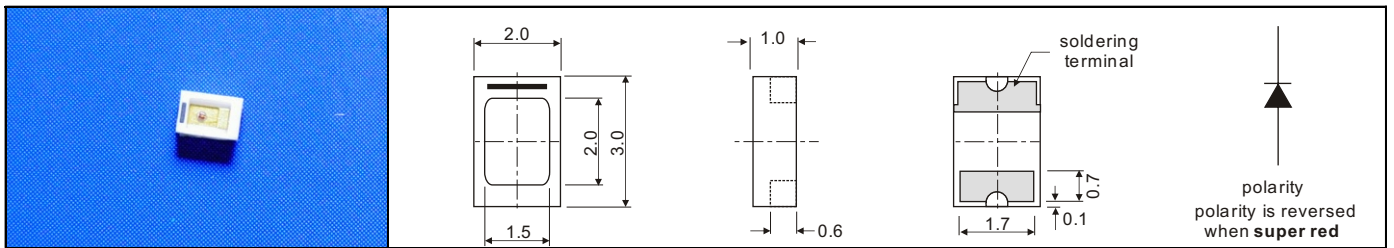


Surface Mount LEDs

1208 Type 3.0mm(L) X 2.0mm(W) X 1.0mm(H)

IF=20mA Ta=25°C

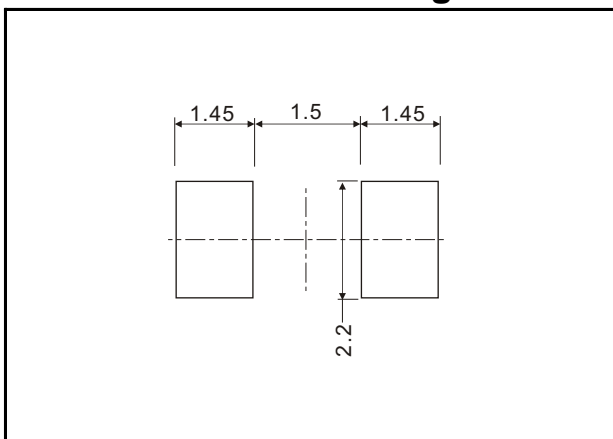
Device No	Color		Wavelength (nm)		VF	Brightness (mcd)		View
	Emitter	Lens	λ_p	λ_d	Typical (V)	IV1	IV2	Angle 2 θ 1/2



HCL-1402	hi-red	water clear	700	658	2.20	2.7	2.7	120.0
HCL-1403	yellow green	water clear	570	567	2.15	13.5	13.5	
HCL-1403DG	super yellow green	water clear	570	567	2.15	16.0	16.0	
HCL-1403AG	super pure green	water clear	523	525	3.50	150.0	150.0	
HCL-1404	yellow	water clear	589	585	2.10	7.5	7.5	
HCL-1404AY	super yellow	water clear	592	590	2.00	65.5	65.5	
HCL-1405	hi-eff red	water clear	625	618	2.05	13.5	13.5	
HCL-1405AO	super orange	water clear	620	615	2.00	65.0	65.0	
HCL-1406DR	super red	water clear	660	643	1.80	25.5	25.5	
HCL-1406CR	super red	water clear	660	643	1.80	37.5	37.5	
HCL-1406AR	super red	water clear	660	645	1.86	55.5	55.5	
HCL-1408AB	super blue	water clear	465	470	3.50	45.0	45.0	
HCL-1409AW	white	yellow clear	---	---	3.60	225.0	225.0	

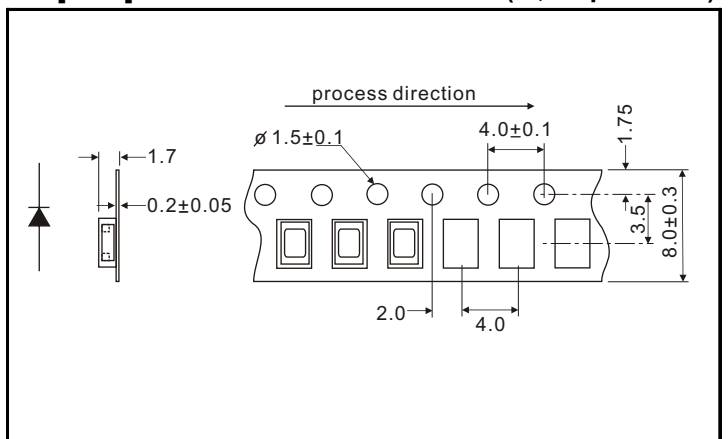
IV1:Labsphere LED-1100 IV2:EXELTRON 2001.

