OPTO ELECTRONIC COMPONENTS

LIGITEK

Short Form

SURFACE MOUNT LED LAMPS

SURFACE MOUNT LED LAMPS DESIGNATION SYSTEM

$$\frac{LG}{A} - \frac{170}{B} \quad \frac{DBK}{C} - \frac{C}{D} \quad \frac{T}{E}$$

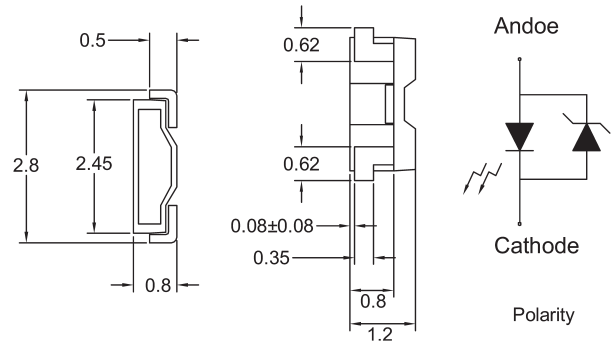
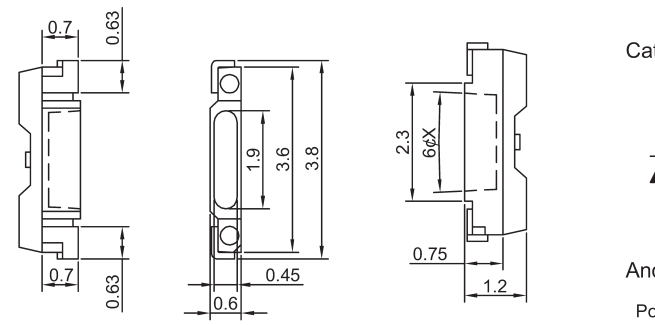
A: Ligitek

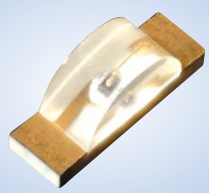
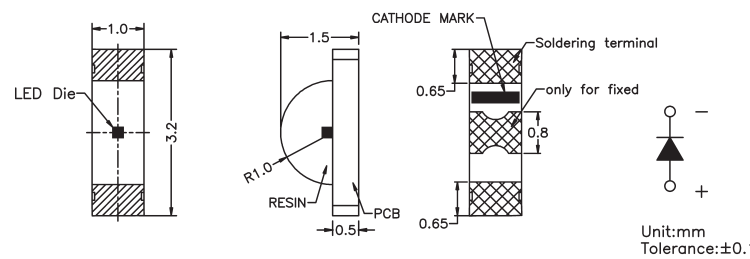
B:	
110	3.2×1.5×1.0
150	3.2×1.6×1.1
170	2.0×1.25×0.8
192	1.6×0.8×0.4

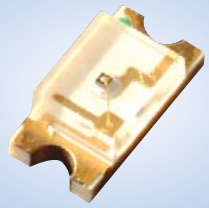
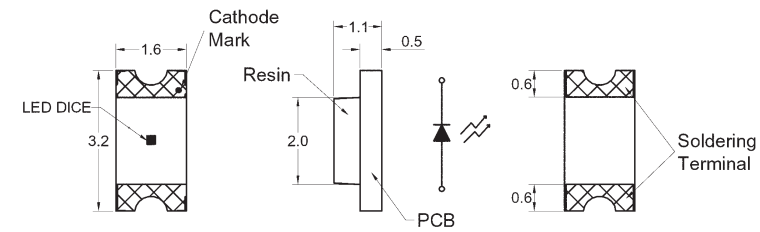
D:	
C = Water Clear	D = White Diffused

