

Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 2θ1/2	Figure No.
		Material	Emitting Color	λp(nm)		Typ.	Max.	Min.	Max.		
1.8mm Round	1814HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	2	70	Fig.1
	1814VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	12.5	32	70	
	1814VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	32	120	30	
	1814GD	GaP	Green	565	Color Diff.	2.1	2.8	2	5	70	
	1814GC	GaP	Green	565	Water Clear	2.1	2.8	5	12.5	30	
	1814YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	2	5	70	
	1814YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	5	12.5	30	
2mm Flat Top	214HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1.25	60	Fig.2
	214VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	8	12.5	60	
	214GD	GaP	Green	565	Color Diff.	2.1	2.8	3.2	8	60	
	214YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	3.2	8	60	
3mm Round	302HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1	60	Fig.3
	302HT	GaP	Red	700	Red Transparent	2.1	2.8	1	3	50	
	302VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	100	60	
	302VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	200	300	50	
	302VT	GaAsP/GaP	Red	660	Red Transparent	2.1	2.8	50	250	50	
	302GD	GaP	Green	565	Color Diff.	2.1	2.8	5	12.5	60	
	302GC	GaP	Green	565	Water Clear	2.1	2.8	20	70	50	
	302GT	GaP	Green	565	Green Transparent	2.1	2.8	5	30	50	
	302YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	5	12.5	60	
	302YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	10	50	50	
	302YT	GaAsP/GaP	Yellow	590	Yellow Transparent	2.0	2.8	5	20	50	
3mm Round	304HD	GaP	Red	700	Color Diff.	2.1	2.8	1.3	3.2	60	Fig.4
	304HT	GaP	Red	700	Red Transparent	2.1	2.8	2.5	10	50	
	304VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	120	60	
	304VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	200	350	50	
	304VT	GaAsP/GaP	Red	660	Red Transparent	2.1	2.8	50	280	50	
	304GD	GaP	Green	565	Color Diff.	2.1	2.8	5	20	60	
	304GC	GaP	Green	565	Water Clear	2.1	2.8	20	80	50	
	304GT	GaP	Green	565	Green Transparent	2.1	2.8	5	30	50	

Fig. 1

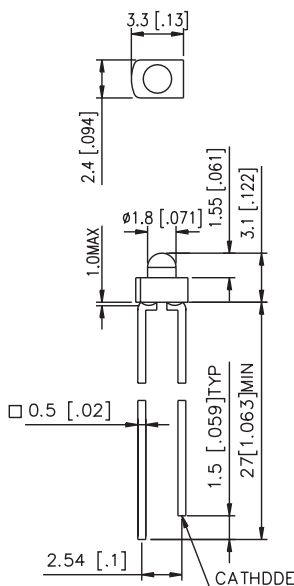


Fig. 2

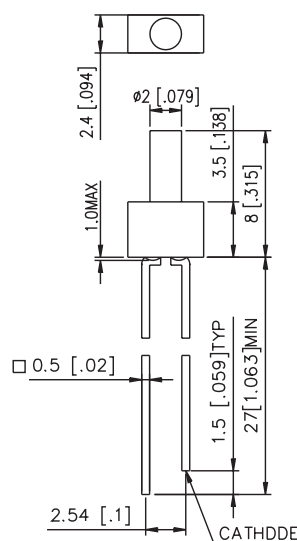


Fig. 3

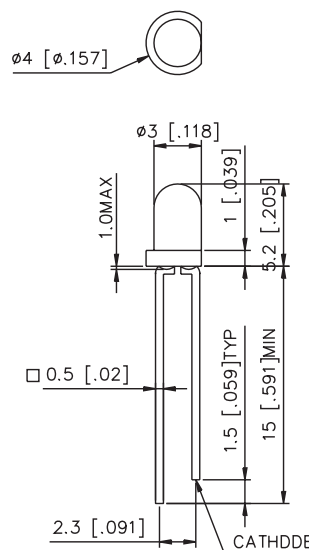
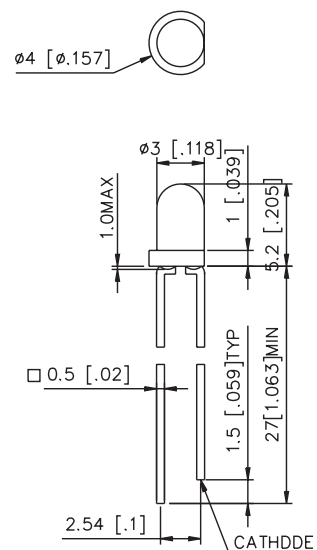