Recommended Soldering Pattern:



Tape Specifications:

(3,000pcs/Reel)

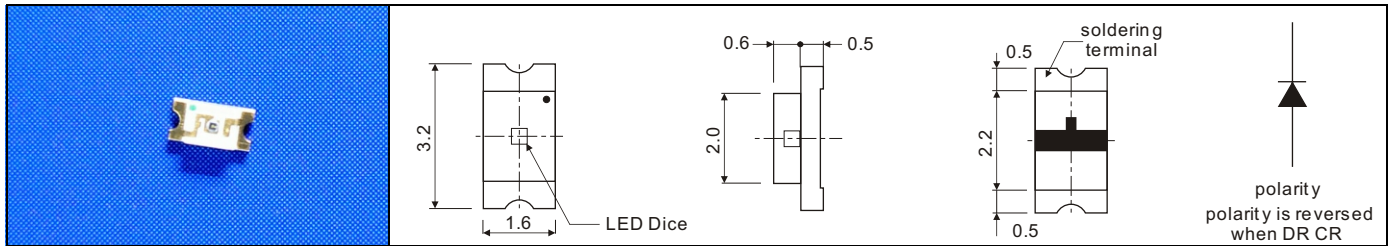


Surface Mount LEDs

1206 Type 3.2mm(L) X 1.6mm(W) X 1.1mm(H)

IF=20mA Ta=25°C

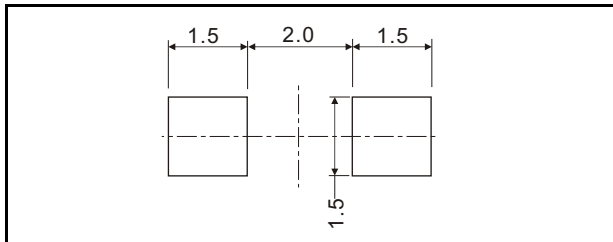
Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		IV1	IV2	



HCL-1502-4	hi-red	water clear	700	658	2.25	1.0	1.0	140.0
HCL-1503-4	yellow green	water clear	570	567	2.15	10.0	10.0	
HCL-1503DG-4	yellow green	water clear	570	567	2.15	13.0	13.0	
HCL-1503CG-4	yellow green	water clear	570	567	2.15	20.0	20.0	
HCL-1503BG-4	super yellow green	water clear	575	572	2.20	25.0	25.0	
HCL-1503PG-4	pure green	water clear	557	555	2.20	3.0	3.0	
HCL-1503AGC-4	super pure green	water clear	523	525	3.50	220.0	220.0	
HCL-1503B-4	super bluish green	water clear	502	505	3.50	130.0	130.0	
HCL-1504-4	yellow	water clear	589	585	2.10	6.0	6.0	
HCL-1504AY-4	super yellow	water clear	589	588	2.00	60.0	60.0	
HCL-1504FY-4	super yellow	water clear	589	588	2.00	100.0	100.0	
HCL-1505-4	hi-eff red	water clear	625	618	2.05	8.0	8.0	
HCL-1505AO-4	super orange	water clear	620	615	2.00	100.0	100.0	
HCL-1505FO-4	super orange	water clear	620	615	2.00	150.0	150.0	
HCL-1505AOR-4	super fresh red	water clear	635	626	2.00	100.0	100.0	
HCL-1505AORb-4	super fresh red	water clear	635	626	2.00	90.0	90.0	
HCL-1506DR-4	super red	water clear	660	643	1.80	17.0	17.0	
HCL-1506CR-4	super red	water clear	660	643	1.80	25.0	25.0	
HCL-1506BR-4	super red	water clear	655	638	2.10	25.0	25.0	
HCL-1506ARA-4	super red	water clear	660	645	1.86	45.0	45.0	
HCL-1507-4	amber	water clear	610	606	2.05	8.0	8.0	
HCL-1507FA-4	super amber	water clear	607	605	2.00	130	130	
*HCL-1508ABb-4	super blue	water clear	468	470	2.85	10.0	10.0	
HCL-1508ABC-4	super blue	water clear	468	470	3.50	48.0	48.0	
HCL-1509AWC-1	super white	yellow diffused	---	---	3.50	160.0	160.0	

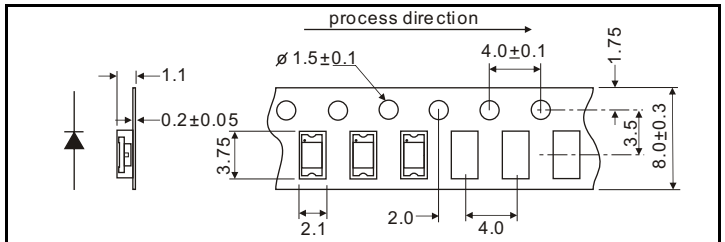
IV1:Labsphere LED-1100 IV2:EXELTRON 2001.

Recommended Soldering Pattern:



Tape Specifications:

(3,000pcs/Reel)