E:
T = Tape & Reel

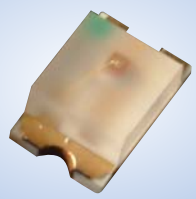
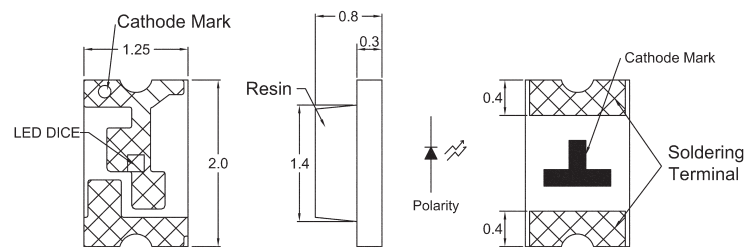
C: Dice Emitting Color & Material	
"SR"	Super Red & GaAlAs 643nm
"HR"	Hi-Super Red & GaAlAs 643nm
"HRF"	Hi-Super Red & AlGaInP 630nm
"HY"	Hi-Super Yellow & AlGaInP 595nm
"VY"	Super Yellow & AlGaInP 590nm
"Y"	Yellow & GaAsP/ GaP 588nm
"9UG"	Ultra Super Green & AlGaInP 574nm
"G"	Green & GaP 573nm
"DGM"	Super Green & InGaN/GaN 525nm
"DGL"	Super Green & InGaN/GaN 505nm
"DBK"	Super Blue & InGaN/GaN 470nm
"WK"	White & InGaN/GaN

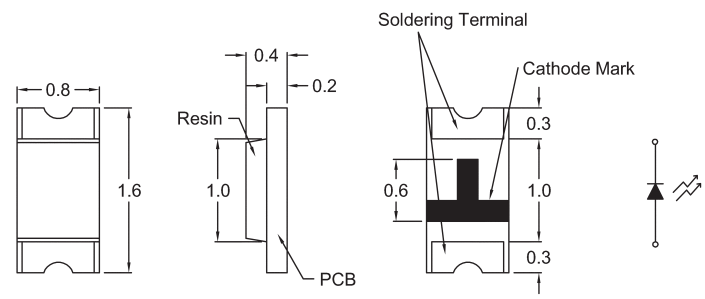
Part No.	Chip			Vf(v) @20mA		Iv(mcd) @20mA	Viewing angle
	Material	Emitted Color	λD(nm)	Typ.	Max.	Typ.	2θ1/2
							
LG-008WKZ-DT	InGaN/GaN	White		3.5		1100	115
							
LG-020WK-DT	InGaN/GaN	White		3.3		1100	110

Part No.	Chip			Vf(v) @20mA		Iv(mcd) @20mA	Viewing angle
	Material	Emitted Color	λD(nm)	Typ.	Max.	Typ.	2θ1/2
							
LG-110SR-CT	GaAlAs	Super Red	643	1.5	2.4	15	150
LG-110HR-CT	GaAlAs	Hi-Super Red	643	1.5	2.4	32	150
LG-110HRF-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	60	110
LG-110G-CT	GaP	Green	573	1.7	2.6	10	150
LG-110-9UG-CT	AlGaInP	Ultra Super Green	574	1.7	2.6	45	120
LG-110Y-CT	GaAsP/GaP	Yellow	588	1.7	2.6	6	150
LG-110VY-CT	AlGaInP	Super Yellow	590	1.7	2.6	60	130
LG-110HY-CT	AlGaInP	Hi-Super Yellow	595	1.7	2.6	80	140
LG-110DBK-CT	InGaN/GaN	Super Blue	470		4.0	60	130
LG-110WK-DT	InGaN/GaN	White			4.0	150	178

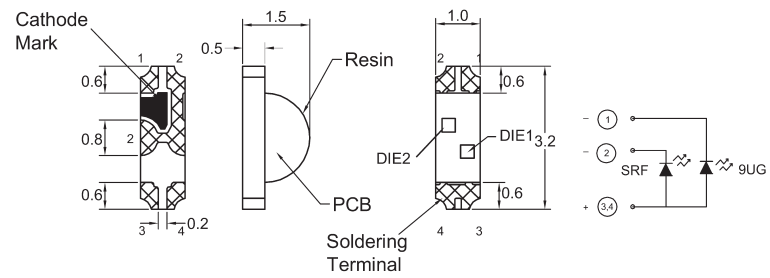
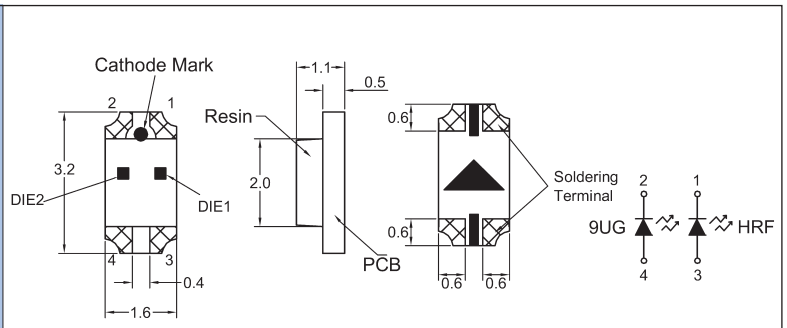
							