Fig. 4



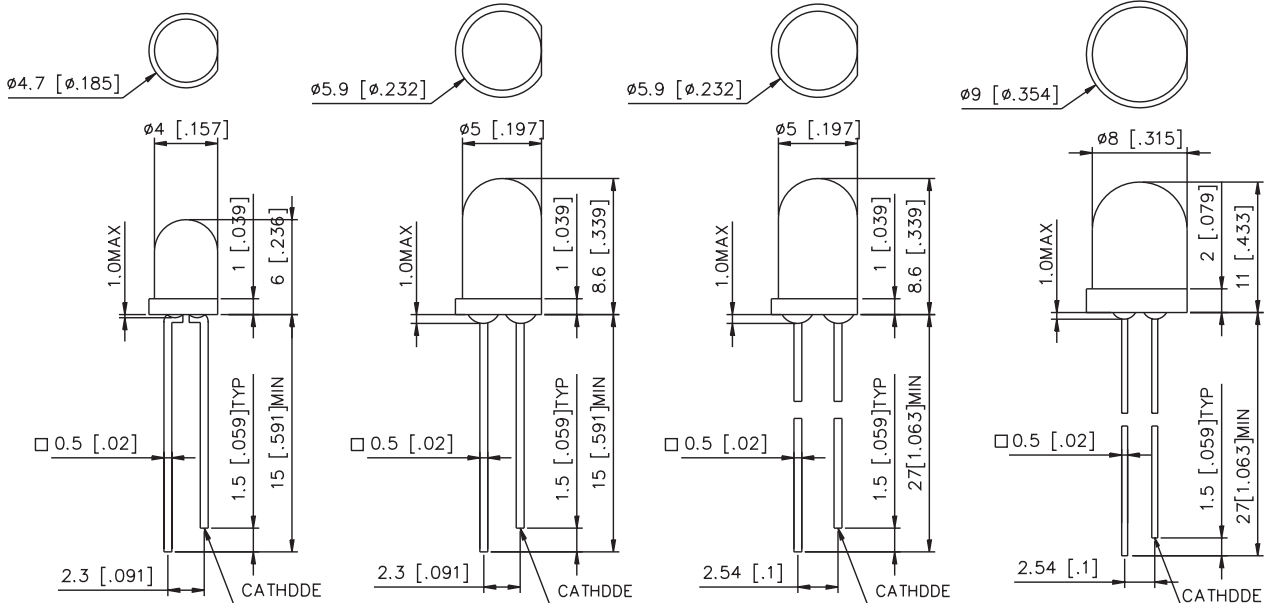
Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 2θ1/2	Figure No.
		Material	Emitting Color	λp(nm)		Typ.	Max.	Min.	Max.		
3mm Round	304YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	5	20	60	Fig.4
	304YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	10	70	50	
	304YT	GaAsP/GaP	Yellow	590	Yellow Transparent	2.0	2.8	5	30	50	
	304BC	GaN/InGaN	Blue	460	Water Clear	3.1	3.4	500	1200	50	
	304BD	GaN/InGaN	Blue	460	Color Diff.	3.1	3.4	8	20	60	
	304PC	InGaN	Purple	405	Water Clear	3.4	4.5	100	400	50	
	304WC	GaN/InGaN	White	X:0.28 Y:0.30	Water Clear	3.1	3.4	1000	2000	50	
4mm Round	402HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1	80	Fig.5
	402HT	GaP	Red	700	Red Transparent	2.1	2.8	1	3	60	
	402VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	100	80	
	402VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	200	300	60	
	402VT	GaAsP/GaP	Red	660	Red Transparent	2.1	2.8	50	250	60	
	402GD	GaP	Green	565	Color Diff.	2.1	2.8	5	12.5	80	
	402GC	GaP	Green	565	Water Clear	2.1	2.8	20	70	60	
	402GT	GaP	Green	565	Green Transparent	2.1	2.8	5	30	60	
	402YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	5	12.5	80	
	402YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	10	50	60	
402YT	GaAsP/GaP	Yellow	590	Yellow Transparent	2.0	2.8	5	20	60		
5mm Round	502HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1.1	30	Fig.6
	502HT	GaP	Red	700	Red Transparent	2.1	2.8	1	3.2	20	
	502VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	100	30	
	502VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	200	350	20	
	502VT	GaAsP/GaP	Red	660	Red Transparent	2.1	2.8	50	250	20	
	502GD	GaP	Green	565	Color Diff.	2.1	2.8	5	12.5	30	
	502GC	GaP	Green	565	Water Clear	2.1	2.8	20	80	20	
	502GT	GaP	Green	565	Green Transparent	2.1	2.8	5	30	20	
	502YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	5	12.5	30	
	502YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	10	60	20	
	502YT	GaAsP/GaP	Yellow	590	Yellow Transparent	2.0	2.8	5	20	20	

Fig. 5

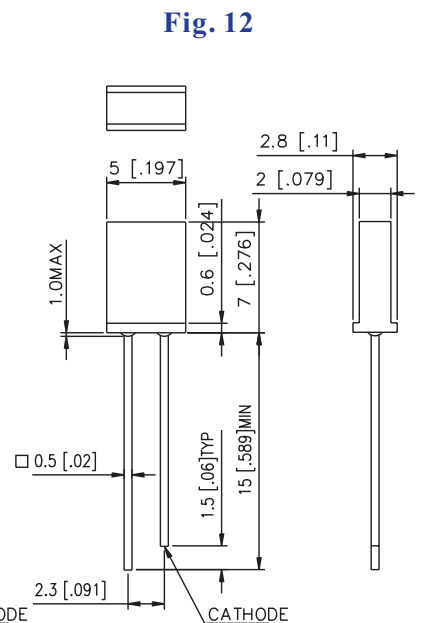
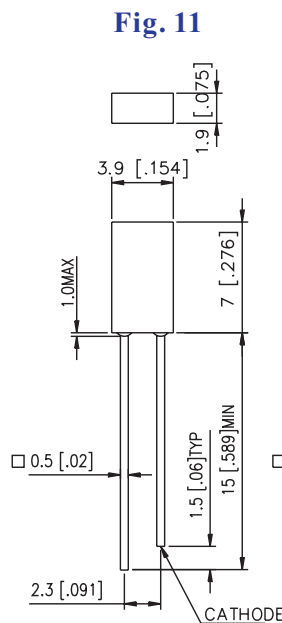
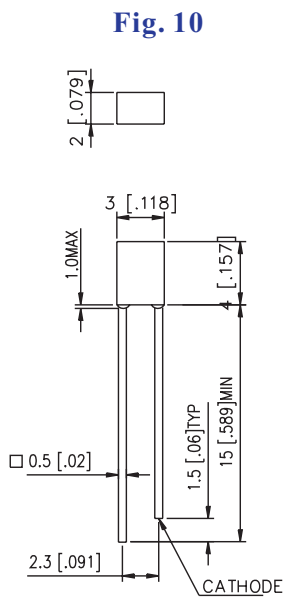
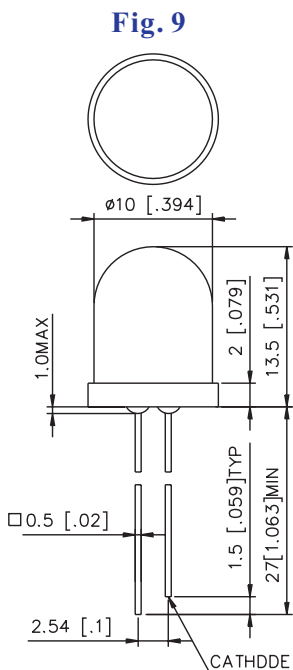
Fig. 6