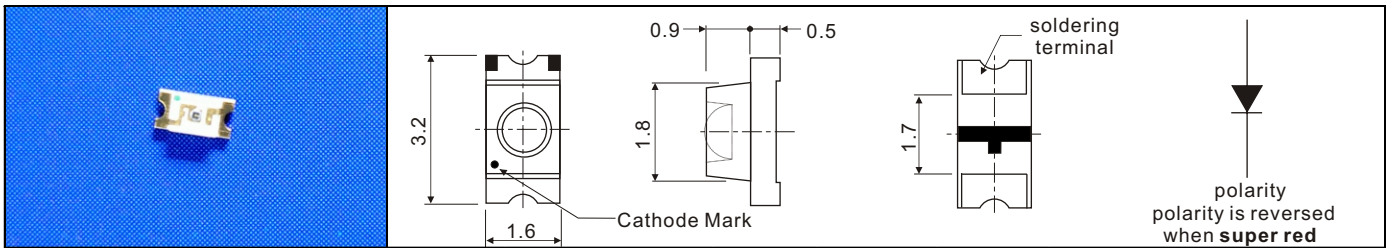


Surface Mount LEDs

1206 Type 3.0mm(L) X 1.5mm(W) X 1.5mm(H)

IF=20mA Ta=25°C

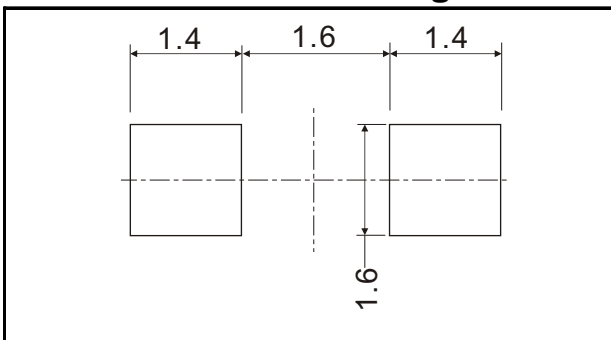
Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		IV1	IV2	



HCL-1513	yellow green	water clear	570	567	2.15	30.0	30.0	60
HCL-1513DG	yellow green	water clear	570	567	2.15	39.0	39.0	
HCL-1513BG	yellow green	water clear	575	572	2.20	70.0	70.0	
HCL-1513BA	cyan	water clear	502	505	3.50	150.0	150.0	
HCL-1513AGCA	super pure green	water clear	523	525	3.50	250.0	250.0	
HCL-1513AG	super pure green	water clear	523	525	3.50	309.0	309.0	
HCL-1514	yellow	water clear	589	585	2.10	18.0	18.0	
HCL-1514AY	super yellow	water clear	589	588	2.00	78.0	78.0	
HCL-1515	hi-eff red	water clear	625	618	2.05	18.0	18.0	
HCL-1515AORb	fresh red	water clear	635	625	2.00	150.0	150.0	
HCL-1515AO	super orange	water clear	620	615	2.00	150.0	150.0	
HCL-1516DR	super red	water clear	660	643	1.80	25.0	25.0	
HCL-1516CR	super red	water clear	660	643	1.80	50.0	50.0	
HCL-1516AR	super red	water clear	660	645	1.86	70.0	70.0	
HCL-1518ABC	super blue	water clear	468	470	3.50	80.0	80.0	
HCL-1518AB	super blue	water clear	465	470	3.50	105.0	105.0	

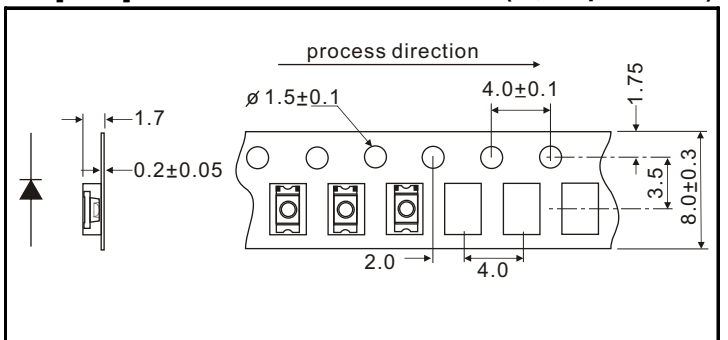
IV1:Labsphere LED-1100 IV2:EXELTRON 2001.

Recommended Soldering Pattern:



Tape Specifications:

(2,000pcs/Reel)

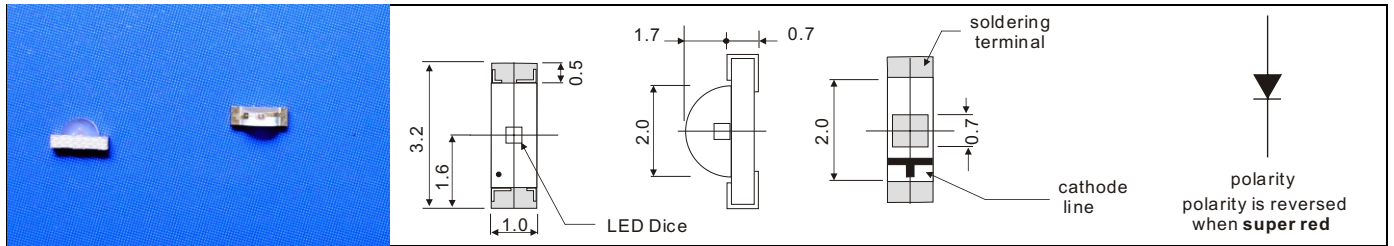


Surface Mount LEDs

Right Angle Type 3.2mm(L) X 1.0mm(W) X 1.5mm(H)

IF=20mA Ta=25°C

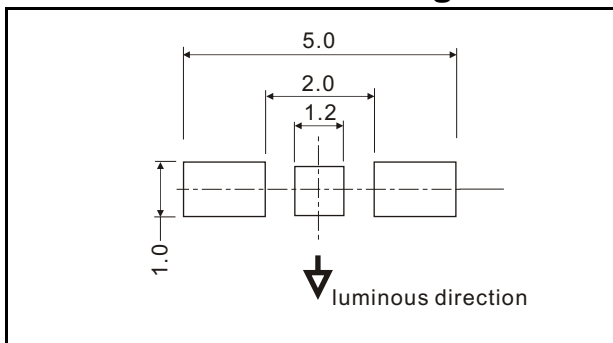
Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		IV1	IV2	