LG-150SR-CT	GaAlAs	Super Red	643	1.5	2.4	25	140
LG-150HR-CT	GaAlAs	Hi-Super Red	643	1.5	2.4	40	140
LG-150HRF-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	80	140
LG-150G-CT	GaP	Green	573	1.7	2.6	12.5	140
LG-150-9UG-CT	AlGaInP	Ultra Super Green	574	1.7	2.6	40	140
LG-150Y-CT	GaAsP/GaP	Yellow	588	1.7	2.6	6	150
LG-150VY-CT	AlGaInP	Super Yellow	590	1.7	2.6	60	130
LG-150HY-CT	AlGaInP	Hi-Super Yellow	595	1.7	2.6	80	140
LG-150DBK-CT	InGaN/GaN	Super Blue	470		4.0	40	150
LG-150WK-CT	InGaN/GaN	White			4.0	320	160

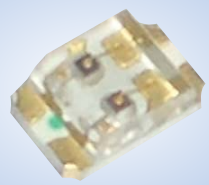
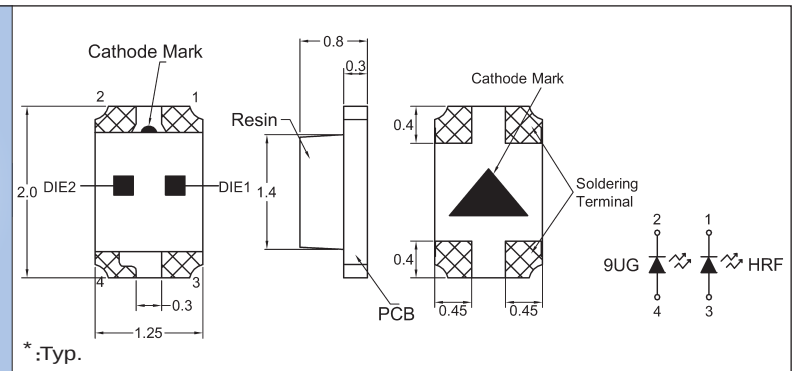
SURFACE MOUNT LED LAMPS

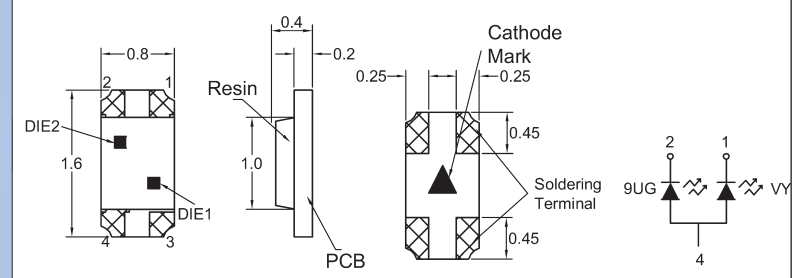
Part No.	Chip			Vf(v) @20mA		Iv(mcd) @20mA	Viewing angle
	Material	Emitted Color	λD(nm)	Typ.	Max.	Typ.	2θ1/2
							
LG-170SR-CT	GaAlAs	Super Red	643	1.5	2.4	20	140
LG-170HR-CT	GaAlAs	Hi-Super Red	643	1.5	2.4	32	140
LG-170HRF-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	80	130
LG-170G-CT	GaP	Green	573	1.7	2.6	10	160
LG-170-9UG-CT	AlGaInP	Ultra Super Green	574	1.7	2.6	45	130
LG-170Y-CT	GaAsP/GaP	Yellow	588	1.7	2.6	8	150
LG-170VY-CT	AlGaInP	Super Yellow	590	1.7	2.6	60	130
LG-170HY-CT	AlGaInP	Hi-Super Yellow	595	1.7	2.6	100	140
LG-170DBK-CT	InGaN/GaN	Super Blue	470		4.0	50	140
LG-170WK-DT	InGaN/GaN	White			4.0	200	150

