 1.3mm (1109 Bi-Color) Units : mm(inch) Tolerance : ±0.2(0.008)
	GaP	568		10	20		
KPKB-3025YSGC	GaAsP/GaP	588	water clear	2.6	8	120°	
	GaP	568		10	20		
KPKB-3025SURKMGKC	InGaAlP	635	water clear	70	150	120°	
	InGaAlP	570		10	50		
KPKB-3025SYKMGKC	InGaAlP	590	water clear	36	120	120°	
	InGaAlP	570		10	50		

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



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ/2	Dimension
				Min.	Typ.		
KA-4040SURCK	InGaAlP	635	water clear	70	180	90°	4.0mm x 4.0mm Right Angle
KA-4040SEC	InGaAlP	601	water clear	180	350	90°	
KA-4040SECK	InGaAlP	601	water clear	70	200	90°	
KA-4040SYC	InGaAlP	588	water clear	50	150	90°	
KA-4040SYCK	InGaAlP	590	water clear	50	120	90°	
KA-4040MGC	InGaAlP	568	water clear	50	100	90°	
KA-4040CGCK	InGaAlP	570	water clear	36	70	90°	
KA-4040ZGC	AlInGaN	525	water clear	480	800	90°	
KA-4040VGC-A	InGaN	525	water clear	70	200	90°	
KA-4040VGC-Z	InGaN	535	water clear	650	1300	90°	
KA-4040PBC-A	InGaN	470	water clear	36	120	90°	
KA-4040PBS-Z	InGaN	465	water clear	110	280	120°	

KA-2735ESGC	GaAsP/GaP	625	water clear	7	30	120°	2.7mm x 3.5mm (Bi-Color)
	GaP	568					
KA-2735SURKMGC	InGaAlP	635	water clear	70	200	120°	
	InGaAlP	568					

NOTES:

1. All dimensions are in millimeters(inches).
2. Tolerance is ±0.25mm(0.01") unless otherwise noted.

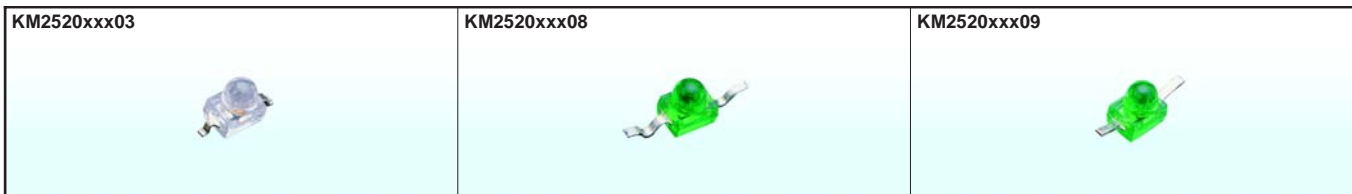
KM-23-F



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2 θ 1/2	Dimension
				Min.	Typ.		
KM-23ID-F	GaAsP/GaP	625	red diffused	4	15	140°	<p>SOT-23 Surface Mount LED Lamp (3mm x 1.3mm)</p> <p> KM-23xx-F KM-23SRx-F KM-23ESGx KM-23VGC-Z-F KM-23VGC-Z-F SG E KM-23PBC-J-F KM-23PBC-J-F 3 </p> <p> 1 ANODE 1 CATHODE 2 N.C. 2 N.C. 3 CATHODE 3 ANODE </p>
KM-23EC-F	GaAsP/GaP	625	water clear	4	15	140°	
KM-23SRD-F	GaAlAs	640	red diffused	36	70	140°	
KM-23SRC-F	GaAlAs	640	water clear	36	70	140°	
KM-23YD-F	GaAsP/GaP	588	yellow diffused	1.6	5	140°	
KM-23YC-F	GaAsP/GaP	588	water clear	1.6	5	140°	
KM-23SGC-F	GaP	568	water clear	4	15	140°	
KM-23SYD-F	InGaAlP	588	yellow diffused	50	100	140°	
KM-23SYC-F	InGaAlP	588	water clear	50	150	140°	
KM-23CGCK-F	InGaAlP	570	water clear	18	40	140°	
KM-23ZGC-F	AlInGaN	525	water clear	110	380	140°	
KM-23VGC-A-F	InGaN	525	water clear	50	180	140°	
KM-23VGC-Z-F	InGaN	535	water clear	380	900	140°	
KM-23PBC-A-F	InGaN	470	water clear	18	60	140°	
KM-23PBC-J-F	InGaN	470	water clear	50	160	140°	
KM-23ESGW	GaAsP/GaP	625	white diffused	4	15	140°	
	GaP	568		4	15	140°	
KM-23ESGC	GaAsP/GaP	625	water clear	4	15	140°	
	GaP	568		4	15	140°	

NOTES:

1. All dimensions are in millimeters(inches).
2. Tolerance is $\pm 0.25\text{mm}(0.01")$ unless otherwise noted.



Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ/2	Dimension
				Min.	Typ.		

Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA Min.	Iv (mcd) @20mA Typ.	Viewing Angle 2θ/2	Dimension
KM2520SURC03	InGaAlP	628	water clear	650	1600	20°	Subminiature Solid State Lamps Gull Wing Lead
KM2520SURCK03	InGaAlP	635	water clear	480	1400	20°	
KM2520SEC03	InGaAlP	601	water clear	1200	2000	20°	
KM2520SECK03	InGaAlP	601	water clear	900	1800	20°	
KM2520SYC03	InGaAlP	588	water clear	900	1500	20°	
KM2520SYCK03	InGaAlP	590	water clear	650	1300	20°	
KM2520MGC03	InGaAlP	568	water clear	280	600	20°	
KM2520CGCK03	InGaAlP	570	water clear	110	400	20°	
KM2520ZGC03	AlInGaN	525	water clear	1800	3300	20°	
KM2520VGC-A03	InGaN	525	water clear	380	800	20°	
KM2520VGC-Z03	InGaN	535	water clear	3300	6400	20°	
KM2520QBC-D03	AlInGaN	470	water clear	180	500	20°	
KM2520PBC-A03	InGaN	470	water clear	110	250	20°	
KM2520PBC-J03	InGaN	470	water clear	380	1000	20°	

Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA Min.	Iv (mcd) @20mA Typ.	Viewing Angle 2θ/2	Dimension
KM2520SURC08	InGaAlP	628	water clear	650	1600	20°	Subminiature Solid State Lamps Yoke Lead
KM2520SURCK08	InGaAlP	635	water clear	480	1400	20°	
KM2520SEC08	InGaAlP	601	water clear	1200	2000	20°	
KM2520SECK08	InGaAlP	601	water clear	900	1800	20°	
KM2520SYC08	InGaAlP	588	water clear	900	1500	20°	
KM2520SYCK08	InGaAlP	590	water clear	650	1300	20°	
KM2520MGC08	InGaAlP	568	water clear	280	600	20°	
KM2520CGCK08	InGaAlP	570	water clear	110	400	20°	
KM2520ZGC08	AlInGaN	525	water clear	1800	3300	20°	
KM2520VGC-A08	InGaN	525	water clear	380	800	20°	
KM2520VGC-Z08	InGaN	535	water clear	3300	6400	20°	
KM2520QBC-D08	AlInGaN	470	water clear	180	500	20°	
KM2520PBC-A08	InGaN	470	water clear	110	250	20°	
KM2520PBC-J08	InGaN	470	water clear	380	1000	20°	

Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA Min.	Iv (mcd) @20mA Typ.	Viewing Angle 2θ/2	Dimension
KM2520SURC09	InGaAlP	628	water clear	650	1600	20°	Subminiature Solid State Lamps Z-Bend Lead
KM2520SURCK09	InGaAlP	635	water clear	480	1400	20°	
KM2520SEC09	InGaAlP	601	water clear	1200	2000	20°	
KM2520SECK09	InGaAlP	601	water clear	900	1800	20°	
KM2520SYC09	InGaAlP	588	water clear	900	1500	20°	
KM2520SYCK09	InGaAlP	590	water clear	650	1300	20°	
KM2520MGC09	InGaAlP	568	water clear	280	600	20°	
KM2520CGCK09	InGaAlP	570	water clear	110	400	20°	
KM2520ZGC09	AlInGaN	525	water clear	1800	3300	20°	
KM2520VGC-A09	InGaN	525	water clear	380	800	20°	
KM2520VGC-Z09	InGaN	535	water clear	3300	6400	20°	
KM2520QBC-D09	AlInGaN	470	water clear	180	500	20°	
KM2520PBC-A09	InGaN	470	water clear	110	250	20°	
KM2520PBC-J09	InGaN	470	water clear	380	1000	20°	

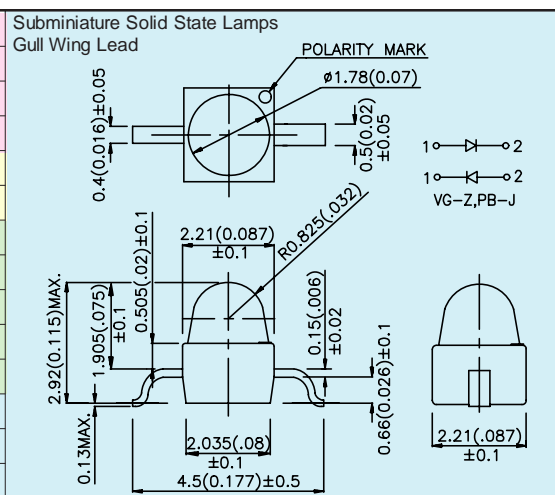
NOTES:

- All dimensions are in millimeters(inches).
- Tolerance is ±0.25mm(0.01") unless otherwise noted.

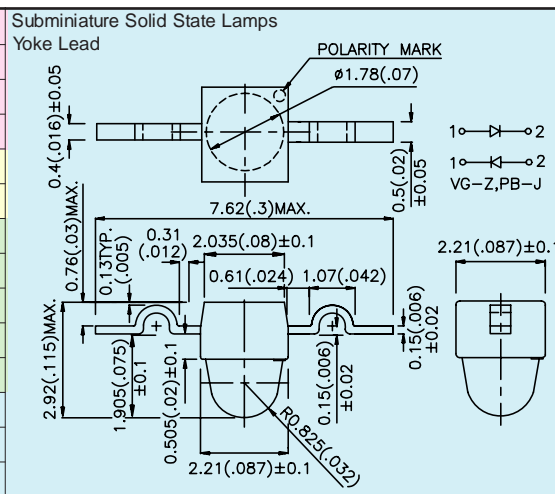


Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		

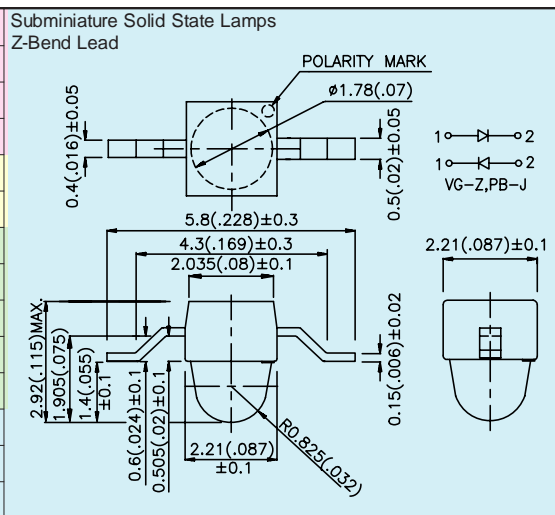
KM-27SURC-03	InGaAlP	628	water clear	650	1600	20°
KM-27SURCK-03	InGaAlP	635	water clear	480	1400	20°
KM-27SEC-03	InGaAlP	601	water clear	1200	2000	20°
KM-27SECK-03	InGaAlP	601	water clear	900	1800	20°
KM-27SYC-03	InGaAlP	588	water clear	900	1500	20°
KM-27SYCK-03	InGaAlP	590	water clear	650	1300	20°
KM-27MGC-03	InGaAlP	568	water clear	280	600	20°
KM-27CGCK-03	InGaAlP	570	water clear	110	400	20°
KM-27ZGC-03	AlInGaN	525	water clear	1800	3300	20°
KM-27VGC-A-03	InGaN	525	water clear	380	800	20°
KM-27VGC-Z-03	InGaN	535	water clear	3300	6400	20°
KM-27QBC-D-03	AlInGaN	470	water clear	180	500	20°
KM-27PBC-A-03	InGaN	470	water clear	110	250	20°
KM-27PBC-J03	InGaN	470	water clear	380	1000	20°