HCL-1532	hi-red	water clear	700	658	2.20	2.7	2.7	120
HCL-1533	yellow green	water clear	570	567	2.15	13.5	13.5	
HCL-1533BG1	super yellow green	water clear	575	572	2.20	60.0	60.0	
HCL-1533SG	standard green	water clear	567	564	2.15	7.0	7.0	
HCL-1533PG	pure green	water clear	557	560	2.25	3.9	3.9	
HCL-1534	yellow	water clear	589	585	2.10	7.5	7.5	
HCL-1534AYL	super yellow	water clear	592	595	2.00	60.0	60.0	
HCL-1535	hi-eff red	water clear	625	618	2.05	13.5	13.5	
HCL-1535AOR	super orange	water clear	635	626	2.00	60.0	60.0	
HCL-1536DR	super red	water clear	660	643	1.80	25.5	25.5	
HCL-1536CR	super red	water clear	660	643	1.80	37.5	37.5	
HCL-1537	amber	water clear	610	606	2.05	6.0	6.0	
HCL-1537AA	super amber	water clear	610	605	2.00	60.0	60.0	
HCL-1538ABC	super blue	water clear	468	470	3.50	60.0	60.0	

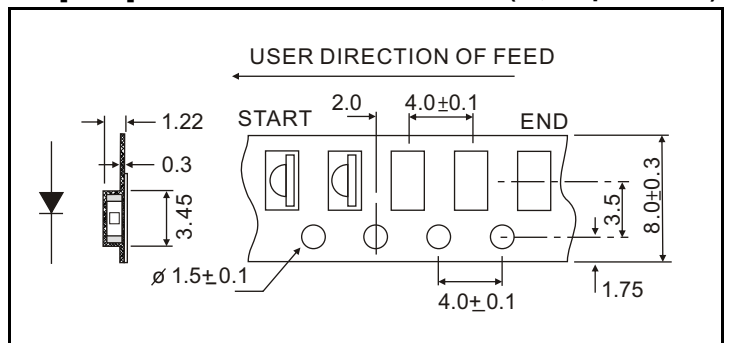
IV1:Labsphere LED-1100 IV2:EXELTRON 2001.

Recommended Soldering Pattern:



Tape Specifications:

(3,000pcs/Reel)

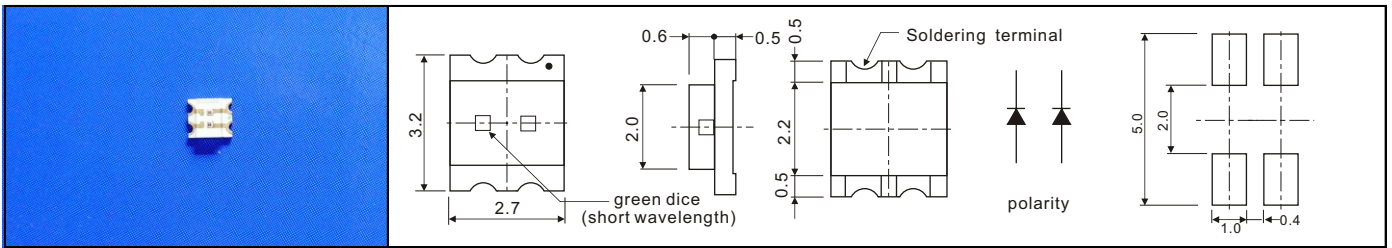


Surface Mount LEDs

1210 Type 3.2mm(L) X 2.7mm(W) X 1.1mm(H)

IF=20mA Ta=25°C

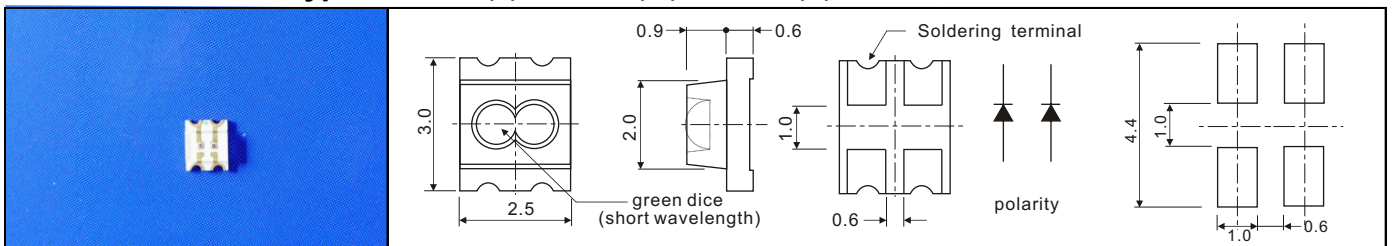
Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		IV1	IV2	