Fig. 7

Fig. 8



Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 2θ1/2	Figure No.
		Material	Emitting Color	λp(nm)		Typ.	Max.	Min.	Max.		
5mm Round	503HD	GaP	Red	700	Color Diff.	2.1	2.8	1.3	3.2	30	Fig.7
	503HT	GaP	Red	700	Red Transparent	2.1	2.8	2.5	10	20	
	503VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	120	30	
	503VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	200	380	20	
	503VT	GaAsP/GaP	Red	660	Red Transparent	2.1	2.8	50	290	20	
	503GD	GaP	Green	565	Color Diff.	2.1	2.8	5	20	30	
	503GC	GaP	Green	565	Water Clear	2.1	2.8	20	90	20	
	503GT	GaP	Green	565	Green Transparent	2.1	2.8	5	30	20	
	503YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	5	20	30	
	503YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	10	80	20	
	503YT	GaAsP/GaP	Yellow	590	Yellow Transparent	2.0	2.8	5	35	20	
	503BC	GaN/InGaN	Blue	460	Water Clear	3.1	3.4	1000	3000	20	
	503BD	GaN/InGaN	Blue	460	Color Diff.	3.1	3.4	10	30	30	
	503PC	InGaN	Purple	405	Water Clear	3.4	4.5	300	800	20	
503WC	GaN/InGaN	White	X:0.28 Y:0.30	Water Clear	3.1	3.4	3000	7000	20		
8mm Round	803VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	100	60	Fig.8
	803VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	50	250	50	
	803GD	GaP	Green	565	Color Diff.	2.1	2.8	20	70	60	
	803GC	GaP	Green	565	Water Clear	2.1	2.8	50	175	50	
	803YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	20	70	60	
	803YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	50	175	50	
10mm Round	1003VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	100	60	Fig.9
	1003VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	50	250	50	
	1003GD	GaP	Green	565	Color Diff.	2.1	2.8	20	70	60	
	1003GC	GaP	Green	565	Water Clear	2.1	2.8	50	250	50	
	1003YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	20	70	60	
	1003YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	50	250	50	
2x3mm Rect.	232HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1	100	Fig.10
	232VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	8	20	100	
	232VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	20	250	90	



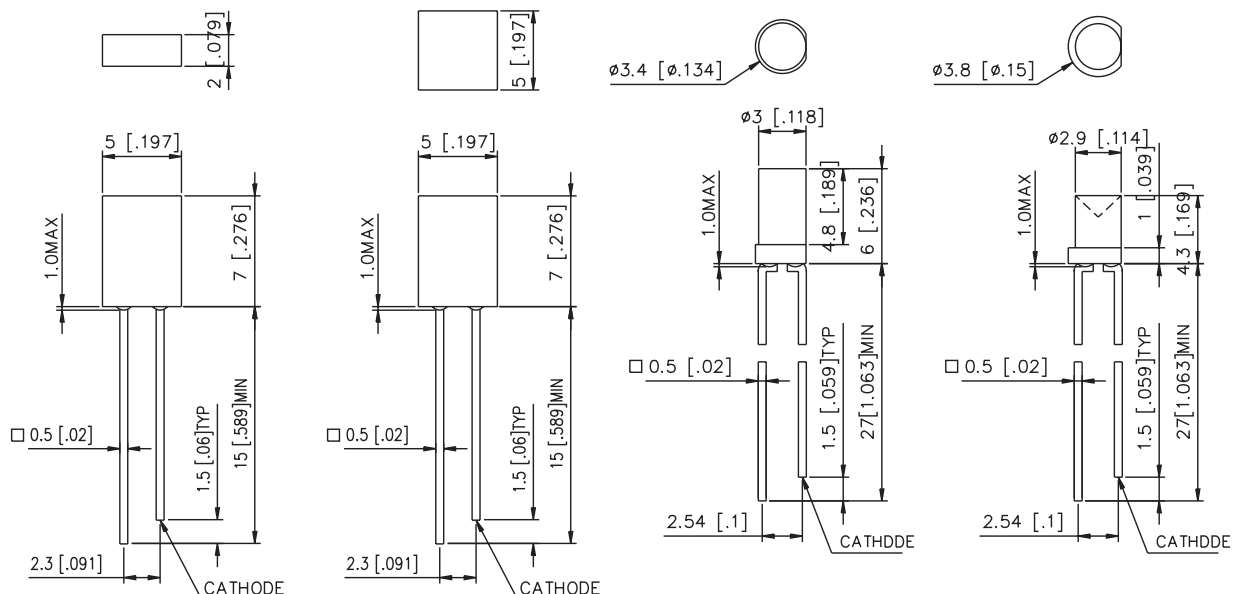
Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 2θ1/2	Figure No.
		Material	Emitting Color	λp(nm)		Typ.	Max.	Min.	Max.		
2x3mm Rect.	232GD	GaP	Green	565	Color Diff.	2.1	2.8	0.7	3.5	100	Fig.10
	232GC	GaP	Green	565	Water Clear	2.1	2.8	2	70	90	
	232YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	0.5	2.5	100	
	232YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	2	70	90	
1.9x3.9mm Rectangular	242HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1	110	Fig.11
	242VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	8	20	110	
	242VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	20	270	100	
	242GD	GaP	Green	565	Color Diff.	2.1	2.8	0.7	3.5	110	
	242GC	GaP	Green	565	Water Clear	2.1	2.8	2	75	100	
	242YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	0.5	2.5	110	
	242YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	2	5	100	
2x5mm Rectangular	252HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1.6	110	Fig.12
	252VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	8	23	110	
	252VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	20	250	100	
	252GD	GaP	Green	565	Color Diff.	2.1	2.8	1.6	6	110	
	252GC	GaP	Green	565	Water Clear	2.1	2.8	2	70	100	
	252YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	1.6	6	110	
	252YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	2	70	100	
2x5mm Rectangular	262HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1.6	110	Fig.13
	262VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	8	23	110	
	262VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	20	250	100	
	262GD	GaP	Green	565	Color Diff.	2.1	2.8	1.6	6	110	
	262GC	GaP	Green	565	Water Clear	2.1	2.8	2	70	100	
	262YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	1.6	6	110	
	262YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	2	70	100	
5x5mm Rectangular	552HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	1.6	110	Fig.14
	552VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	8	23	110	
	552VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	20	250	100	
	552GD	GaP	Green	565	Color Diff.	2.1	2.8	1.6	6	110	
	552GC	GaP	Green	565	Water Clear	2.1	2.8	2	70	100	
	552YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	1.6	6	110	
	552YC	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	2	70	100	