KM-27SURC08	InGaAlP	628	water clear	650	1600	20°
KM-27SURCK-08	InGaAlP	635	water clear	480	1400	20°
KM-27SEC-08	InGaAlP	601	water clear	1200	2000	20°
KM-27SECK-08	InGaAlP	601	water clear	900	1800	20°
KM-27SYC-08	InGaAlP	588	water clear	900	1500	20°
KM-27SYCK-08	InGaAlP	590	water clear	650	1300	20°
KM-27MGC-08	InGaAlP	568	water clear	280	600	20°
KM-27CGCK-08	InGaAlP	570	water clear	110	400	20°
KM-27ZGC-08	AlInGaN	525	water clear	1800	3300	20°
KM-27VGC-A-08	InGaN	525	water clear	380	800	20°
KM-27VGC-Z-08	InGaN	535	water clear	3300	6400	20°
KM-27QBC-D-08	AlInGaN	470	water clear	180	500	20°
KM-27PBC-A-08	InGaN	470	water clear	110	250	20°
KM-27PBC-J-08	InGaN	470	water clear	380	1000	20°



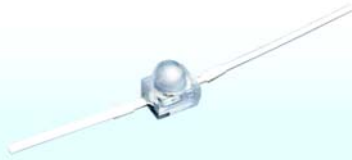
KM-27SURC-09	InGaAlP	628	water clear	650	1600	20°
KM-27SURCK-09	InGaAlP	635	water clear	480	1400	20°
KM-27SEC-09	InGaAlP	601	water clear	1200	2000	20°
KM-27SECK-09	InGaAlP	601	water clear	900	1800	20°
KM-27SYC-09	InGaAlP	588	water clear	900	1500	20°
KM-27SYCK-09	InGaAlP	590	water clear	650	1300	20°
KM-27MGC-09	InGaAlP	568	water clear	280	600	20°
KM-27CGCK-09	InGaAlP	570	water clear	110	400	20°
KM-27ZGC-09	AlInGaN	525	water clear	1800	3300	20°
KM-27VGC-A-09	InGaN	525	water clear	380	800	20°
KM-27VGC-Z-09	InGaN	535	water clear	3300	6400	20°
KM-27QBC-D-09	AlInGaN	470	water clear	180	500	20°
KM-27PBC-A-09	InGaN	470	water clear	110	250	20°
KM-27PBC-J-09	InGaN	470	water clear	380	1000	20°



NOTES:

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- Tolerance is ±0.25mm(0.01") unless otherwise noted.

KM2520xxx01

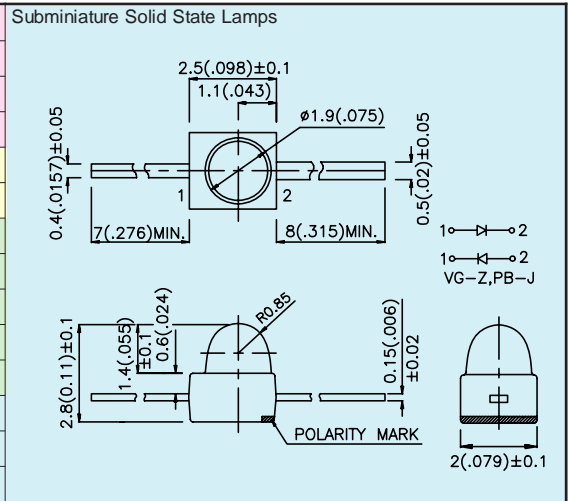


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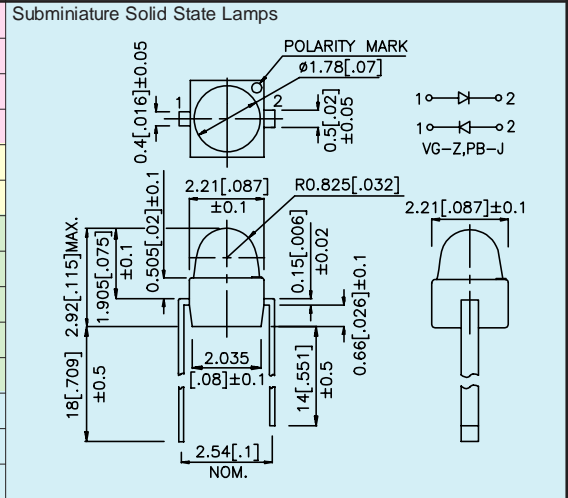


Part No.	Material	λ D (nm)	Lens Type	Iv (mcd) @20mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		

KM2520SURC01	InGaAlP	628	water clear	650	1600	20°
KM2520SURCK01	InGaAlP	635	water clear	480	1400	20°
KM2520SEC01	InGaAlP	601	water clear	1200	2000	20°
KM2520SECK01	InGaAlP	601	water clear	900	1800	20°
KM2520SYC01	InGaAlP	588	water clear	900	1500	20°
KM2520SYCK01	InGaAlP	590	water clear	650	1300	20°
KM2520MGC01	InGaAlP	568	water clear	280	600	20°
KM2520CGCK01	InGaAlP	570	water clear	110	400	20°
KM2520ZGC01	AlInGaN	525	water clear	1800	3300	20°
KM2520VGC-A01	InGaN	525	water clear	380	800	20°
KM2520VGC-Z01	InGaN	535	water clear	3300	6400	20°
KM2520QBC-D01	AlInGaN	470	water clear	180	500	20°
KM2520PBC-A01	InGaN	470	water clear	110	250	20°
KM2520PBC-J01	InGaN	470	water clear	380	1000	20°

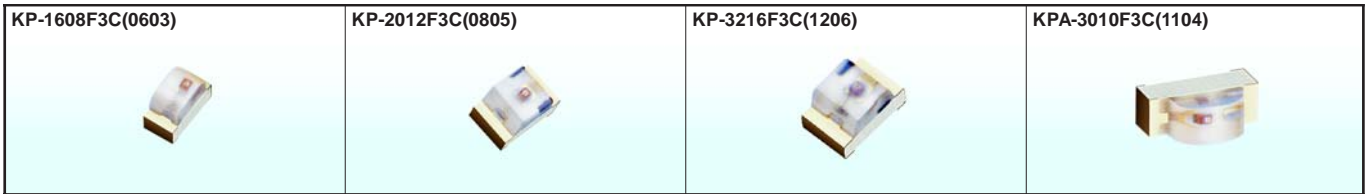


KM-27SURC-10	InGaAlP	628	water clear	650	1600	20°
KM-27SURCK-10	InGaAlP	635	water clear	480	1400	20°
KM-27SEC-10	InGaAlP	601	water clear	1200	2000	20°
KM-27SECK-10	InGaAlP	601	water clear	900	1800	20°
KM-27SYC-10	InGaAlP	588	water clear	900	1500	20°
KM-27SYCK-10	InGaAlP	590	water clear	650	1300	20°
KM-27MGC-10	InGaAlP	568	water clear	280	600	20°
KM-27CGCK-10	InGaAlP	570	water clear	110	400	20°
KM-27ZGC-10	AlInGaN	525	water clear	1800	3300	20°
KM-27VGC-A-10	InGaN	525	water clear	380	800	20°
KM-27VGC-Z-10	InGaN	535	water clear	3300	6400	20°
KM-27QBC-D-10	AlInGaN	470	water clear	180	500	20°
KM-27PBC-A-10	InGaN	470	water clear	110	250	20°
KM-27PBC-J-10	InGaN	470	water clear	380	1000	20°



NOTES:

- All dimensions are in millimeters(inches).
- Tolerance is ±0.25mm(0.01") unless otherwise noted.



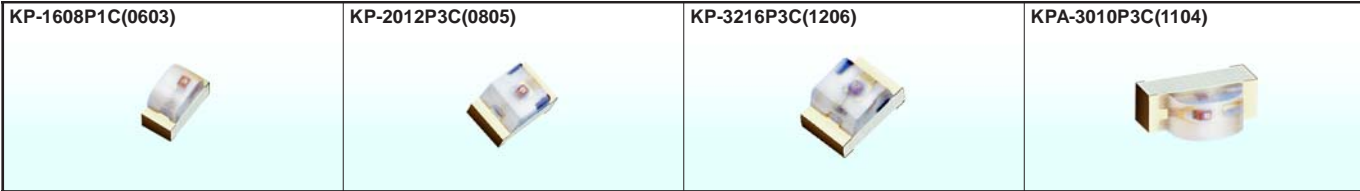
Part No.	Material	λ P (nm)	Lens Type	Po (mW/sr) @20mA		Viewing Angle 2 θ 1/2	Dimension
				Min.	Typ.		
KP-1608F3C	GaAs	940	water clear	0.4	1.2	120°	1.6mm x 0.8mm x 1.1mm (0603) Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KP-1608SF4C	GaAlAs	880	water clear	0.4	1	120°	
KP-2012F3C	GaAs	940	water clear	0.4	1.2	120°	2.0mm x 1.25mm x 1.1mm (0805) Units : mm(inch) Tolerance : $\pm 0.1(0.004)$
KP-2012SF4C	GaAlAs	880	water clear	0.4	1	120°	
KP-3216F3C	GaAs	940	water clear	0.4	1.2	120°	3.2mm x 1.6mm x 1.1mm (1206) Units : mm(inch) Tolerance : $\pm 0.2(0.008)$
KP-3216SF4C	GaAlAs	880	water clear	0.4	1	120°	
KPA-3010F3C	GaAs	940	water clear	0.4	1.2	120°	3.0mm x 1.0mm x 2mm (1104 Right Angle) Units : mm(inch) Tolerance : $\pm 0.15(0.006)$
KPA-3010SF4C	GaAlAs	880	water clear	0.4	1	120°	

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



Part No.	Material	λ P (nm)	Lens Type	Po (mW/sr) @20mA *50mA		Viewing Angle 2θ1/2	Dimension
				Min.	Typ.		
KPL-3015F3C	GaAs	940	water clear	0.4	1.2	70°	<p>3.0mm x 1.5mm x 1.4mm (1106)</p> <p>LED CHIP POLARITY MARK</p> <p>3[.118] 2[.079] 1.5[.059]</p> <p>0.5[.02] 1.4[.055]</p> <p>1.6[.063]</p> <p>1.5[.059]</p> <p>F3 1 —> 2</p> <p>SF4 1 —> 2</p> <p>Units : mm(inch) Tolerance : ±0.2(0.008)</p>
KPL-3015SF4C	GaAlAs	880	water clear	0.4	1	70°	
KA-3528AF3C	GaAs	940	water clear	1.6	3	120°	<p>3.5mm x 2.8mm</p> <p>3.5[.138]±0.2 3.2[.126]±0.2</p> <p>2.8[.11]±0.2</p> <p>1.2[.047] 2.2[.087] ø2.4[.094]</p> <p>POLARITY MARK</p> <p>0.15[.006] 0.2[.008] 0.8[.031] 1.9[.075]±0.2</p> <p>0.1[.004] NOM.</p> <p>0.8[.031]±0.3 0.8[.031]±0.3</p> <p>F3 1 —> 2</p> <p>SF4 1 —> 2</p> <p>Units : mm(inch) Tolerance : ±0.25(0.01)</p>
KA-3528ASF4C	GaAlAs	880	water clear	0.4	3	120°	
KM2520F3C03	GaAs	940	water clear	1.6	6	20°	<p>2mm Subminiature IR Emitter</p> <p>2.5(.098)±0.1 1.1(.043) ø1.9(.075)</p> <p>0.4(.0157) ±0.05 0.5(.02) ±0.05</p> <p>F3 1 —> 2</p> <p>SF4 1 —> 2</p> <p>1.4(.055) ±0.1 0.6(.024) R0.85 0.13MAX. 4.5(.177)±0.5 0.15(.006) ±0.02</p> <p>2.8(.11)±0.1</p> <p>2(.079) ±0.1</p> <p>Units : mm(inch) Tolerance : ±0.25(0.01)</p>
	KM2520SF4C03	GaAlAs	880	water clear	1.6	4	
				*10	*15	20°	
				*2.6	*8	20°	