							
LG-192SRF-CT	AlGaInP	Super Red	630	1.5	2.4	50	110
LG-192HRF-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	80	110
LG-192-9UG-CT	AlGaInP	Ultra Super Green	574	1.7	2.6	32	120
LG-192VY-CT	AlGaInP	Super Yellow	590	1.7	2.6	60	110
LG-192HY-CT	AlGaInP	Hi-Super Yellow	595	1.7	2.6	100	140
LG-192DBK-CT	InGaN/GaN	Super Blue	470		4.0	50	120
LG-192DGL-CT	InGaN/GaN	Super Green	505		4.2	80	140
LG-192DGM-CT	InGaN	Super Green	525		4.0	100	140
LG-192WK-DT	InGaN/GaN	White			4.0	100	140

Bi-COLOR

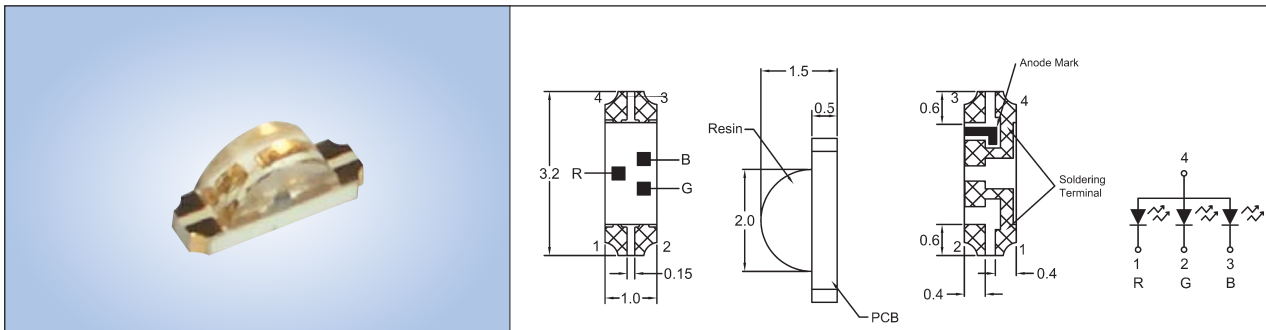
Part No.	Chip			Vf(v) @20mA		Iv(mcd) @20mA	Viewing angle
	Material	Emitted Color	λD(nm)	Typ.	Max.	Typ.	2θ1/2
							
LG-110HRF/9UG-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	70	120
	AlGaInP	Ultra Super Green	574	1.7	2.6	40	120
LG-110HRF/DBK-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	70	120
	InGaN/GaN	Super Blue	470		4.0	50	120
							
LG-150HRF/9UG-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	60	140
	AlGaInP	Ultra Super Green	574	1.7	2.6	25	140
LG-110SRF/DBK-CT	AlGaInP	Super Red	630	1.5	2.4	40	140
	InGaN/GaN	Super Blue	470		4.0	60	140