Fig. 13

Fig. 14

Fig. 15

Fig. 16



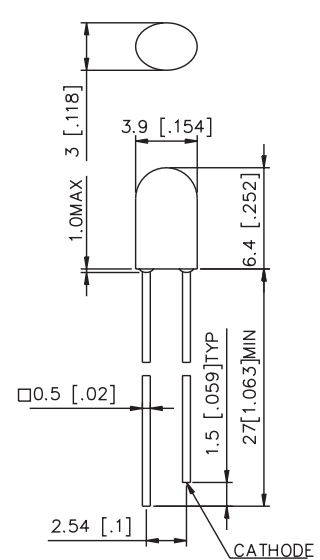
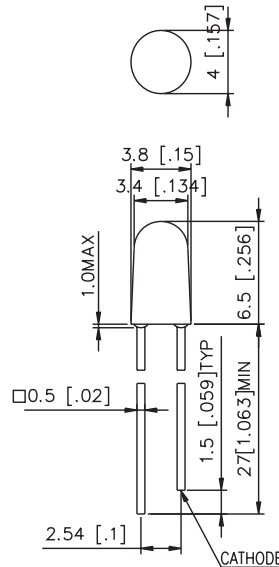
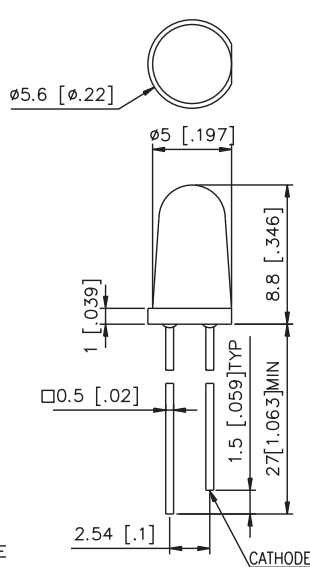
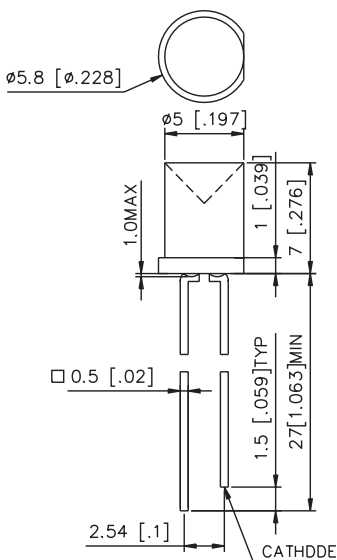
Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 2θ1/2	Figure No.
		Material	Emitting Color	λp(nm)		Typ.	Max.	Min.	Max.		
3mm Cylindrical	314HD	GaP	Red	700	Color Diff.	2.1	2.8	0.5	3.2	100	Fig.15
	314VD	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	10	50	100	
	314GD	GaP	Green	565	Color Diff.	2.1	2.8	1.3	8	100	
	314YD	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	1.3	8	100	
3mm Cylindrical	324VT	GaAsP/GaP	Red	660	Red Transparent	2.1	2.8	3.2	12.5	130	Fig.16
	324VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	3.2	12.5	130	
	324GT	GaP	Green	565	Green Transparent	2.1	2.8	2	8	130	
	324GC	GaP	Green	565	Water Clear	2.1	2.8	2	8	130	
	324YT	GaAsP/GaP	Yellow	590	Yellow Transparent	2.0	2.8	2	8	130	
	324YD	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	2	8	130	
5mm Cylindrical	524VT	GaAsP/GaP	Red	660	Red Transparent	2.1	2.8	3.2	12.5	140	Fig.17
	524VCL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	3.2	12.5	140	
	524GT	GaP	Green	565	Green Transparent	2.1	2.8	2	8	140	
	524GC	GaP	Green	565	Water Clear	2.1	2.8	2	8	140	
	524YT	GaAsP/GaP	Yellow	590	Yellow Transparent	2.0	2.8	2	8	140	
	524YD	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	2	8	140	
5mm Coniform	533BT	GaN	Blue	460~475	Blue Transparent	3.2	4.5	1500	2000	15	Fig.18
	533PGT	GaN	Pure green	500~510	Green Transparent	3.6	4.5	8000	10000	15	
	533GT	GaP	Yellow green	520~535	Green Transparent	3.5	4.5	6000	8000	15	
	533YT	GaP	Yellow	567~573	Yellow Transparent	2.2	2.6	350	500	15	
	533OD	GaAsP/GaP	Orange	584~594	Color Diff.	1.9	2.4	6000	8000	15	
	533VDL	AlGaInP	Red	603~619	Color Diff.	1.9	2.4	6000	8000	15	
	533VDH	AlGaInP	Red	620~635	Color Diff.	1.9	2.4	4000	6000	15	
3.8x4.0 Elliptical	413BT	GaN	Blue	460~475	Blue Transparent	3.2	4.5	250	350	120	Fig.19
	413PGT	GaN	Pure green	520~535	Green Transparent	3.5	4.5	600	800	120	
	413GT	GaP	Yellow green	567~573	Green Transparent	2.2	2.6	60	80	120	
	413YT	GaP	Yellow	584~594	Yellow Transparent	1.9	2.4	300	400	120	
	413OD	GaAsP/GaP	Orange	603~619	Color Diff.	2.0	2.5	300	400	120	
	413VD	AlGaInP	Red	620~635	Color Diff.	1.9	2.2	150	200	120	

Fig. 17

Fig. 18

Fig. 19

Fig. 20



Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 2θ/2	Figure No.
		Material	Emitting Color	λp(nm)		Typ.	Max.	Min.	Max.		
3.0x3.9 Elliptical	393BT	GaN	Blue	460~475	Blue Transparent	3.2	4.5	300	400	110	Fig.20
	393PGT	GaN	Pure green	520~535	Green Transparent	3.5	4.5	1000	1200	110	
	393YT	GaP	Yellow	584~595	Yellow Transparent	1.9	2.4	450	600	110	
	393OD	GaAsP/GaP	Orange	603~619	Color Diff.	2.0	2.5	300	400	110	
	393VD	AlGaInP	Red	620~635	Color Diff.	1.9	2.4	250	350	110	
3.2x4.3 Elliptical	433BT	GaN	Blue	460~475	Blue Transparent	3.2	4.5	250	350	120	Fig.21
	433PGT	GaN	Pure green	520~535	Green Transparent	3.5	4.5	600	800	120	
	433GT	GaP	Yellow green	567~573	Green Transparent	2.2	2.6	60	80	120	
	433YT	GaP	Yellow	584~594	Yellow Transparent	1.9	2.4	300	400	120	
	433OD	GaAsP/GaP	Orange	603~619	Color Diff.	2.0	2.5	300	400	120	
	433VD	AlGaInP	Red	620~635	Color Diff.	1.9	2.2	150	200	120	
3.8x5.2 Elliptical	383BT	GaN	Blue	460~475	Blue Transparent	3.2	4.5	300	400	110	Fig.22
	383PGT	GaN	Pure green	520~535	Green Transparent	3.5	4.5	1000	1200	110	
	383GT	GaP	Yellow green	567~573	Green Transparent	2.2	2.6	70	90	110	
	383YT	GaP	Yellow	584~595	Yellow Transparent	1.9	2.4	450	600	110	
	383OD	GaAsP/GaP	Orange	603~619	Color Diff.	2.0	2.5	300	400	110	
	383VDL	AlGaInP	Red	620~635	Color Diff.	1.9	2.4	150	200	110	
	383VDH	AlGaInP	Red	620~635	Color Diff.	1.9	2.4	380	500	110	
4.2x5.0 Elliptical	513BT	GaN	Blue	460~475	Blue Transparent	3.2	4.5	500	700	70	Fig.23
	513PGT	GaN	Pure green	520~535	Green Transparent	3.2	4.5	1500	2000	70	
	513GT	GaP	Yellow green	567~573	Green Transparent	1.9	2.5	120	150	70	
	513YT	GaP	Yellow	584~595	Yellow Transparent	1.9	2.4	600	800	70	
	513VDL	AlGaInP	Red	620~635	Color Diff.	1.9	2.4	450	600	70	
	513VDH	AlGaInP	Red	620~635	Color Diff.	1.9	2.4	700	1000	70	
5.8x4.6 Elliptical	583BT	GaN	Blue	460~475	Blue Transparent	3.2	4.5	460	600	70	Fig.24
	583PGT	GaN	Pure green	520~535	Green Transparent	3.5	4.5	1600	2000	70	
	583GT	GaP	Yellow green	567~573	Green Transparent	2.2	2.6	120	150	70	
	583YT	GaP	Yellow	584~595	Yellow Transparent	1.9	2.4	600	800	70	
	583VDL	AlGaInP	Red	603~619	Color Diff.	2.0	2.5	600	800	70	
	583VDH	AlGaInP	Red	620~635	Color Diff.	1.9	2.4	700	900	70	