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



PHOTOTRANSISTORS

1.6mm x 0.8mm x 1.1mm (0603)

KP-1608P1C WATER CLEAR LENS

2.0mm x 1.25mm x 1.1mm (0805)

KP-2012P3C WATER CLEAR LENS

3.2mm x 1.6mm x 1.1mm (1206)

KP-3216P3C WATER CLEAR LENS

3.0mm x 1.0mm x 2.0mm (1104)

KPA-3010P3C WATER CLEAR LENS

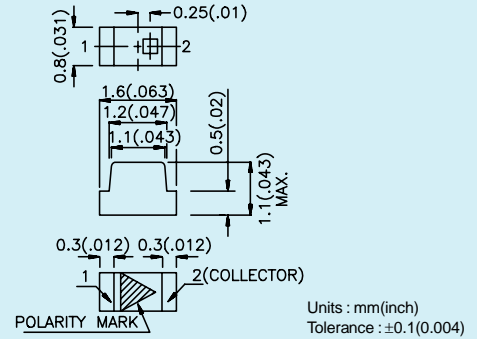
ABSOLUTE MAXIMUM RATING $T_A=25^{\circ}\text{C}$

Parameter	Max. Ratings
Collector-to-Emitter Voltage	30V
Emitter-to-Collector Voltage	5V
Power Dissipation at (or below) 25°C Free Air Temperature	100mW
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature Range	-40°C ~ +85°C

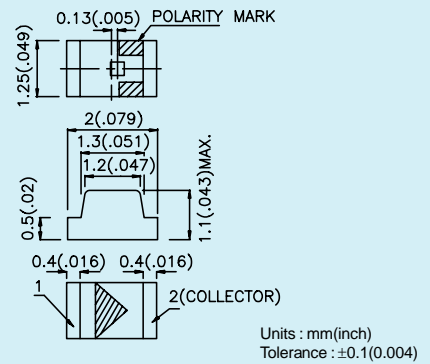
ELECTRICAL AND OPTICAL CHARACTERISTICS $T_A=25^{\circ}\text{C}$

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Condition
$V_{BR\ CE0}$	Collector-to-Emitter Breakdown Voltage	30	-	-	V	$I_C=100\mu\text{A}$ $E_e=0\text{mW}/\text{cm}^2$
$V_{BR\ EC0}$	Emitter-to-Collector Breakdown Voltage	5	-	-	V	$I_E=100\mu\text{A}$ $E_e=0\text{mW}/\text{cm}^2$
$V_{CE\ (SAT)}$	Collector-to-Emitter Saturation Voltage	-	-	0.8	V	$I_C=2\text{mA}$ $E_e=20\text{mW}/\text{cm}^2$
I_{CEO}	Collector Dark Current	-	-	100	nA	$V_{CE}=10\text{V}$ $E_e=0\text{mW}/\text{cm}^2$
T_R	Rise Time (10% to 90%)	-	15	-	μs	$V_{CE}=5\text{V}$ $I_C=1\text{mA}$ $R_L=1\text{K}\Omega$
T_F	Fall Time (90% to 10%)	-	15	-	μs	
$I_{(ON)}$	On State Collector Current	0.1	0.3	-	mA	$V_{CE}=5\text{V}$, $E_e=1\text{mW}/\text{cm}^2$, $\lambda=940\text{nm}$

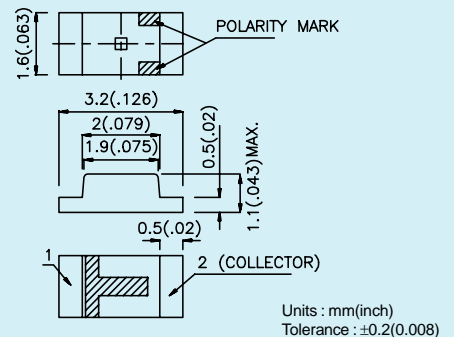
KP-1608P1C 1.6mm x 0.8mm x 1.1mm (0603)



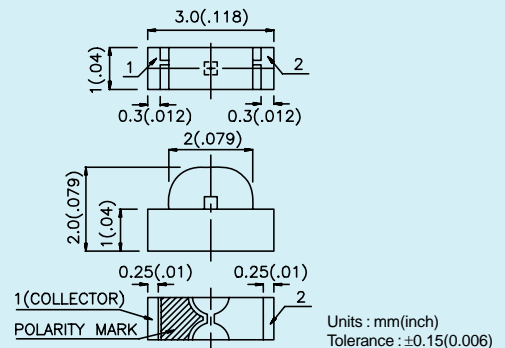
KP-2012P3C 2.0mm x 1.25mm x 1.1mm (0805)



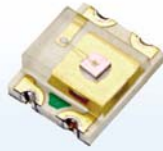
KP-3216P3C 3.2mm x 1.6mm x 1.1mm (1206)



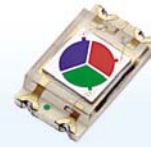
KPA-3010P3C 3.0mm x 1.0mm x 2.0mm (1104)



KPS-3227SP1C



KPS-5130PD7C



ELECTRICAL AND OPTICAL CHARACTERISTICS (T_A=25°C UNLESS OTHERWISE SPECIFIED)

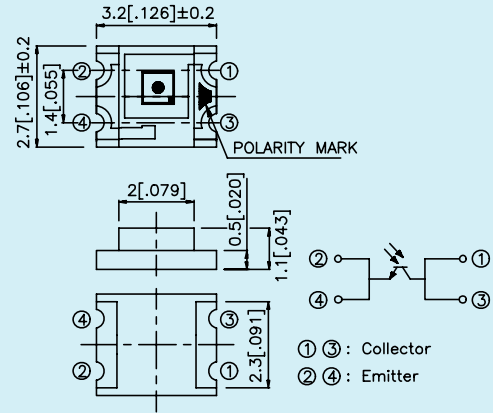
Parameter	Symbol	Typ.	Max.	Unit	Test Condition
Collector-to-Emitter Breakdown Voltage	V _{CEO}	60	-	V	I _{CEO} = 100μA
Emitter-to-Collector Breakdown Voltage	V _{ECO}	4	-	V	I _{ECO} = 100μA
Collector Dark Current	I _D	10	-	nA	V _{CE} = 5V Lux = 0
Angle Of half Sensitivity	2θ _{1/2}	120	-	°	-
Collector light Current	I _{L1}	20	-	μA	E _v = 20Lux ¹⁾
	I _{L2}	100	-	μA	E _v = 100Lux ¹⁾
Wavelength Of peak Sensitivity	λ _P	580	-	nm	-
Collector Emitter Saturation Voltage	V _{CE sat}	0.4	-	V	I _C = 10mA, I _B = 1mA

Note:

1. Illuminance by CIE standard light source (incandescent lamp).

AMBIENT LIGHT SENSOR

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



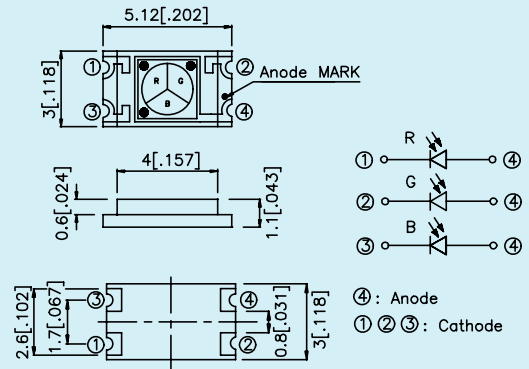
Units : mm(inch)
Tolerance : ±0.1(0.004)

ELECTRICAL AND OPTICAL CHARACTERISTICS (T_A=25°C UNLESS OTHERWISE SPECIFIED)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit	
Peak Sensitivity Wavelength	λ _P	Red	-	630	-	nm	
		Green	-	560	-		
		Blue	-	470	-		
Light Current	I _L	E _v = 100Lux V _R = 5V	Red	-	0.35	μA	
			Green	-	0.05		
			Blue	-	0.30		
Forward Voltage	V _F	I _F = 10mA, E _v = 0Lux	Red	0.5	-	1.3	V
			Green	0.5	-	1.3	
			Blue	0.5	-	1.3	
Reverse Dark Current	I _D	V _R = 5V	-	-	10	nA	

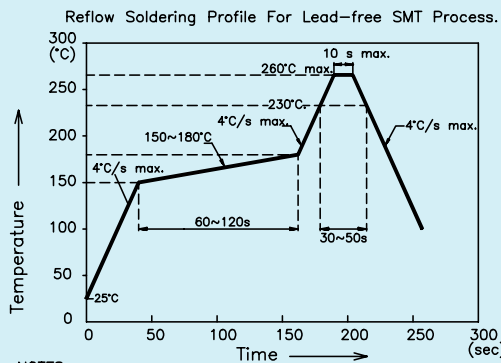
RGB COLOR SENSOR

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



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

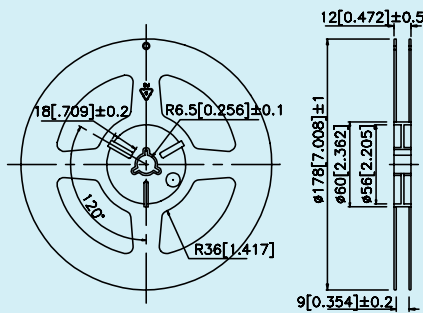
SMT Reflow Soldering Instructions



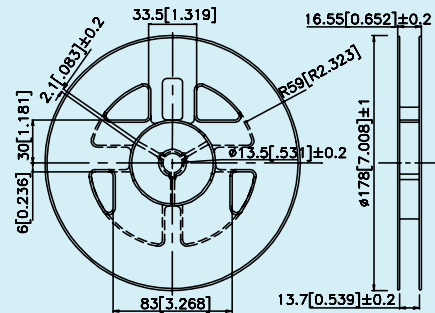
- NOTES:
 1. We recommend the reflow temperature 245°C(±5°C). The maximum soldering temperature should be limited to 260°C.
 2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
 3. Number of reflow process shall be 2 times or less.