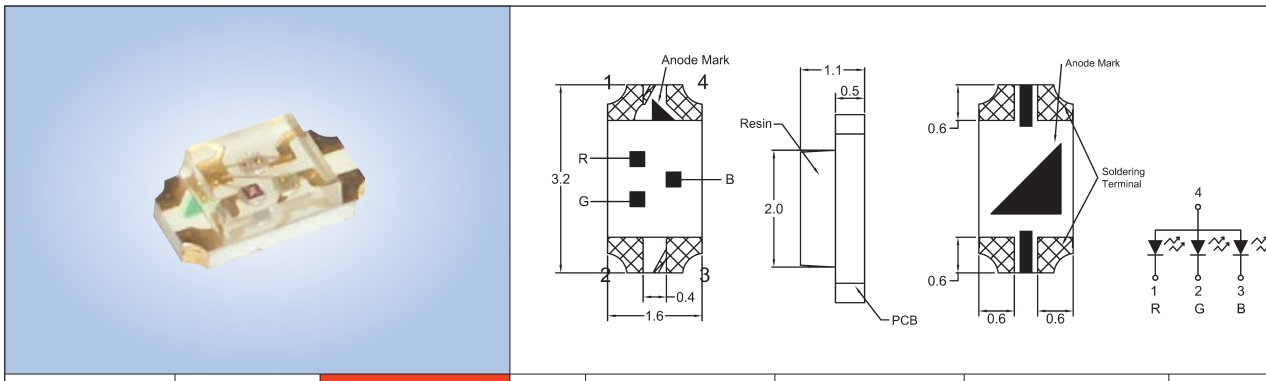
Part No.	Chip			Vf(v) @20mA		Iv(mcd) @20mA	Viewing angle
	Material	Emitted Color	λD(nm)	Typ.	Max.	Typ.	2θ1/2
		 *:Typ.					
LG-170HRF/9UG-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	60	130
	AlGaInP	Ultra Super Green	574	1.7	2.6	50	130
LG-170HRF/DBK-CT	AlGaInP	Hi-Super Red	630	1.5	2.4	60	130
	InGaN/GaN	Super Blue	470		4.0	60	130

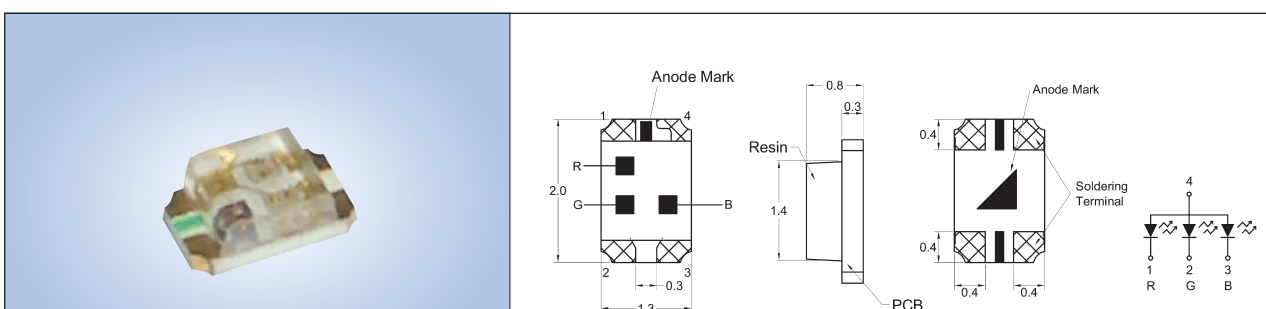
		 *:Typ.					
LG-192VY/9UG-CT	AlGaInP	Super Yellow	590	1.7	2.6	50	130
	AlGaInP	Super Green	574	1.7	2.6	20	130
LG-192DBK/HRF-CT	InGaN/GaN	Super Blue	470		4.0	32	130
	AlGaInP	Hi-Super Red	630	1.5	2.4	50	130

FULL-COLOR

Part No.	Chip			Vf(v) @20mA		Iv(mcd) @20mA	Viewing angle
	Material	Emitted Color	λD(nm)	Typ.	Max.	Typ.	2θ1/2
LG-110RGB-CT	AlGaInP	Red	630	1.5	2.4	100	120
	InGaN	Green	525		4.0	250	120
	InGaN/ GaN	Blue	470		4.0	50	120
LG-150RGB-CT	AlGaInP	Red	630	1.5	2.4	100	140
	InGaN	Green	525		4.0	250	140
	InGaN/ GaN	Blue	470		4.0	60	140
LG-170RGB-CT	AlGaInP	Red	630	1.5	2.4	100	130
	InGaN	Green	525		4.0	250	130
	InGaN/ GaN	Blue	470		4.0	80	130