HCL-155D/G	orange	water	625	618	2.05	8.0	8.0	120
	yellow green	clear	570	567	2.15	9.5	9.5	
HCL-155AOR/BG	super fresh red	water	630	625	2.00	50.0	50.0	
	super yellow green	clear	570	570	2.20	30.0	30.0	
HCL-155Y/YG	yellow	water	589	585	2.10	6.5	6.5	
	yellow green	clear	570	567	2.15	9.5	9.5	
(*full color) HCL-155AOR AGC ABC	super fresh red	water	635	626	2.00	100.0	100.0	
	super green	clear	523	525	3.50	220.0	220.0	
	super blue	clear	468	470	3.50	48.0	48.0	

1210 Lens 1.8mm Type 3.2mm(L) X 2.5mm(W) X 1.5mm(H)

IF=20mA Ta=25°C

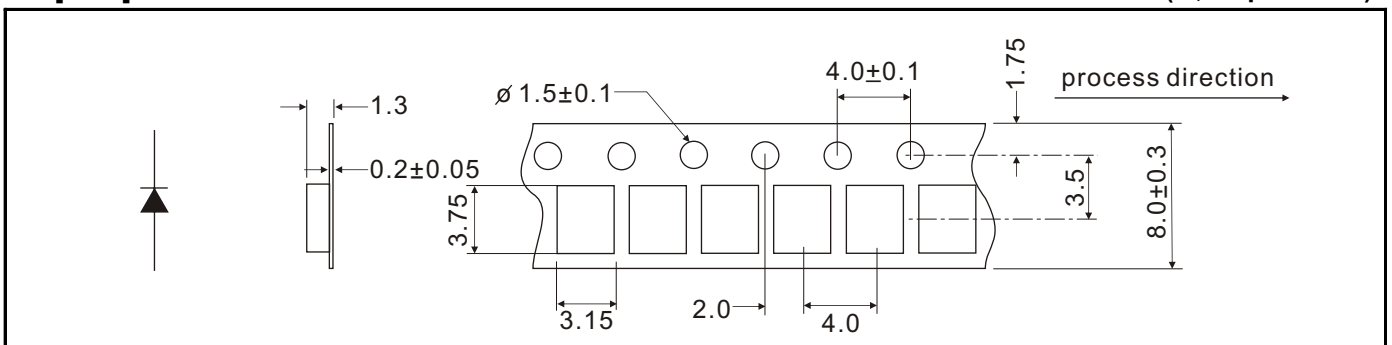


HCL-156UR/G	super red	water	660	643	1.80	45.0	45.0	20
	yellow green	clear	570	567	2.15	26.0	26.0	

IV1:Labsphere LED-1100 IV2:EXELTRON 2001.

Tape Specifications:

(3,000pcs/Reel)

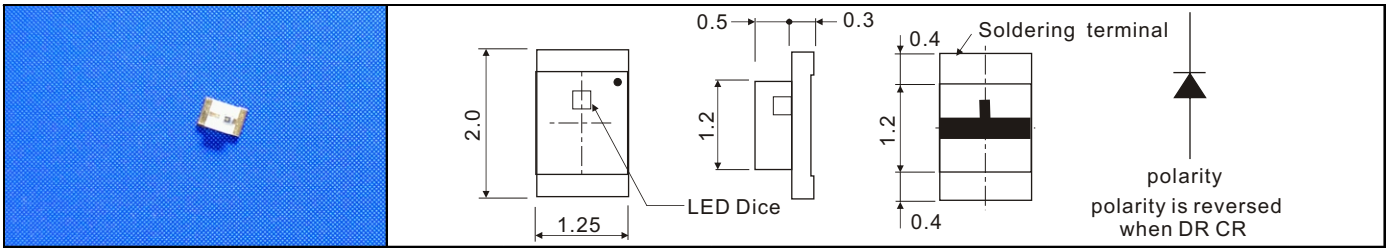


Surface Mount LEDs

0805 Type 2.0mm(L) X 1.25mm(W) X 0.8mm(H)

IF=20mA Ta=25°C

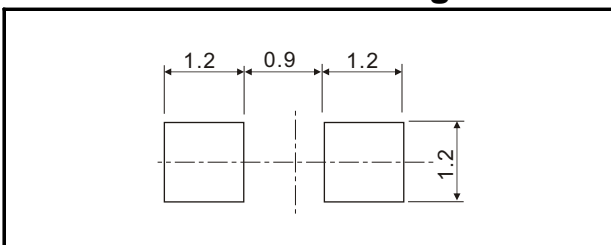
Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		IV1	IV2	