PART NO.	REEL DIMENSION
KPHHS-1005, KP-1608, KPT-1608, KP-2012, KPT-2012, KPTC-2012, KPHCM-2012, KP-23-F, KP-3216, KPT-3216, KPC-3216, KPTR-3216, KPA-1606, KPA-2106, KPJA-2107, KPA-3010, KPA-3210, KPL-3015, KPTL-3216, KPTD-3216, KPD-3224, KPTB-1612, KPTB-1615, KPBA-3010, KPB-3025, KPBL-3025, KPBD-3224, KPHK-1608, KPTK-2012, KPKA-2810, KPK-3216, KPEKA-3224, KPKB-3025, KP KF-3030, KM-23-F, KPHBM-2012	7" (for 8mm width tape)
KCDX04, KCPDX04, KCPSX04, KCSX56.	13" (for 32mm width tape)
KPED-3528, KPED-3820, KPF-3236, KPK-3520, KPJKA-4008, KPKA-4110, KA-3022-4.5SF, KA-4040, KA-2735, KM2520xxx03, KM2520xxx08, KM2520xxx09, KM-27xxx-03, KM-27xxx-08, KM-27xxx-09,	7" (for 12mm width tape)
KAD1-9090, KCSX02, KCDX02, KCSX03, KCDX03, KCSX04.	13" (for 24mm width tape)
KCDX56.	13" (for 44mm width tape)

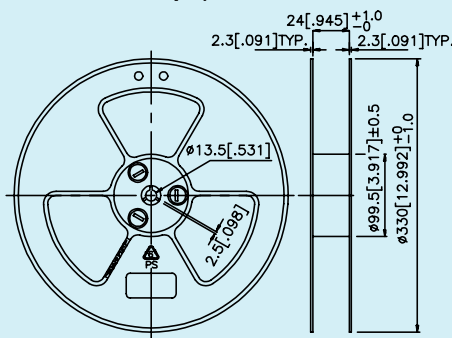
7" (for 8mm width tape)



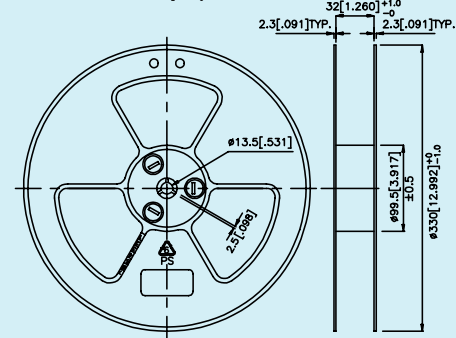
7" (for 12mm width tape)



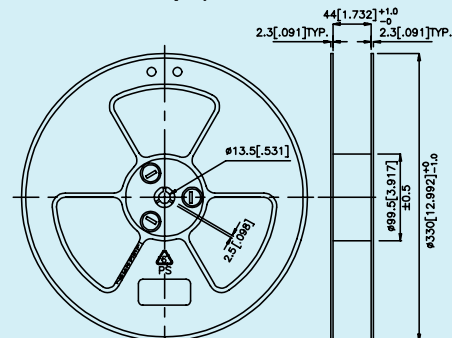
13" (for 24mm width tape)



13" (for 32mm width tape)

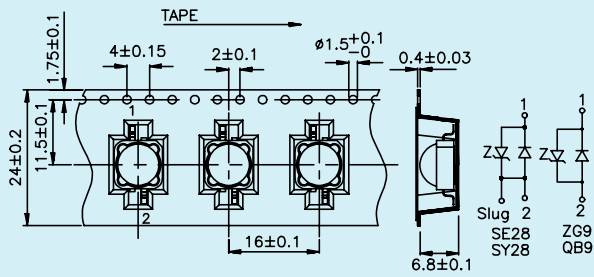


13" (for 44mm width tape)

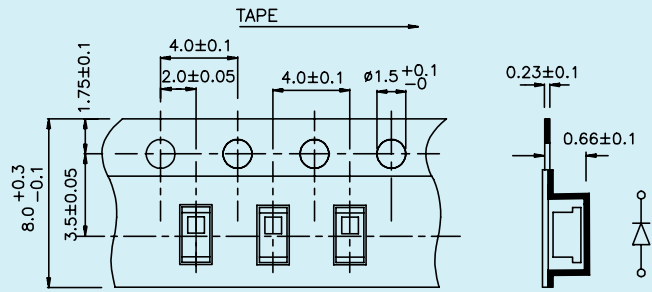


NOTE:
 1. All dimensions are in millimeters (inches).

KAD1-9090 PACKAGE: 500PCS / REEL

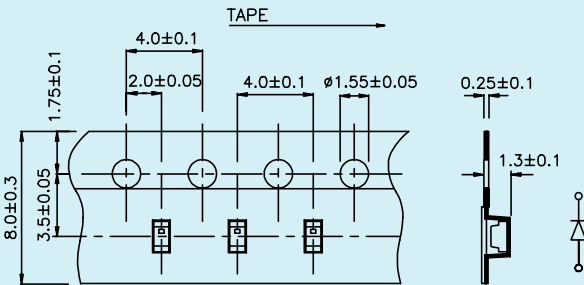


KPHHS-1005 PACKAGE: 2000PCS / REEL



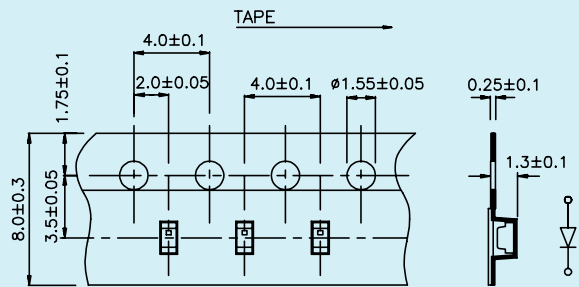
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KP-1608 PACKAGE: 2000PCS / REEL

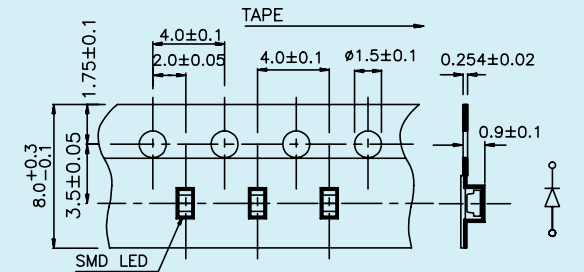


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KP-1608SF4C PACKAGE: 2000PCS / REEL

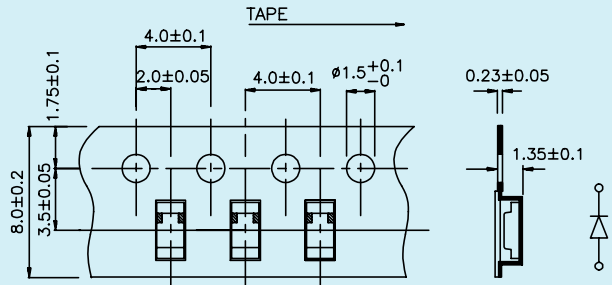


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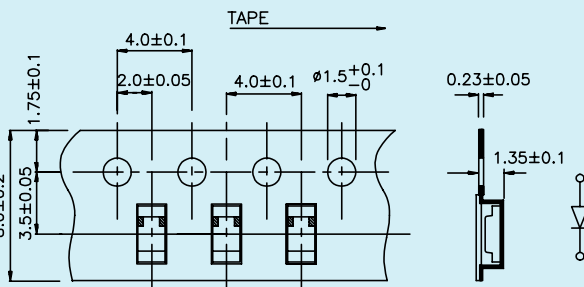
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KP-2012 PACKAGE: 2000PCS / REEL

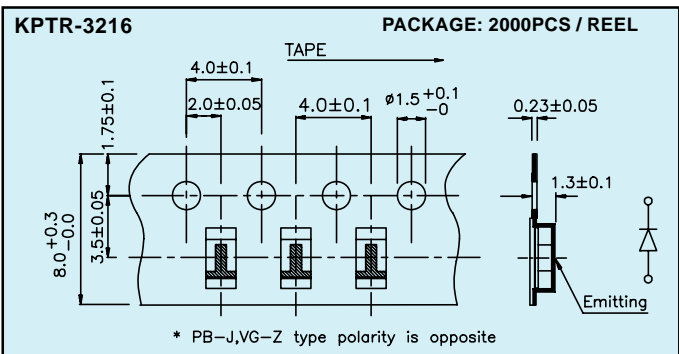
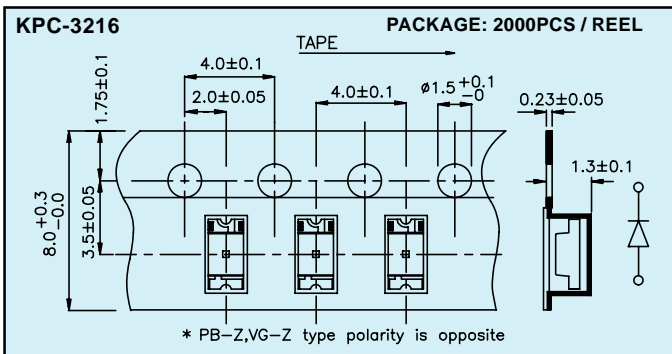
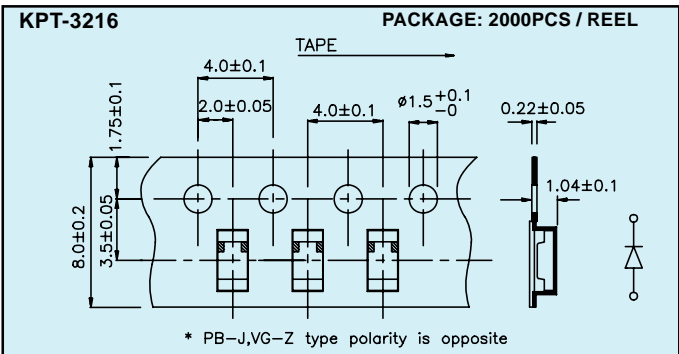
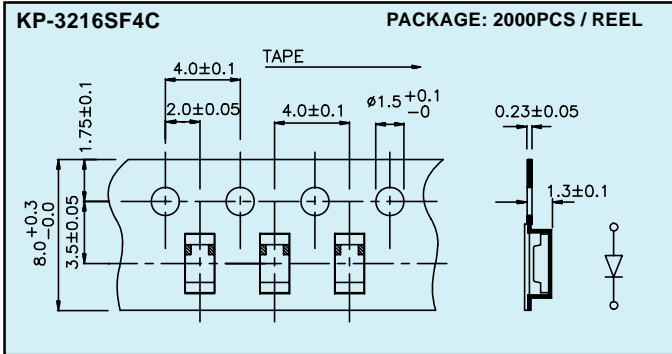
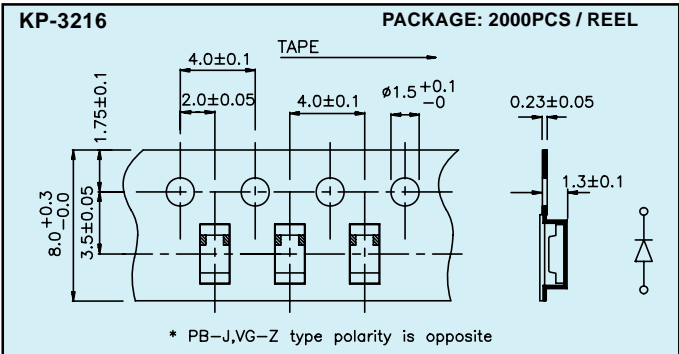
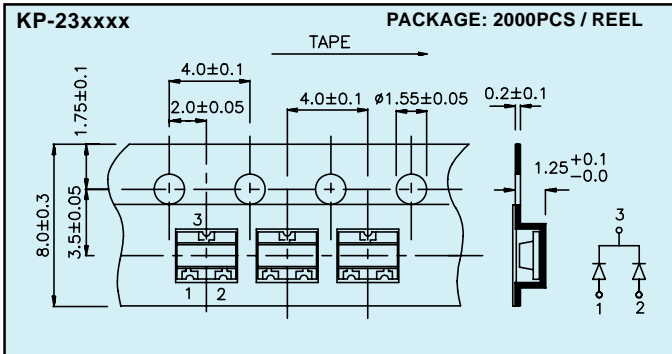
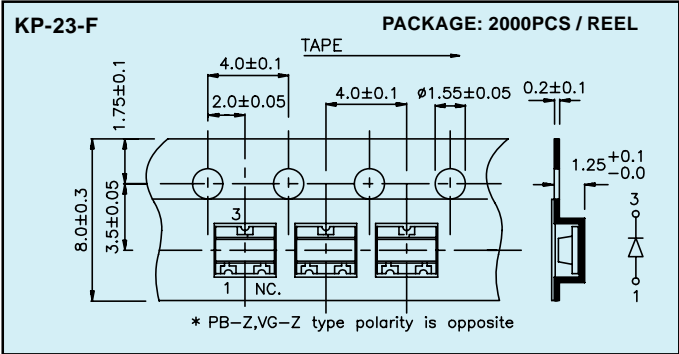
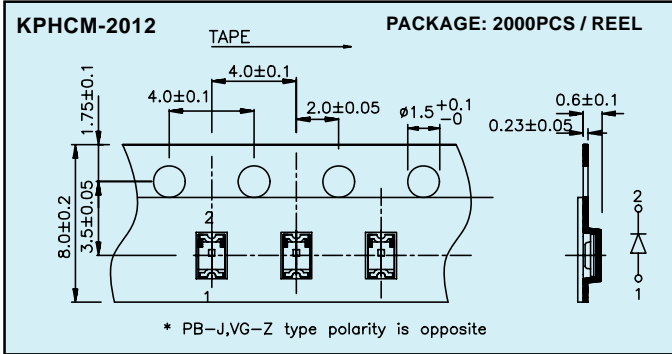
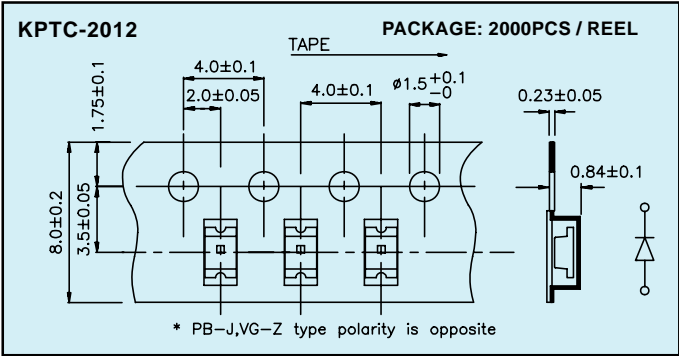
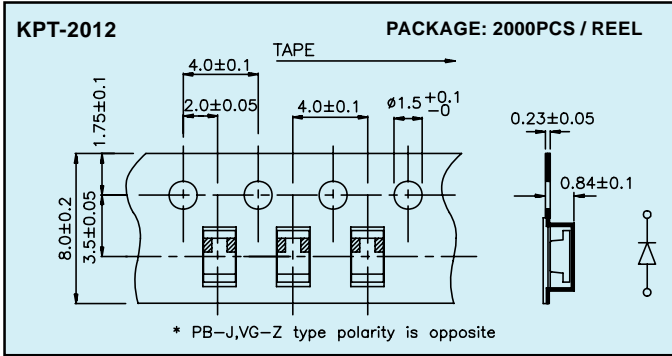