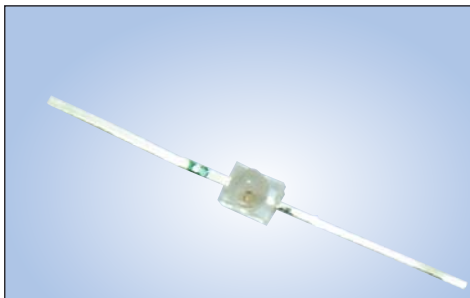


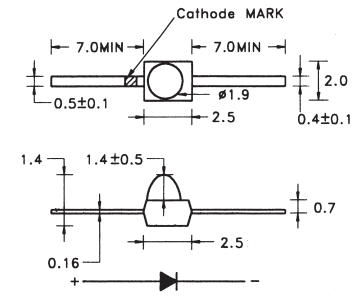




AXIAL LED LAMPS

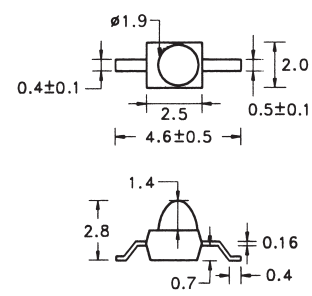
Part No.	Chip			Lens Color	Vf(v) @20mA		Iv(mcd) @20mA		Viewing angle
	Material	Emitted Color	λD(nm)		Min.	Max.	Min.	Typ.	2θ1/2
LDBK9033	InGaN/GaN	Super Blue	470	Water Clear		4.0	160	300	20
LUY9033	AlGaInP	Ultra Yellow	595	Water Clear	1.7	2.6	550	900	20
LVG9033	GaP*	Hi-Effi.Green	565	Water Clear	1.7	2.6	65	100	20
LSRF9033	AlGaInP	Super Red	630	Water Clear	1.5	2.4	100	180	20
LHRF9033	AlGaInP	Hi-Super Red	630	Water Clear	1.5	2.4	190	330	20





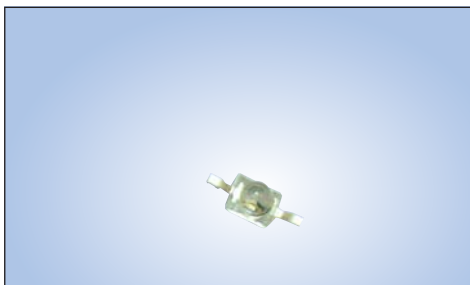
"Axial"

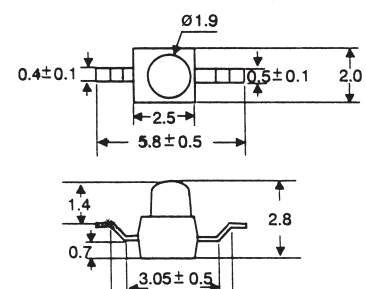
LDBK9033/TR1	InGaN/GaN	Super Blue	470	Water Clear		4.0	160	300	20
LVG9033/TR1	GaP*	Hi-Effi.Green	565	Water Clear	1.7	2.6	65	100	20
LSRF9033/TR1	AlGaInP	Super Red	630	Water Clear	1.5	2.4	100	180	20
LHRF9033/TR1	AlGaInP	Hi-Super Red	630	Water Clear	1.5	2.4	190	330	20
LURF9033/TR1	AlGaInP	Ultra Super Red	630	Water Clear	1.5	2.4	390	650	20
LHY9033/TR1	AlGaInP	Hi-Super Yellow	595	Water Clear	1.7	2.6	160	260	20
LUY9033/TR1	AlGaInP	Ultra Yellow	595	Water Clear	1.7	2.6	550	900	20
LUG9033/TR1	AlGaInP	Ultra Super Green	574	Water Clear	1.7	2.6	220	350	20



"Gull-wingl"

LDBK9033/TR1	InGaN/GaN	Super Blue	470	Water Clear		4.0	160	300	20
LVG9033/TR1	GaP*	Hi-Effi.Green	565	Water Clear	1.7	2.6	65	100	20
LSRF9033/TR1	AlGaInP	Super Red	630	Water Clear	1.5	2.4	100	180	20
LHRF9033/TR1	AlGaInP	Hi-Super Red	630	Water Clear	1.5	2.4	190	330	20
LURF9033/TR1	AlGaInP	Ultra Super Red	630	Water Clear	1.5	2.4	390	650	20
LHY9033/TR1	AlGaInP	Hi-Super Yellow	595	Water Clear	1.7	2.6	160	260	20
LUY9033/TR1	AlGaInP	Ultra Yellow	595	Water Clear	1.7	2.6	550	900	20
LUG9033/TR1	AlGaInP	Ultra Super Green	574	Water Clear	1.7	2.6	220	350	20