HCL-1702-4	hi-red	water clear	700	658	2.20	1.0	1.0	140
HCL-1703-4	yellow green	water clear	570	567	2.15	11.0	11.0	
HCL-1703DG-4	yellow green	water clear	570	567	2.15	13.0	13.0	
HCL-1703CG-4	yellow green	water clear	570	567	2.15	20.0	20.0	
HCL-1703BG-4	super yellow green	water clear	575	572	2.20	22.0	22.0	
HCL-1703PG-4	pure green	water clear	557	555	2.20	2.5	2.5	
HCL-1703AGC-4	super pure green	water clear	523	525	3.50	220.0	220.0	
HCL-1703B-4	super bluish green	water clear	502	505	3.50	160.0	160.0	
HCL-1704-4	yellow	water clear	589	585	2.10	6.0	6.0	
HCL-1704AY-4	super yellow	water clear	589	588	2.00	50.0	50.0	
HCL-1704FY-4	super yellow	water clear	589	588	2.00	100.0	100.0	
HCL-1705-4	hi-eff red	water clear	625	618	2.05	6.0	6.0	
HCL-1705AO-4	super orange	water clear	620	615	2.00	70.0	70.0	
HCL-1705FO-4	super orange	water clear	620	615	2.00	125.0	125.0	
HCL-1705AOR-4	super fresh red	water clear	635	626	2.00	60.0	60.0	
HCL-1705AORb-4	super fresh red	water clear	635	626	2.00	55.0	55.0	
HCL-1706DR-4	super red	water clear	660	643	1.80	12.0	12.0	
HCL-1706CR-4	super red	water clear	660	643	1.80	25.0	25.0	
HCL-1706BR-4	super red	water clear	655	638	2.1	20.0	20.0	
HCL-1706ARA-4	super red	water clear	660	645	1.86	45.0	45.0	
HCL-1707-4	amber	water clear	610	606	2.05	6.0	6.0	
HCL-1707FA-4	super amber	water clear	607	605	2.00	120.0	120.0	
HCL-1708ABC-4	super blue	water clear	468	470	3.50	48.0	48.0	
HCL-1708ABD-4	super blue	water clear	468	470	3.50	52.0	52.0	
HCL-1709AWC-1	super white	yellow diffused	---	---	3.50	150.0	150.0	

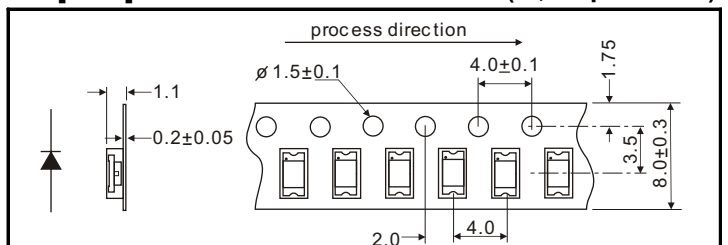
IV1: Labsphere LED-1100 IV2: EXELTRON 2001.

Recommended Soldering Pattern:



Tape Specifications:

(4,000pcs/Reel)

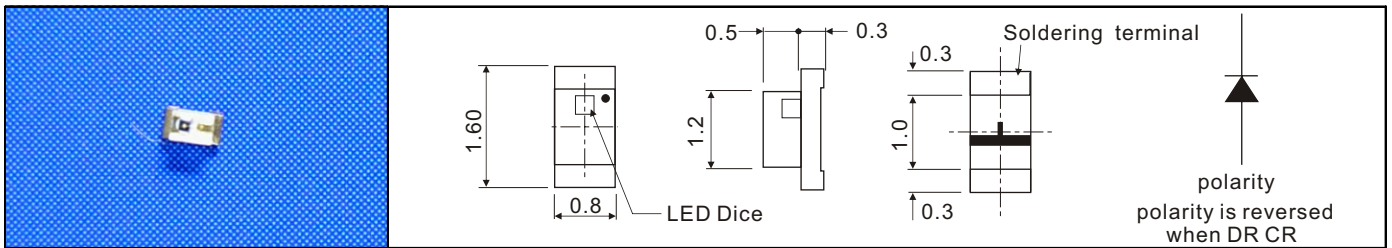


Surface Mount LEDs

0603 Type 1.6mm(L) X 0.8mm(W) X 0.8mm(H)

IF=20mA Ta=25°C

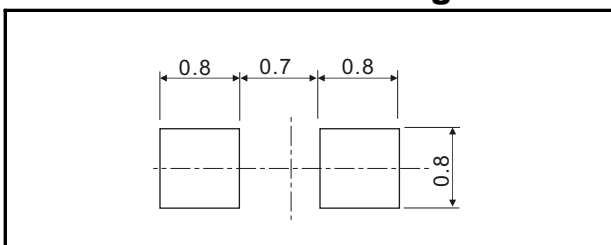
Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		IV1	IV2	



HCL-1902-4	hi-red	water clear	700	658	2.20	1.25	1.25	140
HCL-1903-4	yellow green	water clear	570	567	2.15	9.0	9.0	
HCL-1903DG-4	yellow green	water clear	570	567	2.15	13.0	13.0	
HCL-1903CG-4	yellow green	water clear	570	567	2.15	16.0	16.0	
HCL-1903BG-4	super yellow green	water clear	575	572	2.20	20.0	20.0	
HCL-1903PG-4	pure green	water clear	557	555	2.20	2.3	2.3	
HCL-1903AGC-4	super pure green	water clear	523	525	3.50	180.0	180.0	
HCL-1903B-4	super bluish green	water clear	502	505	3.50	130.0	130.0	
HCL-1904-4	yellow	water clear	589	585	2.10	6.0	6.0	
HCL-1904AY-4	super yellow	water clear	589	588	2.00	80.0	80.0	
HCL-1904FY-4	super yellow	water clear	589	588	2.00	100.0	100.0	
HCL-1905-4	hi-eff red	water clear	625	618	2.05	5.0	5.0	
HCL-1905AO-4	super orange	water clear	620	615	2.00	75.0	75.0	
HCL-1905FO-4	super orange	water clear	620	615	2.00	120.0	120.0	
HCL-1905AOR-4	super fresh red	water clear	635	626	2.00	70.0	70.0	
HCL-1905AORb-4	super fresh red	water clear	635	626	2.00	65.0	65.0	
HCL-1906DR-4	super red	water clear	660	643	1.80	10.0	10.0	
HCL-1906CR-4	super red	water clear	660	643	1.80	25.0	25.0	
HCL-1906BR-4	super red	water clear	655	638	2.10	25.0	25.0	
HCL-1906ARA-4	super red	water clear	660	645	1.86	30.0	30.0	
HCL-1907-4	amber	water clear	610	606	2.05	8.0	8.0	
HCL-1907FA-4	super amber	water clear	607	605	2.00	120.0	120.0	
HCL-1908ABC-4	super blue	water clear	468	470	3.50	48.0	48.0	
HCL-1908ABD-4	super blue	water clear	468	470	3.50	52.0	52.0	
HCL-1909AWC-1	super white	yellow diffused	---	---	3.50	150.0	150.0	