* PB-J,VG-Z type polarity is opposite

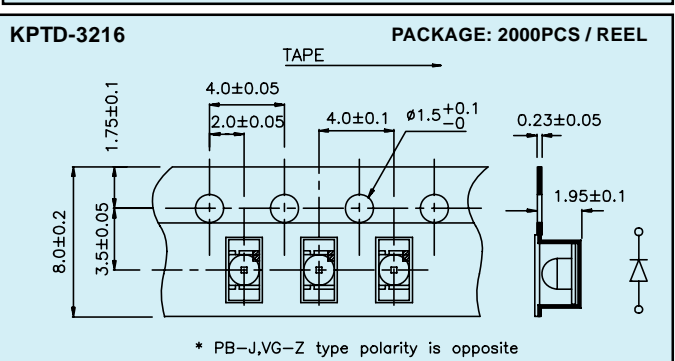
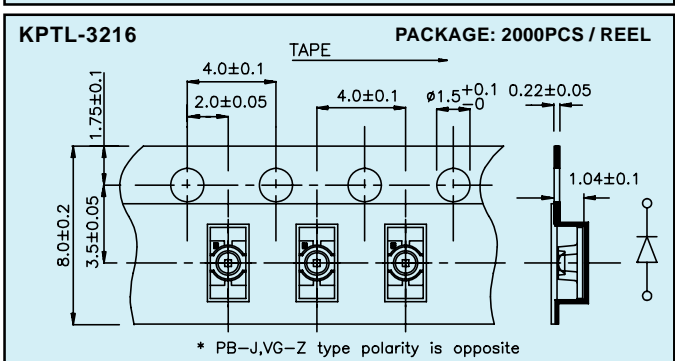
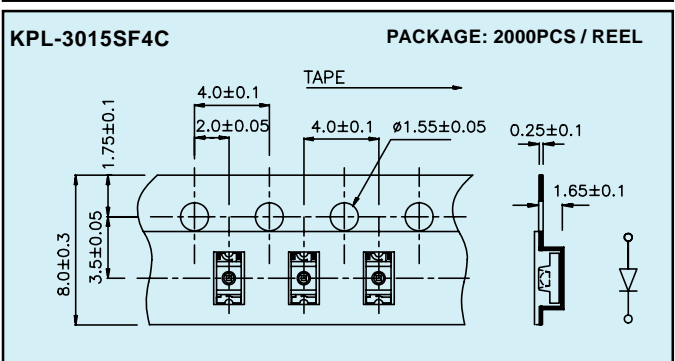
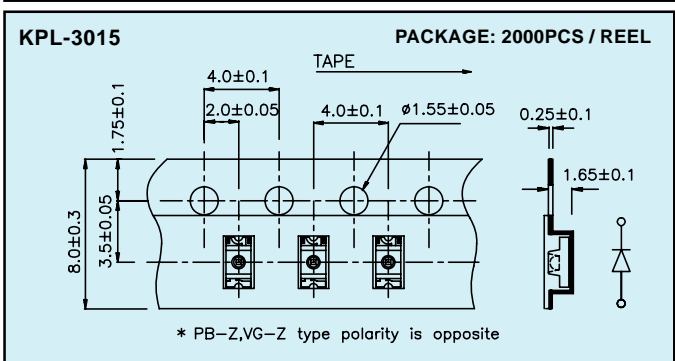
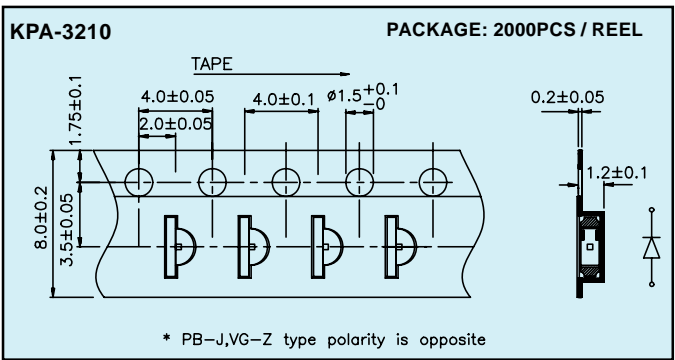
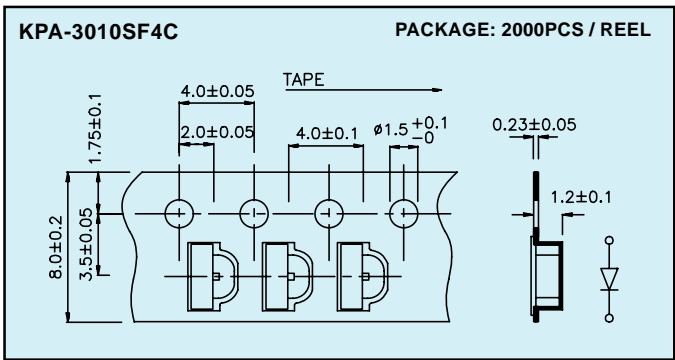
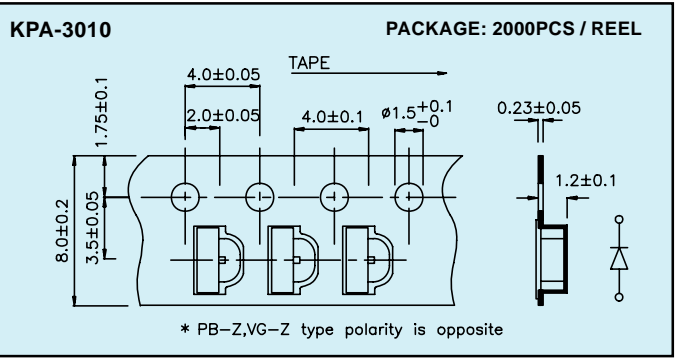
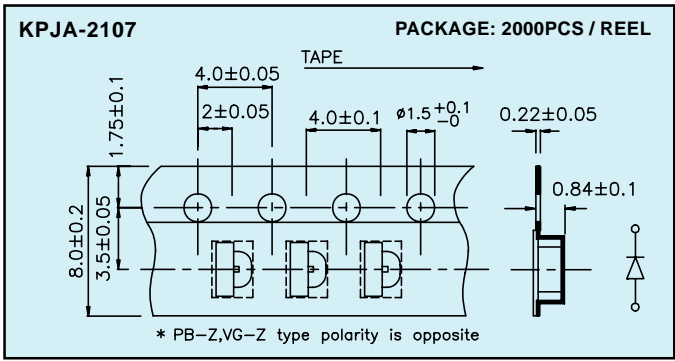
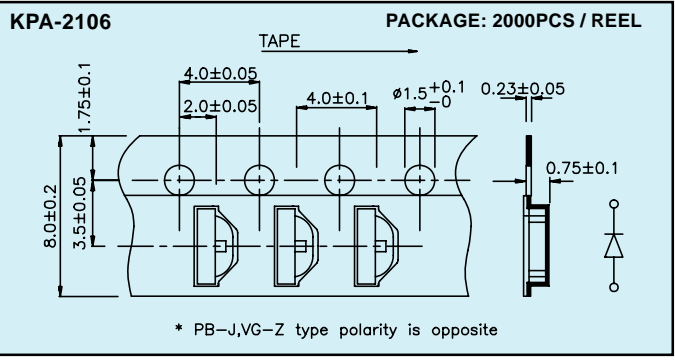
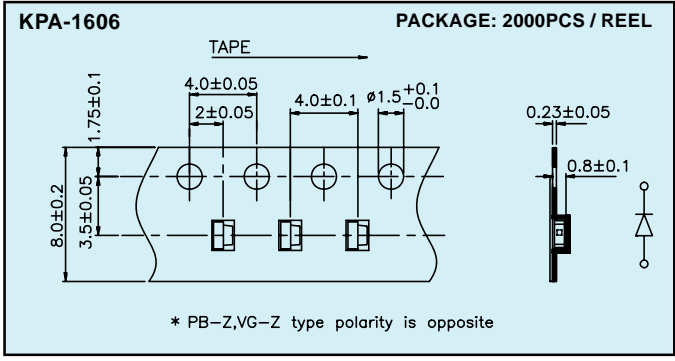
KP-2012SF4C PACKAGE: 2000PCS / REEL