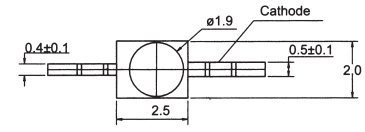
"Z-bend"

LSR9033/TR2	GaAlAs	Super Red	660	Water Clear	1.5	2.4	90*	180	20
LHRF9033/TR2	AlGaInP	Hi-Super Red	630	Water Clear	1.5	2.4	160	300	20
LUR9033/TR2	GaAlAs	Ultra Super Red	660	Water Clear	1.5	2.4	350	650	20
LVG9033/TR2	GaP*	Hi-Effi.Green	565	Water Clear	1.7	2.6	65	100	20
LVY9033/TR2	AlGaInP	Super Yellow	590	Water Clear	1.7	2.6	220	450	20
LSBK9033/TR2	InGaN/SiC	Super Blue	468	Water Clear		4.2	120	220	20

*: λp(nm)

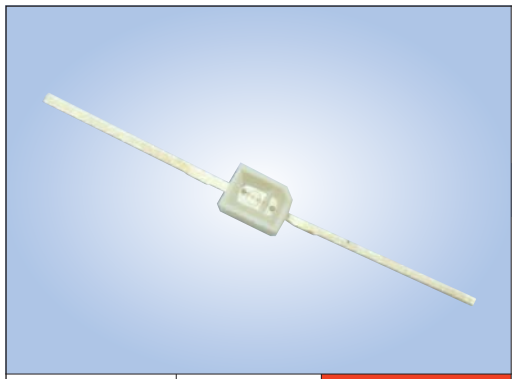
AXIAL LED LAMPS

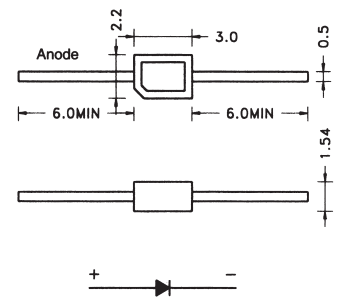
Part No.	Chip			Lens Color	Vf(v) @20mA		Iv(mcd) @20mA		Viewing angle
	Material	Emitted Color	λD(nm)		Min.	Max.	Min.	Typ.	2θ1/2
LSR9033/TR3	GaAlAs*	Super Red	660	Water Clear	1.5	2.4	90	180	20
LHR9033/TR3	GaAlAs*	Hi-Super Red	660	Water Clear	1.5	2.4	220	330	20
LURF9033/TR3	AlGaInP	Ultra Super Red	630	Water Clear	1.5	2.4	350	650	20
LVG9033/TR3	GaP*	Hi-Effi.Green	565	Water Clear	1.7	2.6	65	100	20
LVY9033/TR3	AlGaInP	Super Yellow	590	Water Clear	1.7	2.6	220	450	20
LSBK9033/TR3	InGaN/SiC	Super Blue	468	Water Clear		4.2	120	220	20



"Yoke"