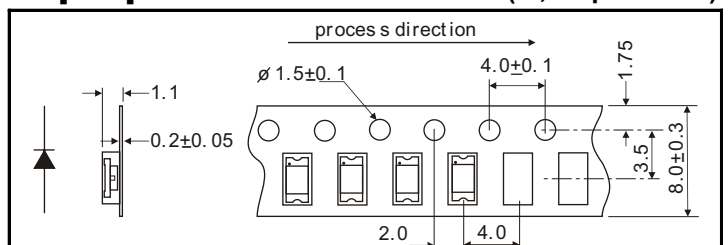
IV1:Labsphere LED-1100 IV2:EXELTRON 2001.

Recommended Soldering Pattern:



Tape Specifications:

(4,000pcs/Reel)

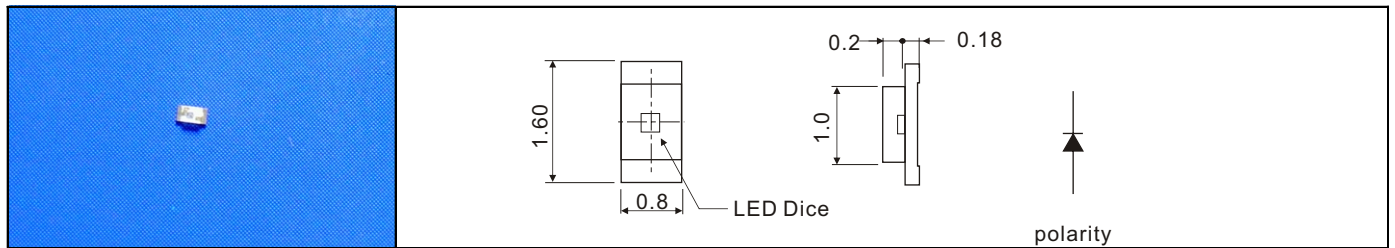


Surface Mount LEDs

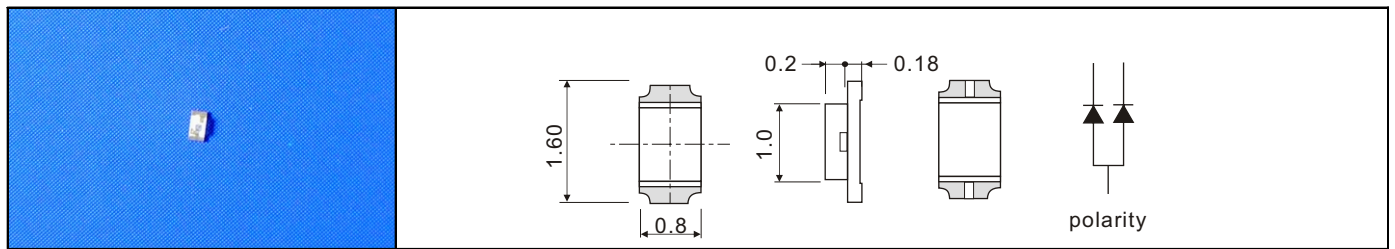
0603 Type 1.6mm(L) X 0.8mm(W) X 0.4mm(H)

IF=5mA Ta=25°C

Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		IV1	IV2	



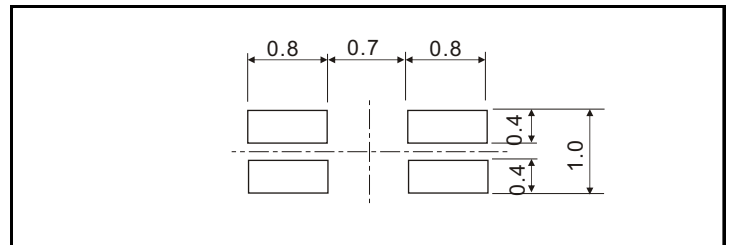
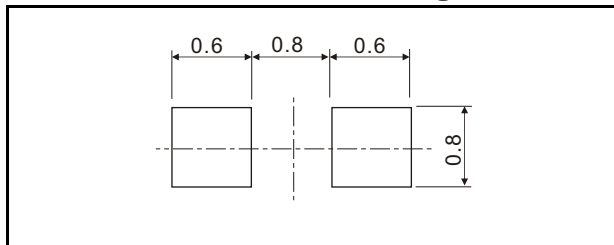
HCL-1913AGC	super pure green	water clear	525	527	2.85	180.0	180.0	150
HCL-1918ABD	super blue	water clear	470	473	2.85	65.0	65.0	
HCL-1918ABE	super blue	water clear	473	478	2.85	85.0	85.0	
HCL-1919AWD	white	yellow diffused	---	---	2.85	150.0	150.0	
HCL-1919BWD	blue white	yellow diffused	---	---	2.85	150.0	150.0	
HCL-1919RWD	red white	yellow diffused	---	---	2.85	150.0	150.0	