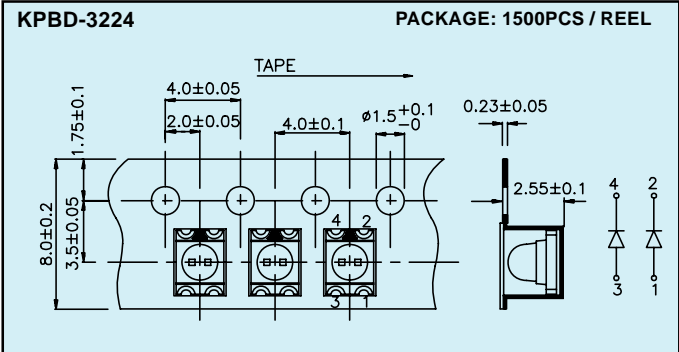
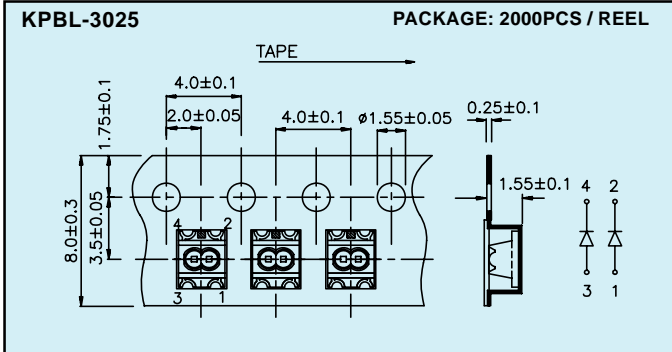
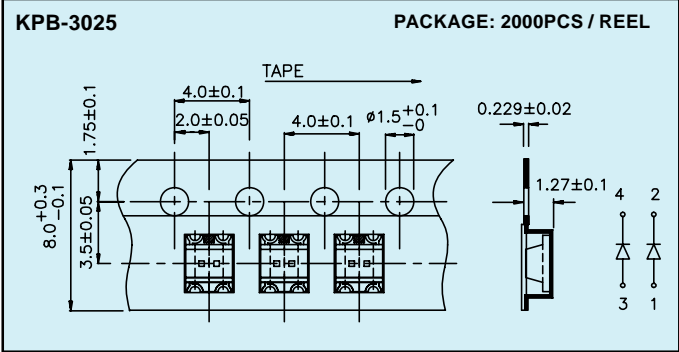
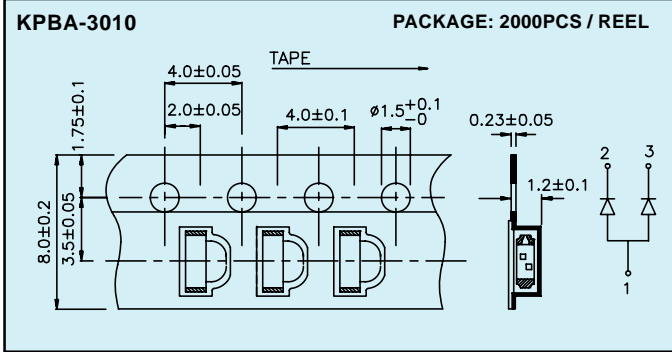
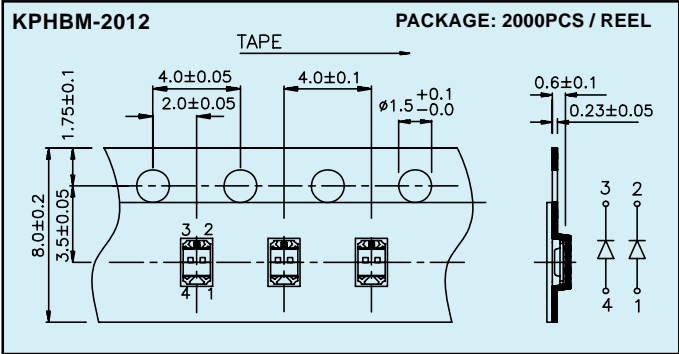
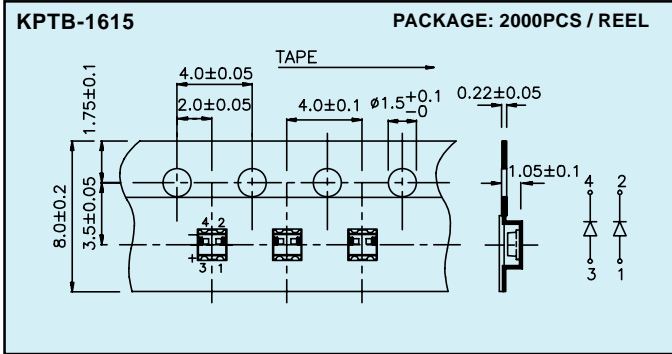
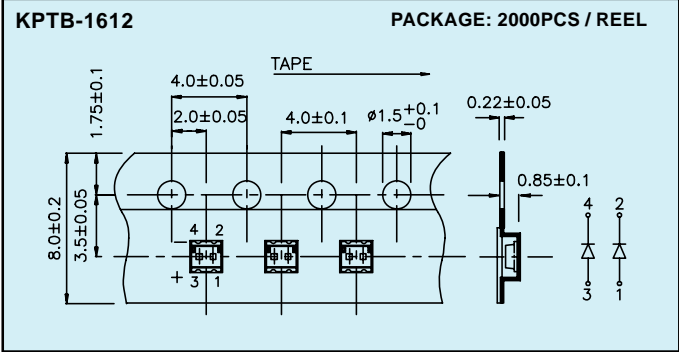
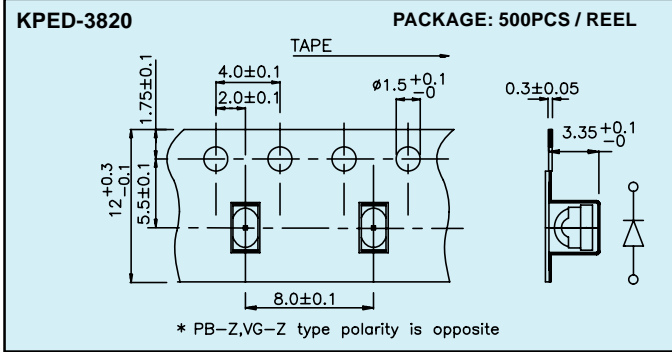
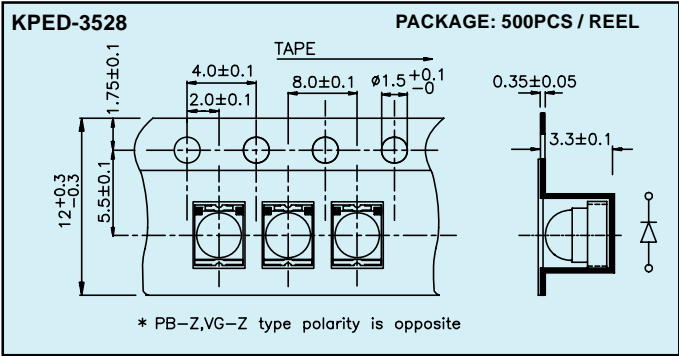
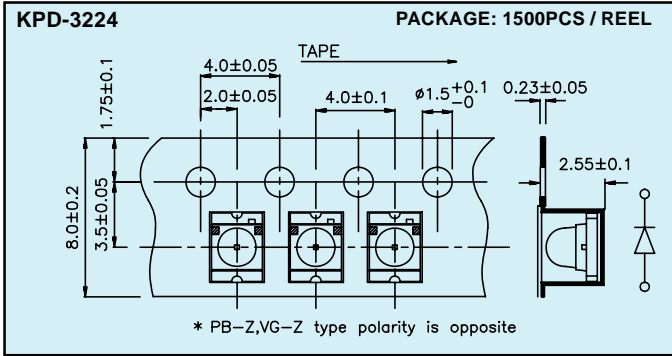
NOTE:
1. All dimensions are in millimeters.



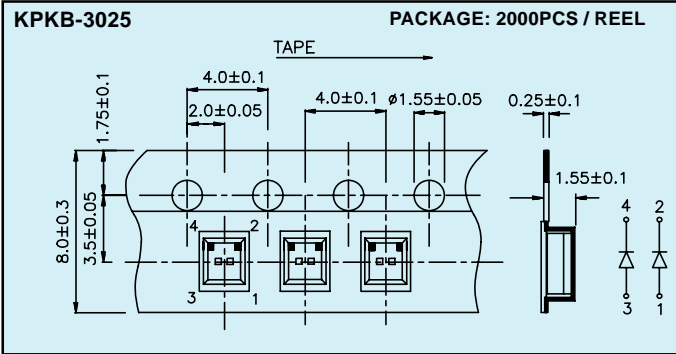
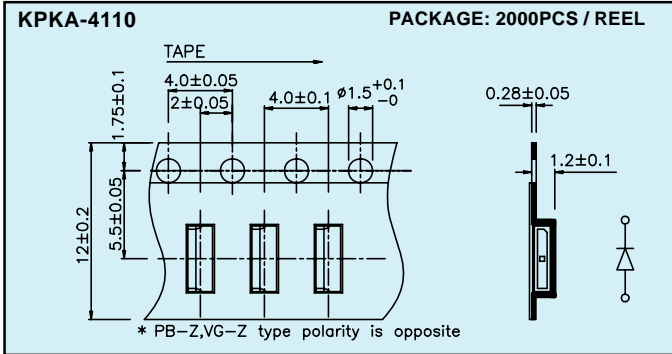
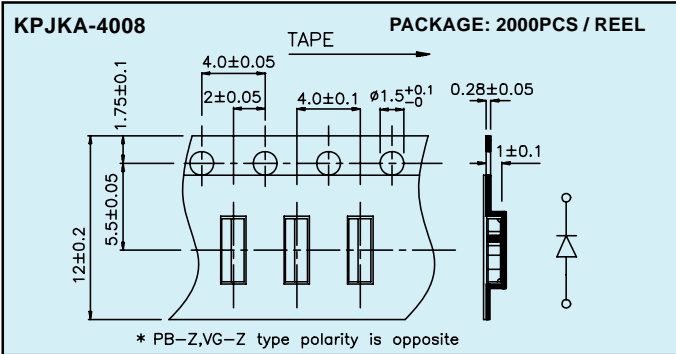
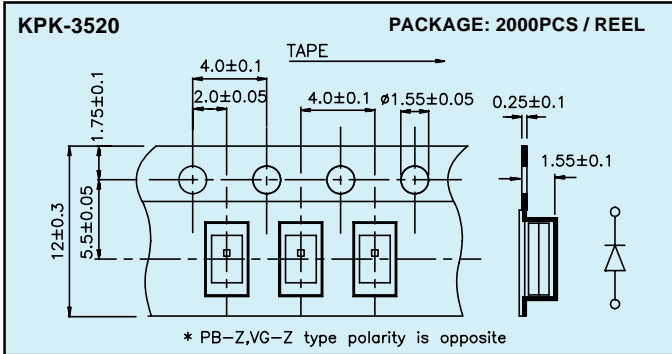
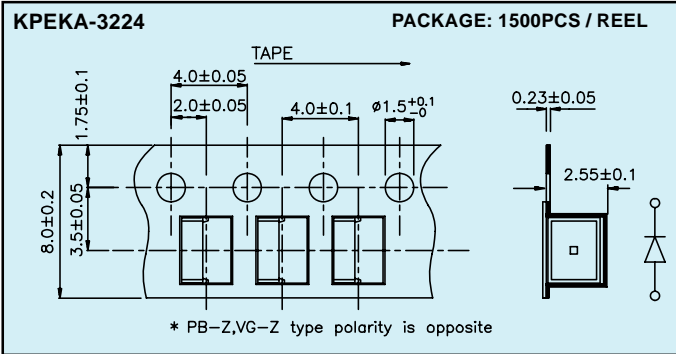
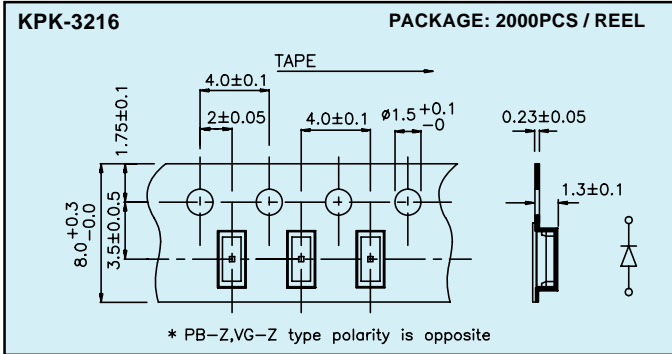
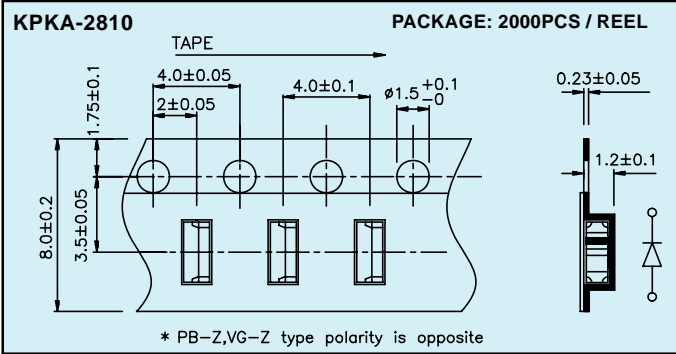
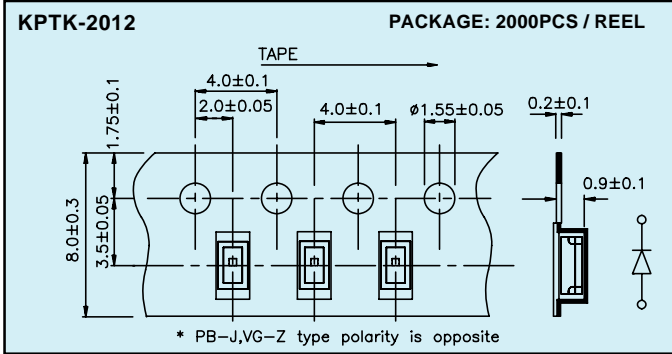
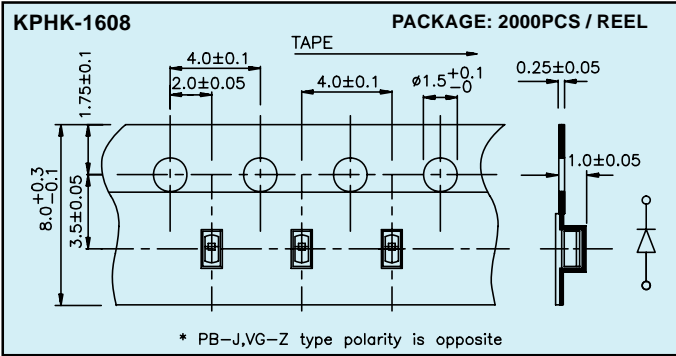
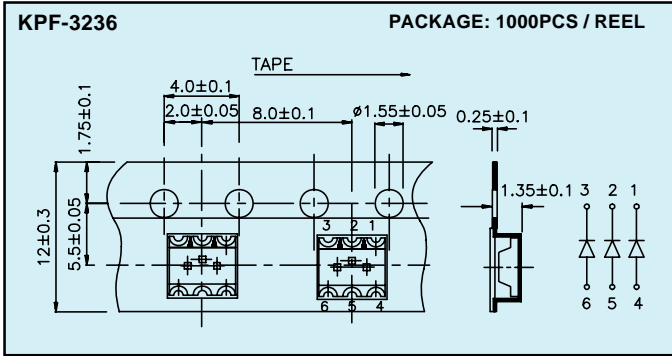
NOTE:
1. All dimensions are in millimeters.