Fig. 21

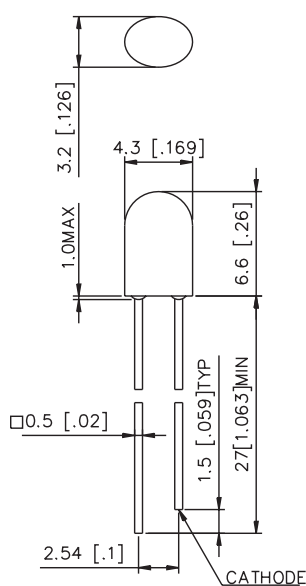


Fig. 22

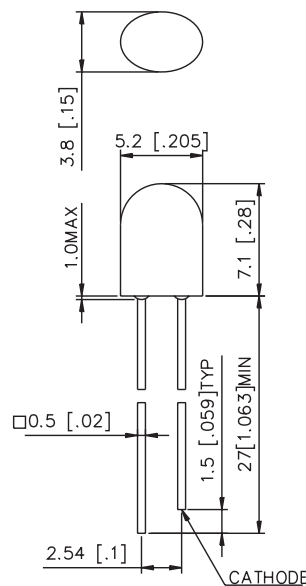


Fig. 23

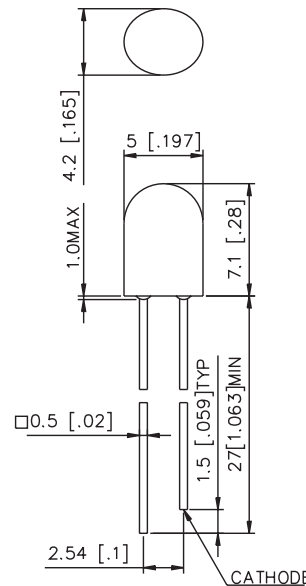
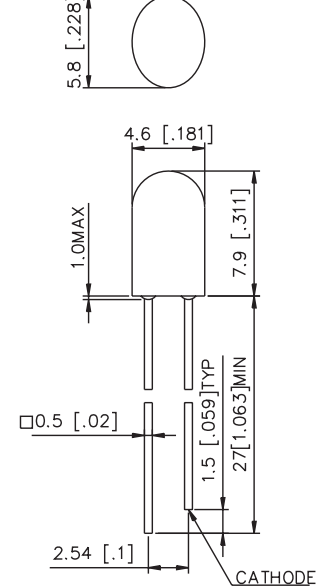


Fig. 24



Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 201/2	Figure No.
		Material	Emitting Color	$\lambda_p$ (nm)		Typ.	Max.	Min.	Max.		
5mm Round Blinking Single-color	503HDBL	GaP	Red	700	Color Diff.	2.1	2.8	1.3	3.2	30	Fig.25
	503VDBL	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	120	30	
	503VCLBL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	200	380	20	
	503GDBL	GaP	Green	565	Color Diff.	2.1	2.8	5	20	30	
	503GCBL	GaP	Green	565	Water Clear	2.1	2.8	20	90	20	
	503YDBL	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	5	20	30	
	503YCBL	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	10	80	20	
5mm Round Blinking Bi-color	503RB-F	GaAsP	Red	635	Water Clear	2.1	2.8	800	1500	20	
		GaN	Blue	465		3.0	3.5	1500	3000		
		(IC)	R B	/		3.5	4.5	/	/		
5mm Round Blinking Full-color	503RPG-B-F Fast Blinking	GaAsP	Red	635	Water Clear	2.1	2.8	800	1500	20	
		AlGaInP	Pure Green	520		3.0	3.5	2500	4500		
		GaN	Blue	465		3.0	3.5	1500	3000		
	503RPG-B-S Slow Blinking	GaAsP	Red	635	Water Clear	2.1	2.8	800	1500	20	
		AlGaInP	Pure Green	520		3.0	3.5	2500	4500		
		GaN	Blue	465		3.0	3.5	1500	3000		
(IC)	R PG B	/	3.5	4.5	/	/					
8mm Round Blinking Single-color	803VDBL	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	100	60	Fig.26
	803VCLBL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	50	250	50	
	803GDBL	GaP	Green	565	Color Diff.	2.1	2.8	20	70	60	
	803GCBL	GaP	Green	565	Water Clear	2.1	2.8	50	175	50	
	803YDBL	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	20	70	60	
	803YCBL	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	50	175	50	
10mm Round Blinking Single-color	1003VDBL	GaAsP/GaP	Red	660	Color Diff.	2.1	2.8	20	100	60	Fig.27
	1003VCLBL	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	50	250	50	
	1003GDBL	GaP	Green	565	Color Diff.	2.1	2.8	20	70	60	
	1003GCBL	GaP	Green	565	Water Clear	2.1	2.8	50	250	50	
	1003YDBL	GaAsP/GaP	Yellow	590	Color Diff.	2.0	2.8	20	70	60	
	1003YCBL	GaAsP/GaP	Yellow	590	Water Clear	2.0	2.8	50	250	50	