HCL-191AOR ABD	fresh red	water clear	635	626	1.75	110.0	110.0	150
	super blue		470	473	2.85	65.0	65.0	
HCL-191AOR AGC	fresh red	water clear	635	626	1.75	110.0	110.0	
	super pure green		525	527	2.85	170.0	170.0	

IV1:Labsphere LED-1100 IV2:EXELTRON 2001.
(4,000pcs/Reel)

Recommended Soldering Pattern:

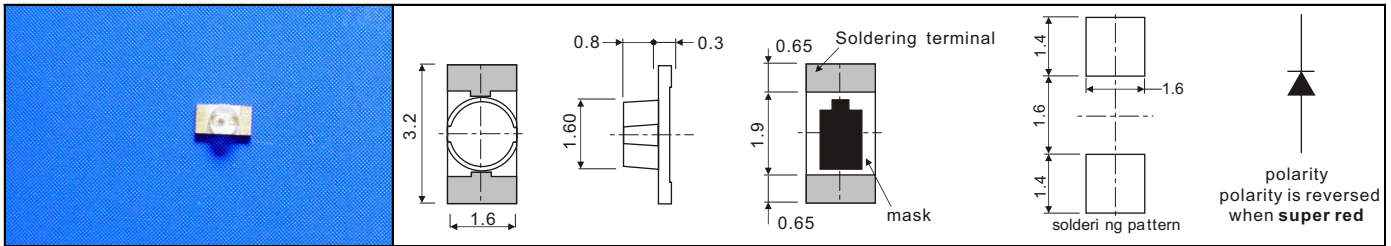


Surface Mount LEDs

1206 Type 3.2mm(L) X 1.6mm(W) X 1.1mm(H)

IF=20mA Ta=25°C

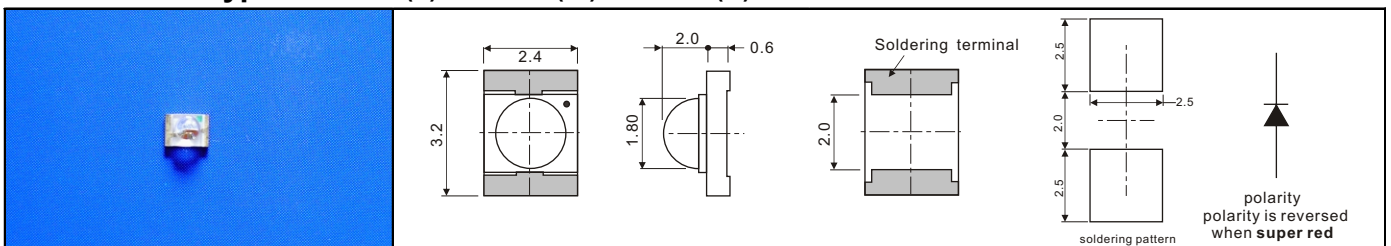
Device No	Color		Wavelength (nm)		VF Typical (V)	Brightness (mcd)		View Angle 2θ1/2
	Emitter	Lens	λp	λd		Minimum	Typical	



HCL-2403	yellow green	water clear	570	567	2.15	7.0	13.0	140
HCL-2403DG	yellow green	water clear	570	567	2.15	8.0	15.0	
HCL-2404	yellow	water clear	589	585	2.10	4.0	9.0	
HCL-2404AY	super yellow	water clear	589	588	2.00	27.0	47.0	
HCL-2405	hi-eff red	water clear	625	618	2.05	4.0	9.0	
HCL-2405AO	super orange	water clear	620	615	2.00	17.0	31.0	
HCL-2406CR	super red	water clear	660	643	1.80	7.0	18.0	
HCL-2406AR	super red	water clear	660	643	1.86	22.0	38.0	

Lens 1.8mm Type 3.2mm(L) X 2.4mm(W) X 2.6mm(H)

IF=20mA Ta=25°C



HCL-4203	yellow green	water clear	570	567	2.15	41.0	82.0	25
HCL-4203DG	yellow green	water clear	570	567	2.15	58.0	147.0	
HCL-4204	yellow	water clear	589	585	2.10	19.0	33.0	
HCL-4204AY	super yellow	water clear	589	588	2.00	58.0	175.0	
HCL-4205	hi-eff red	water clear	625	618	2.05	19.0	33.0	
HCL-4205AO	super orange	water clear	620	615	2.00	107.0	245.0	
HCL-4206CR	super red	water clear	660	643	1.80	71.0	103.0	
HCL-4206AR	super red	water clear	660	645	1.86	101.0	163.0	