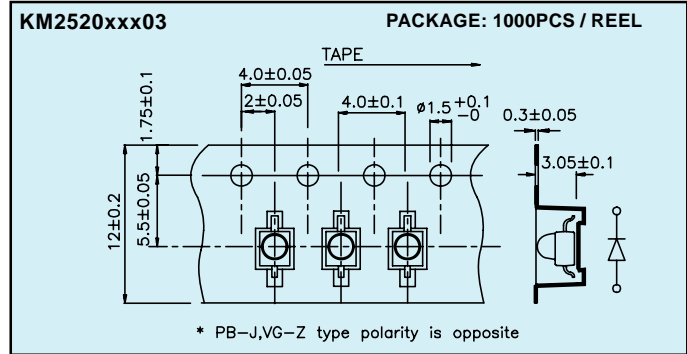
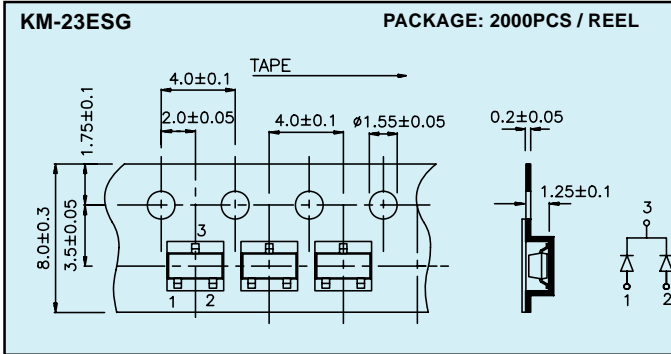
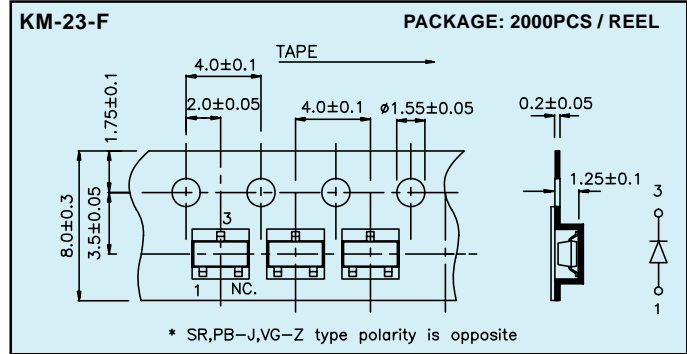
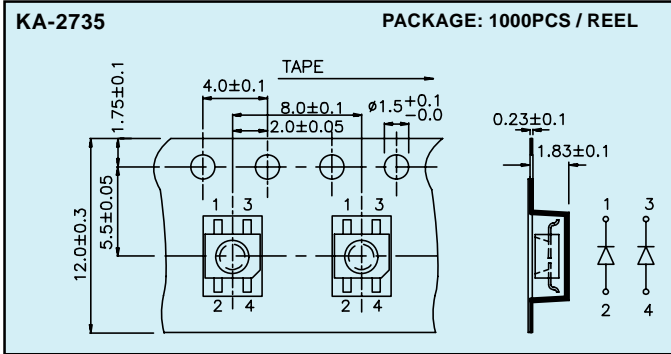
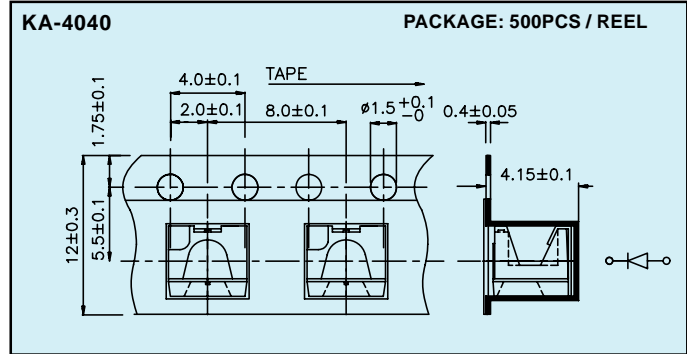
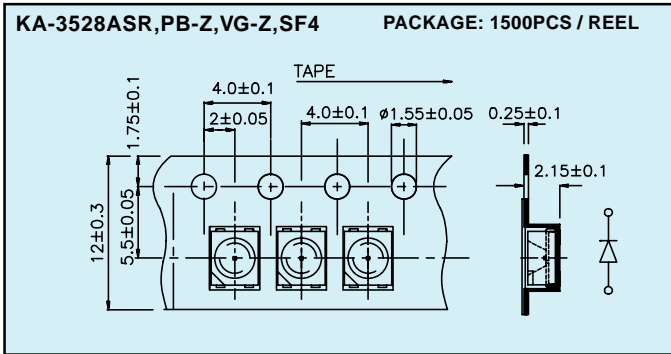
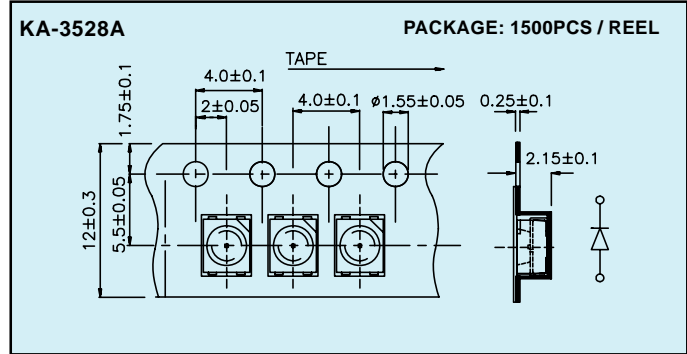
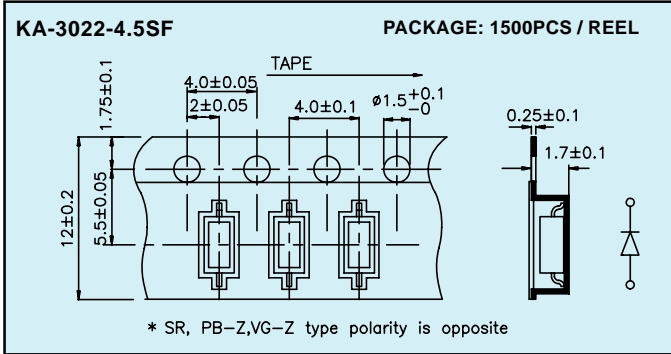
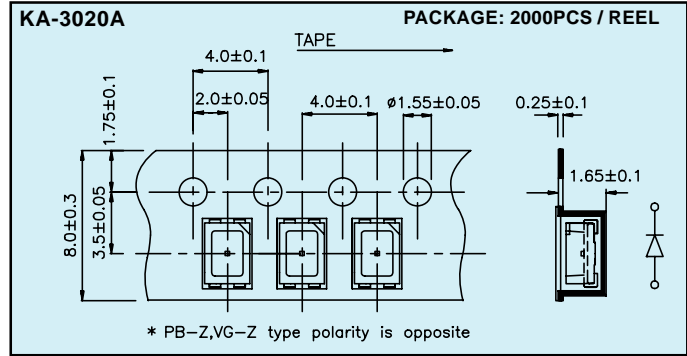
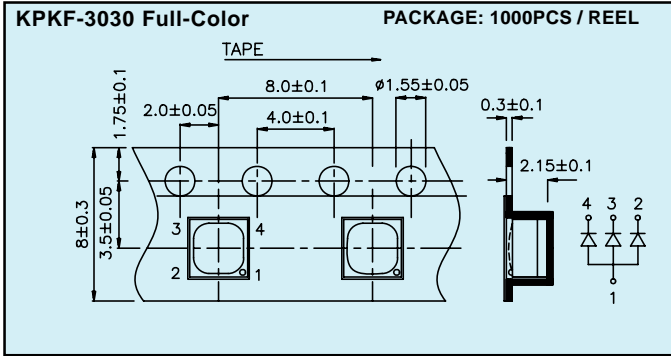
NOTE:
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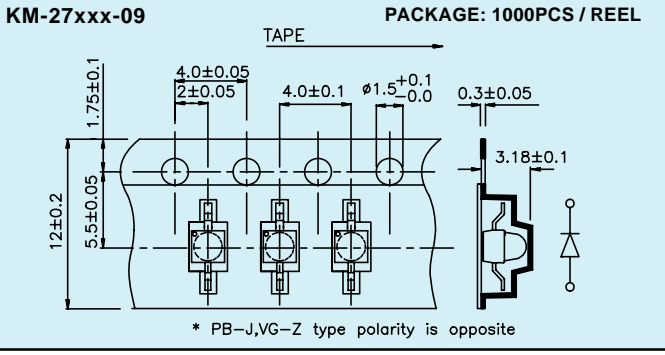
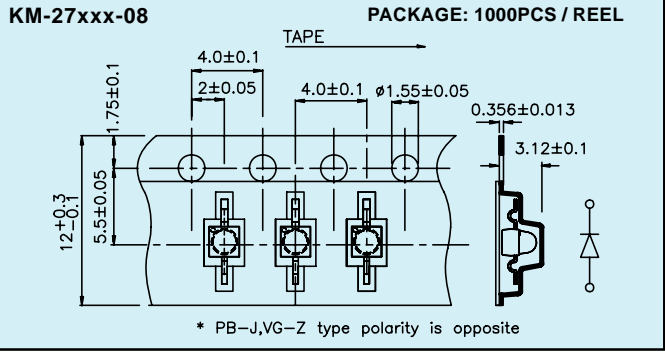
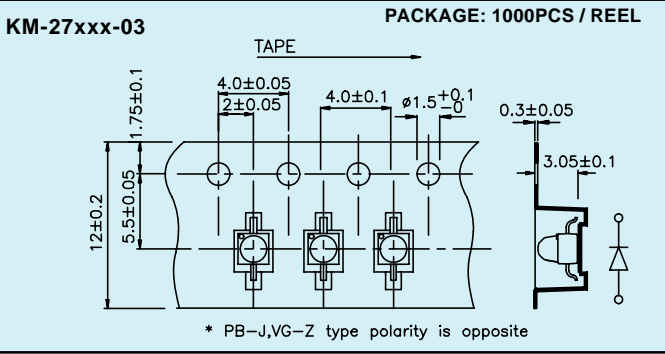
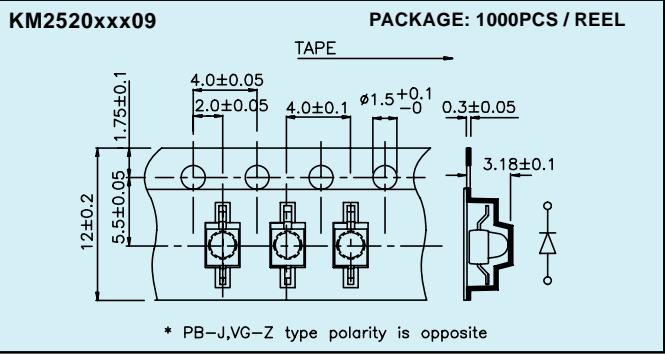
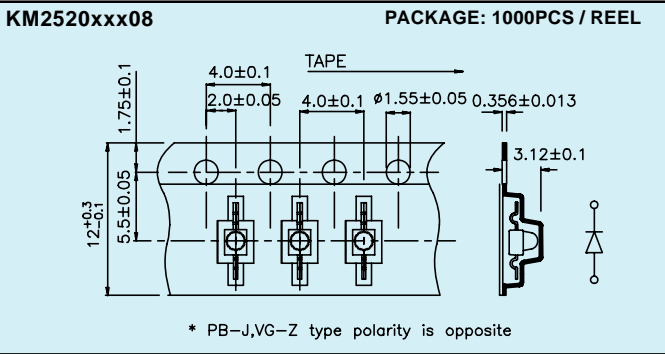
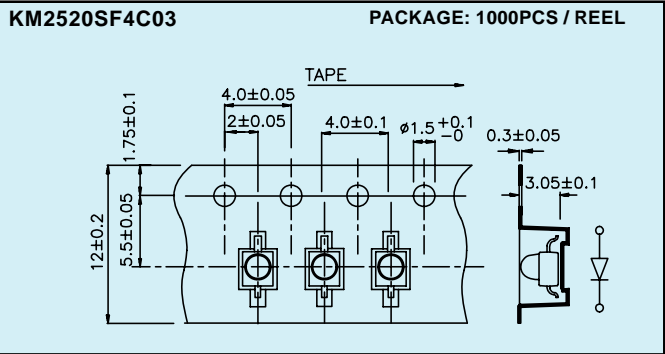
NOTE:
1. All dimensions are in millimeters.