Fig. 25

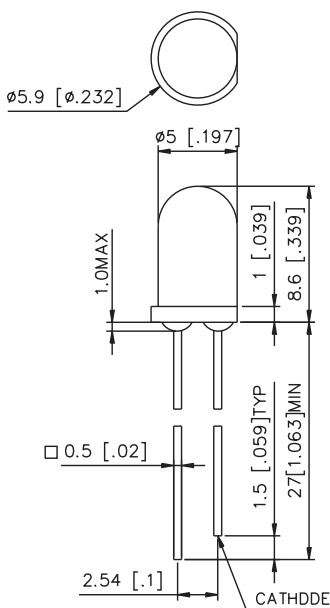


Fig. 26

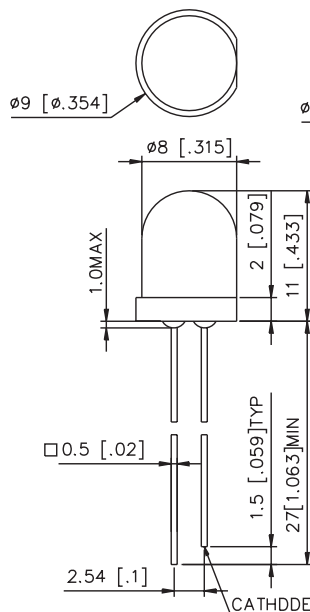


Fig. 27

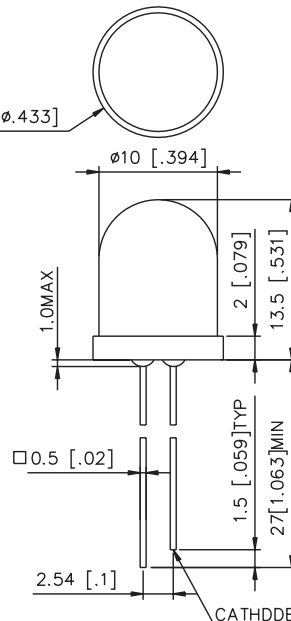
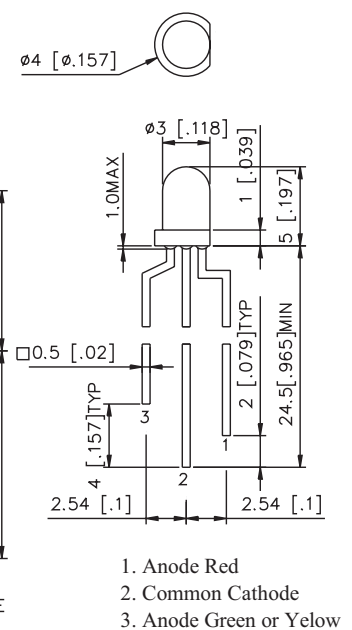


Fig. 28



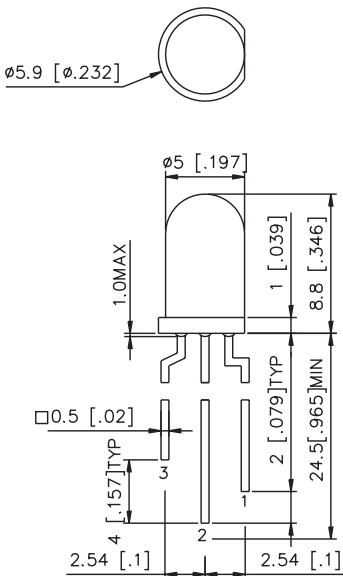
Type	Part No.	Chip			Lens Color	Vf(V)		Iv(mcd) at If=20mA		View Angle 2θ1/2	Figure No.
		Material	Emitting Color	λp(nm)		Typ.	Max.	Min.	Max.		
3mm Round Bi-Color & Bi-Polar	3RG9HW	GaAsP/GaP	Red	660	White Diff.	2.1	2.8	20	50	60	Fig.28
		GaP	Green	565		2.1	2.8	20	50		
	3RY9HW	GaAsP/GaP	Red	660	White Diff.	2.1	2.8	20	50	60	
		GaAsP/GaP	Yellow	590		2.1	2.8	20	50		
3GY9HW	3GY9HW	GaP	Green	565	White Diff.	2.1	2.8	20	50	60	
		GaAsP/GaP	Yellow	590		2.1	2.8	20	50		
5mm Round Bi-Color & Bi-Polar	5RG9HW	GaAsP/GaP	Red	660	White Diff.	2.1	2.8	20	90	60	Fig.29
		GaP	Green	565		2.1	2.8	20	70		
	5RY9HW	GaAsP/GaP	Red	660	White Diff.	2.1	2.8	20	90	60	
		GaAsP/GaP	Yellow	590		2.1	2.8	20	60		
5GY9HW	5GY9HW	GaP	Green	565	White Diff.	2.1	2.8	20	70	60	
		GaAsP/GaP	Yellow	590		2.1	2.8	20	60		
8mm Round Bi-Color & Bi-Polar	8RG9HW	GaAsP/GaP	Red	660	White Diff.	2.1	2.8	30	90	50	Fig.30
		GaP	Green	565		2.1	2.8	20	60		
	8RG9HC	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	50	175	30	
		GaP	Green	565		2.1	2.8	50	100		
10mm Round Bi-Color & Bi-Polar	10RG9HW	GaAsP/GaP	Red	660	White Diff.	2.1	2.8	30	90	50	Fig.31
		GaP	Green	565		2.1	2.8	20	60		
	10RG9HC	GaAsP/GaP	Red	660	Water Clear	2.1	2.8	50	175	30	
		GaP	Green	565		2.1	2.8	50	100		
2x5 Bi-C & Bi-P	2RG9HW	GaAsP/GaP	Red	660	White Diff.	2.1	2.8	8	20	110	Fig.32
		GaP	Green	565		2.1	2.8	8	20		