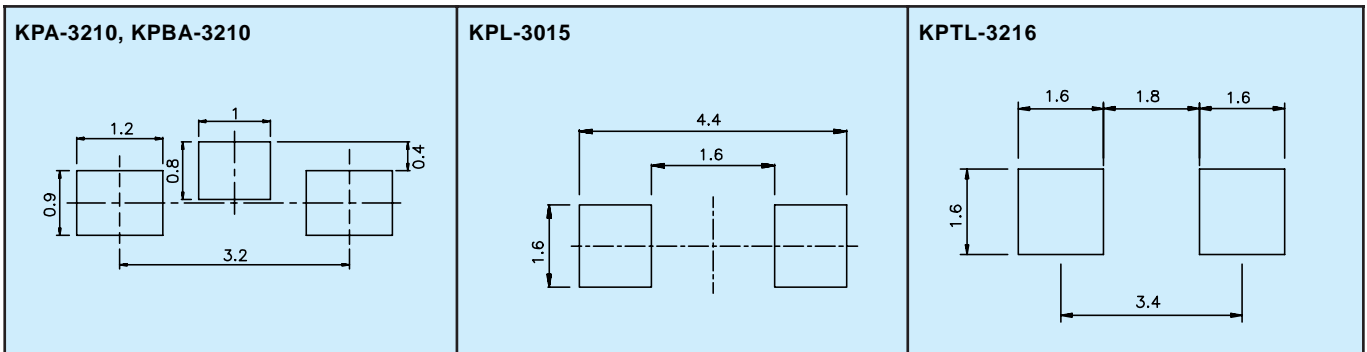
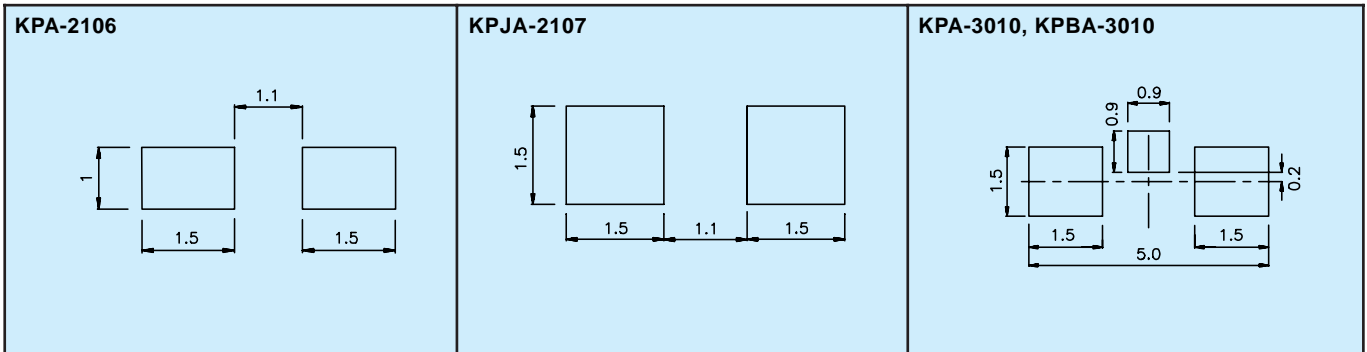
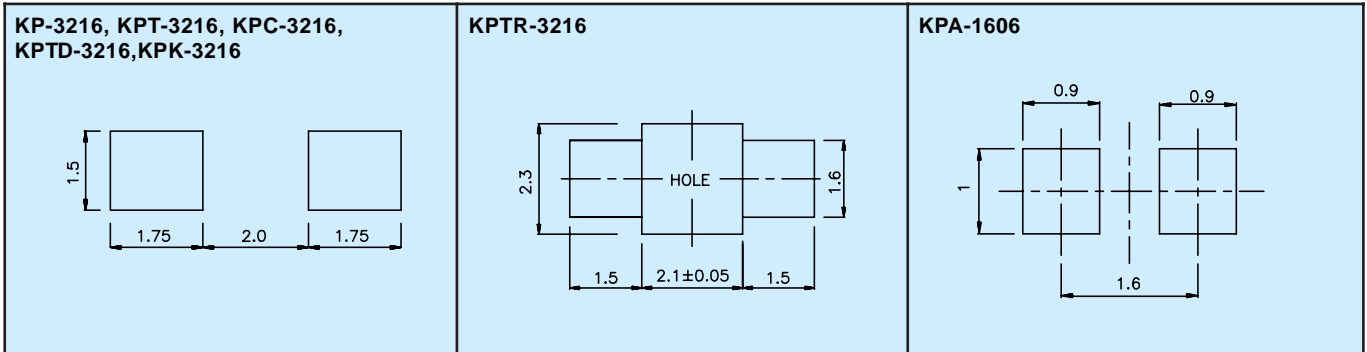
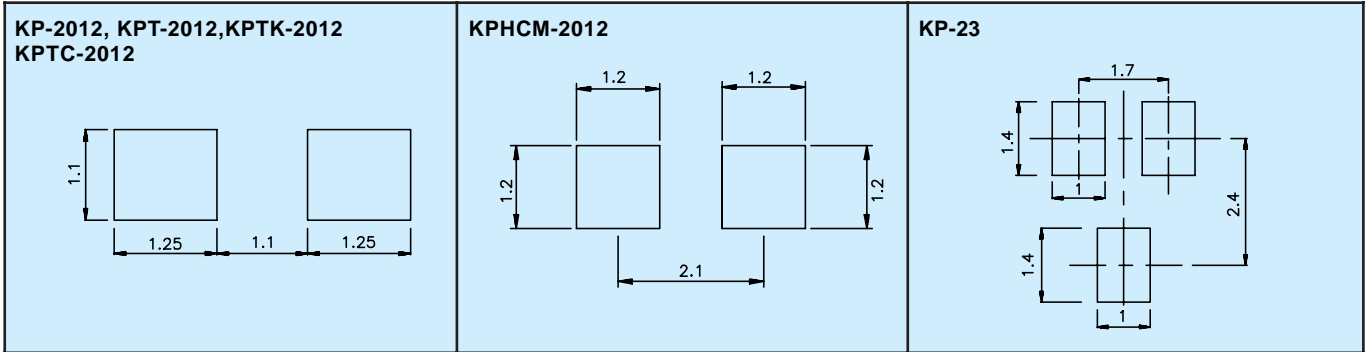
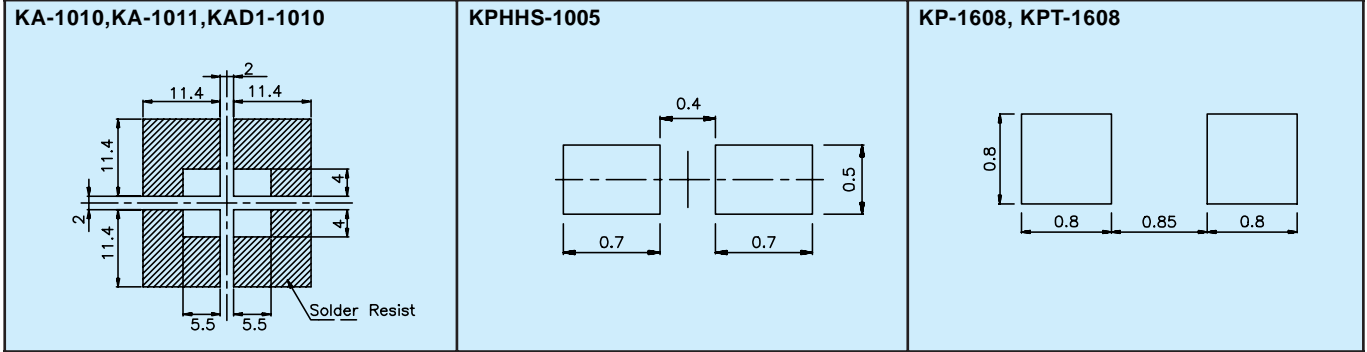
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NOTES:
 1. All dimensions are in millimeters.
 2. Tolerance is ± 0.1 mm unless otherwise noted.

<p>KPD-3224</p>	<p>KPED-3528</p>	<p>KPED-3820</p>
<p>KPTB-1612</p>	<p>KPTB-1615</p>	<p>KPHBM-2012</p>
<p>KPB-3025, KPBL-3025, KPKB-3025</p>	<p>KPBD-3224</p>	<p>KPF-3236</p>
<p>KPHK-1608</p>	<p>KPKA-2810</p>	<p>KPEKA-3224</p>
<p>KPK-3520</p>	<p>KPJKA-4008</p>	<p>KPKA-4110</p>

NOTES:

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2. Tolerance is $\pm 0.1\text{mm}$ unless otherwise noted.

<p>KPKF-3030</p>	<p>KA-3022-4.5SF</p>	<p>KA-4040</p>
<p>KA-2735</p>	<p>KM-23-F</p>	<p>KM2520xxx03,KM-27xxx-03</p>
<p>KM2520xxx08,KM-27xxx-08</p>	<p>KM2520xxx09,KM-27xxx-09</p>	

NOTES:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.1 mm unless otherwise noted.