Fig. 29

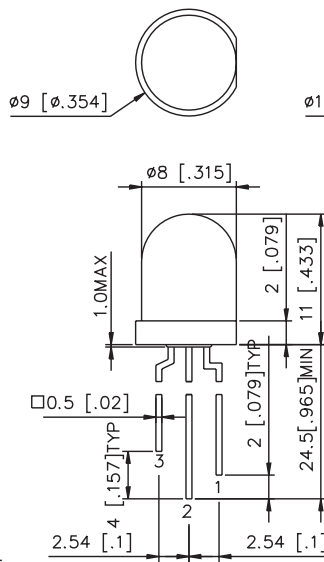
Fig. 30

Fig. 31

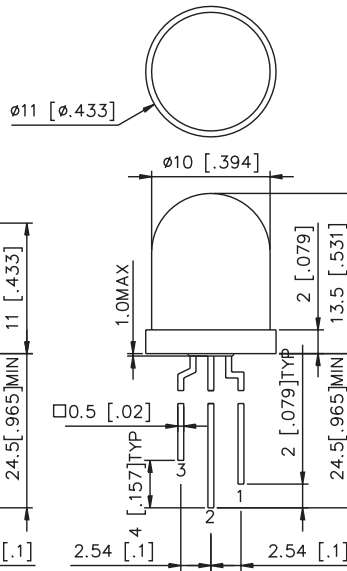
Fig. 32



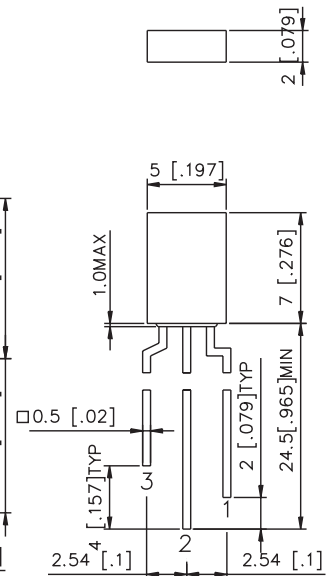
1. Anode Red
2. Common Cathode
3. Anode Green or Yellow



1. Anode Red
2. Common Cathode
3. Anode Green



1. Anode Red
2. Common Cathode
3. Anode Green



1. Anode Red
2. Common Cathode
3. Anode Green



## 503XCH-X-XX

- **Chip Material:** AlGaInP or GaN
- **Construction:** Gas Phase Epitaxial
- **Application:** Traffic Signal, Automotive Exterior Lighting
- **Absolute Maximum Ranges** (Ta=25±3°C)

Power Dissipation	PD	120mW	
DC Forward Current	IF	30mA	
Pulsed Forward Current	IFP	100mA	*1
Reverse Voltage	VR	5V	
Operating Temperature	Topr	-25~+80°C	
Storage Temperature	Tstg	-30~+100°C	

### ● Package Dimensions

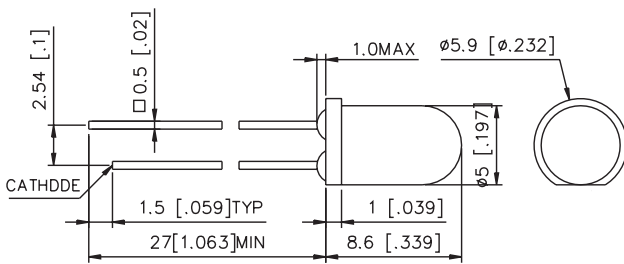


Fig. 1

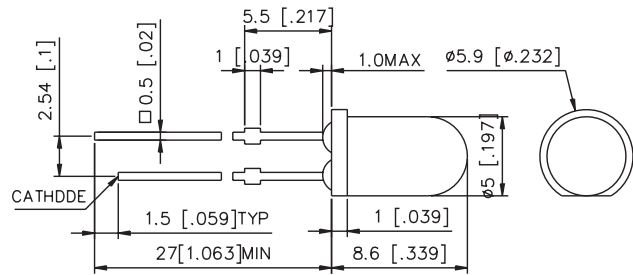


Fig. 2

#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is +/-0.1mm (0.004 inch) unless otherwise specified.
3. The products are sensitive to static electricity.
4. Fig. 2 shows the outline of LED with stopper, and this series is named as 503XCH-X-XX-S.

### Electrical and Optical Characteristics (Ta=25±3°C)

#### Ultra Bright LED Lamp: Red

Part No.	Chip			Lens Color	Vf(V)		Luminous Intensity Iv *2				2θ (Deg.)
	Material	Emitting Color	Wavelength λp(nm) *3		Typ.	Max.	at If=mA	Min. (mcd)	Typ. (mcd)	Max. (mcd)	
503VCH-A-15	AlGaInP	Red	630	Water Clear	2.1	2.5	20	1450	1600	1930	15
503VCH-A-23	AlGaInP	Red	630	Water Clear	2.1	2.5	20	1450	1600	1930	23
503VCH-A-30	AlGaInP	Red	630	Water Clear	2.1	2.5	20	1450	1600	1930	30
503VCH-B-15	AlGaInP	Red	630	Water Clear	2.1	2.5	20	2200	2900	3300	15
503VCH-B-23	AlGaInP	Red	630	Water Clear	2.1	2.5	20	2200	2900	3300	23
503VCH-B-30	AlGaInP	Red	630	Water Clear	2.1	2.5	20	2200	2900	3300	30

#### Ultra Bright LED Lamp: Bluish-Green

Part No.	Chip			Lens Color	Vf(V)		Luminous Intensity Iv *2				2θ (Deg.)
	Material	Emitting Color	Wavelength λp(nm) *3		Typ.	Max.	at If=mA	Min. (mcd)	Typ. (mcd)	Max. (mcd)	
503BGCH-A-15	AlGaInP	Bluish green	505	Water Clear	2.8	3.4	20	3300	4500	4900	15
503BGCH-A-23	AlGaInP	Bluish green	505	Water Clear	2.8	3.4	20	3300	4500	4900	23
503BGCH-A-30	AlGaInP	Bluish green	505	Water Clear	2.8	3.4	20	3300	4500	4900	30
503BGCH-B-15	AlGaInP	Bluish green	505	Water Clear	2.8	3.4	20	4900	6000	7300	15
503BGCH-B-23	AlGaInP	Bluish green	505	Water Clear	2.8	3.4	20	4900	6000	7300	23
503BGCH-B-30	AlGaInP	Bluish green	505	Water Clear	2.8	3.4	20	4900	6000	7300	30

## 503XCH-X-XX

### Ultra Bright LED Lamp: Pure Green

Part No.	Chip			Lens Color	Vf(V)		Luminous Intensity Iv *2				2θ (Deg.)
	Material	Emitting Color	Wavelength λp(nm) *3		Typ.	Max.	at If=mA	Min. (mcd)	Typ. (mcd)	Max. (mcd)	
503PGCH-A-15	AlGaInP	Pure green	525	Water Clear	2.8	3.4	20	3300	4500	4900	15
503PGCH-A-23	AlGaInP	Pure green	525	Water Clear	2.8	3.4	20	3300	4500	4900	23
503PGCH-A-30	AlGaInP	Pure green	525	Water Clear	2.8	3.4	20	3300	4500	4900	30
503PGCH-B-15	AlGaInP	Pure green	525	Water Clear	2.8	3.4	20	4900	6000	7300	15
503PGCH-B-23	AlGaInP	Pure green	525	Water Clear	2.8	3.4	20	4900	6000	7300	23
503PGCH-B-30	AlGaInP	Pure green	525	Water Clear	2.8	3.4	20	4900	6000	7300	30

### Ultra Bright LED Lamp: Yellow

Part No.	Chip			Lens Color	Vf(V)		Luminous Intensity Iv *2				2θ (Deg.)
	Material	Emitting Color	Wavelength λp(nm) *3		Typ.	Max.	at If=mA	Min. (mcd)	Typ. (mcd)	Max. (mcd)	
503YCH-A-15	AlGaInP	Yellow	592	Water Clear	2.1	2.5	20	1450	2000	2200	15
503YCH-A-23	AlGaInP	Yellow	592	Water Clear	2.1	2.5	20	1450	2000	2200	23
503YCH-A-30	AlGaInP	Yellow	592	Water Clear	2.1	2.5	20	1450	2000	2200	30
503YCH-B-15	AlGaInP	Yellow	592	Water Clear	2.1	2.5	20	2200	2900	3300	15
503YCH-B-23	AlGaInP	Yellow	592	Water Clear	2.1	2.5	20	2200	2900	3300	23
503YCH-B-30	AlGaInP	Yellow	592	Water Clear	2.1	2.5	20	2200	2900	3300	30

### Ultra Bright LED Lamp: Blue

Part No.	Chip			Lens Color	Vf(V)		Luminous Intensity Iv *2				2θ (Deg.)
	Material	Emitting Color	Wavelength λp(nm) *3		Typ.	Max.	at If=mA	Min. (mcd)	Typ. (mcd)	Max. (mcd)	
503BCH-A-15	GaN	Blue	465	Water Clear	3.1	3.4	20	1450	2000	2200	15
503BCH-A-23	GaN	Blue	465	Water Clear	3.1	3.4	20	1450	2000	2200	23
503BCH-A-30	GaN	Blue	465	Water Clear	3.1	3.4	20	1450	2000	2200	30
503BCH-B-15	GaN	Blue	465	Water Clear	3.1	3.4	20	2200	2900	3300	15
503BCH-B-23	GaN	Blue	465	Water Clear	3.1	3.4	20	2200	2900	3300	23
503BCH-B-30	GaN	Blue	465	Water Clear	3.1	3.4	20	2200	2900	3300	30

### Ultra Bright LED Lamp: White

Part No.	Chip			Lens Color	Vf(V)		Luminous Intensity Iv *2				2θ (Deg.)
	Material	Emitting Color	Wavelength λp(nm) *3		Typ.	Max.	at If=mA	Min. (mcd)	Typ. (mcd)	Max. (mcd)	
503WCH-A-15	GaN	White	X=0.28 Y=0.30	Water Clear	3.1	3.4	20	3200	3600	4200	15
503WCH-A-23	GaN	White	X=0.28 Y=0.30	Water Clear	3.1	3.4	20	3200	3600	4200	23
503WCH-B-15	GaN	White	X=0.28 Y=0.30	Water Clear	3.1	3.4	20	4200	5000	5500	15
503WCH-B-23	GaN	White	X=0.28 Y=0.30	Water Clear	3.1	3.4	20	4200	5000	5500	23
503WCH-C-15	GaN	White	X=0.28 Y=0.30	Water Clear	3.1	3.4	20	5500	6500	7200	15
503WCH-C-23	GaN	White	X=0.28 Y=0.30	Water Clear	3.1	3.4	20	5500	6500	7200	23

(\*1) Duty 1/10 Pulse Width 10ms.

(\*2) Guaranteed value what is include tolerance of measurement of Luminous Intensity by Toyoda Gosei's method is ±20%.

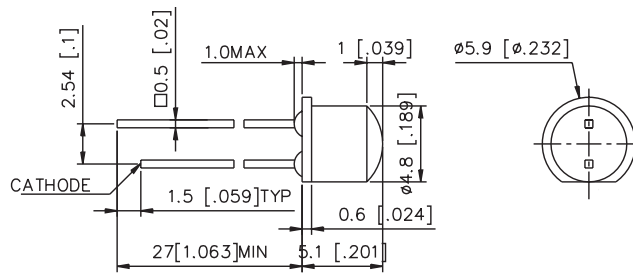
(\*3) Guaranteed Value what is include tolerance of measurement of Dominant wavelength by Toyoda Gosei's method is ±2nm.

## 5H3XCH

- **Emitting Color:** Red, Yellow, Pure Green, or White
- **Chip Material:** AlGaInP, InGaN, or GaN
- **Construction:** Gas Phase Epitaxial
- **Application:** Lighting, LED Bulb
- **Absolute Maximum Ranges** (Ta=25±3°C)

Power Dissipation	P <sub>D</sub>	60mW	
Reverse Current(V <sub>R</sub> =5V)	I <sub>R</sub>	≤10uA	
DC Forward Current	I <sub>F</sub>	30mA	
Pulsed Forward Current	I <sub>FP</sub>	150mA	*1
Reverse Voltage	V <sub>R</sub>	5V	
Operating Temperature	T <sub>opr</sub>	-35~+80°C	
Storage Temperature	T <sub>stg</sub>	-40~+100°C	

### ● Package Dimensions



**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is +/-0.1mm (0.004 inch) unless otherwise specified.
3. The products are sensitive to static electricity.

### Electrical and Optical Characteristics

(Ta=25±3°C)

Part No.	Chip			Lens Color	V <sub>f</sub> (V)		Luminous Intensity I <sub>v</sub> *2				2θ (Deg.)
	Material	Emitting Color	Wavelength λ <sub>p</sub> (nm) *3		Typ.	Max.	at I <sub>f</sub> =mA	Min. (mcd)	Typ. (mcd)	Max. (mcd)	
5H3VCH	AlGaInP	Red	625	Water Clear	1.9	2.1	20	100	200	250	180
5H3YCH	AlGaInP	Yellow	590	Water Clear	1.9	2.1	20	100	200	250	180
5H3PGCH	InGaN	Pure green	520	Water Clear	3.0	3.6	20	300	400	500	180
5H3BCH	GaN	Blue	465	Water Clear	3.0	3.6	20	100	200	300	180
5H3WCH	InGaN	White	X:0.28 Y:0.32	Water Clear	3.0	3.6	20	400	500	600	180

(\*1) Duty 1/10 Pulse Width 10ms.

(\*2) Guaranteed value what is include tolerance of measurement of Luminous Intensity by Toyoda Gosei's method is ±20%.

(\*3) Guaranteed Value what is include tolerance of measurement of Dominant wavelength by Toyoda Gosei's method is ±2nm.