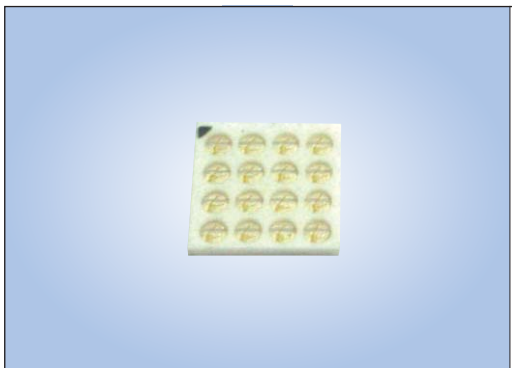
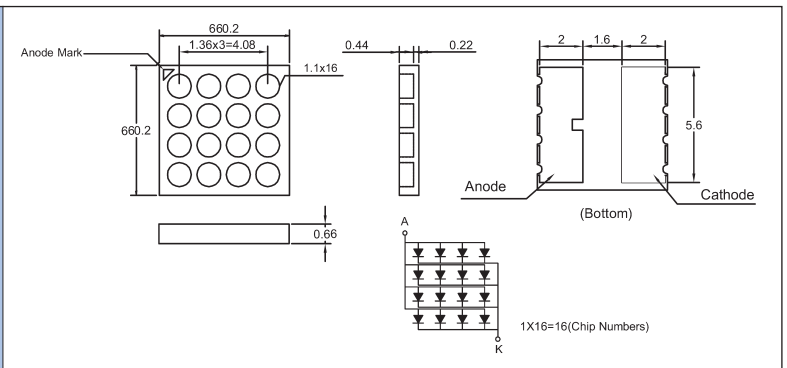
LSRF9353	AlGaInP	Super Red	630	Water Clear	1.5	2.4	120	220	84
LHRF9353	AlGaInP	Hi-Super Red	630	Water Clear	1.5	2.4	160	300	84
LVY9353	AlGaInP	Super Yellow	590	Water Clear	1.7	2.6	24	40	84
LVG9353	GaP*	Hi-Effi.Green	565	Water Clear	1.7	2.6	12	20	84
LWK9353	InGaN/GaN	White		Water Clear		4.0	90	160	100





*: λp(nm)

SURFACE MOUNT LED WITH CERAMIC

Part No.	Chip			Forward voltage @320mA(V)			Luminous Flux @320mA(lm)	Luminous intensity @320mA(cd)	Viewing angle
	Material	Emitted Color	λD(nm)	Min.	Typ.	Max.	Typ.	Typ.	2θ1/2
									
LDBK9D53C16	InGaN/GaN	Blue	470	3.0	3.5	4.0	10.7	4.2	120
LDGM9D53C16	InGaN/GaN	Green	525	3.0	3.5	4.0	36	14.5	120
LUR9D53HC16	AlGaInP	Red	630	1.7	2.1	2.6	11.5	4.6	120
LUY9D53HC16	AlGaInP/GaP	Yellow	590	1.7	2.1	2.6	16	6.2	120
LWK9D53C16	InGaN/GaN	White		3.0	3.5	4.0	32	12.5	120

SIDE LED LAMPS

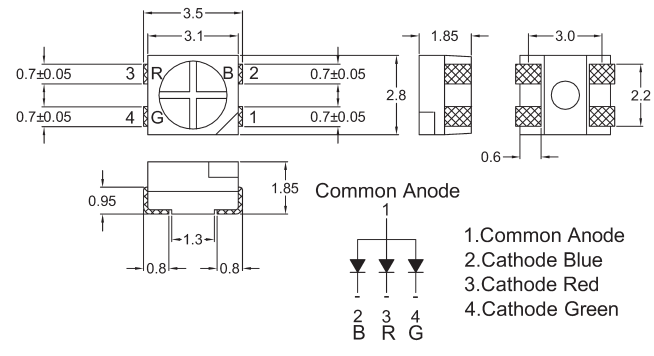
Part No.	Chip			Lens Color	Vf(v) @20mA		Iv(mcd) @20mA		Viewing angle
	Material	Emitted Color	λp(nm)		Min.	Max.	Min.	Typ.	2θ1/2
LUG9253-1M	AlGaInP*	Urtra Super Green	574	Water Clear	3.4	5.2	50	120	100
LY9253-1M	GaAsP/GaP	Yellow	585	Water Clear	3.4	5.2	10	15	100
LVG9253-1M	GaP	Hi-Effi.Green	565	Water Clear	3.4	5.2	28*	40*	100
LHR9253-1M	GaAlAs	Hi-Super Red	660	Water Clear	3.0	4.8	20*	32*	100
LDBK9253-1M	InGaN/GaN*	Super Blue	470	Water Clear		8.0	50	120	100
LVG9753	GaP	Hi-Effi.Green	565	Water Clear	3.4	5.2	38*	70*	60
LDBK9753	InGaN/GaN*	Super Blue	470	Water Clear		8.0	50	90	60
LVG9753-1	GaP	Hi-Effi.Green	565	Water Clear	1.7	2.6	21*	35*	60
LHR9753-1	GaAlAs	Hi-Super Red	660	Water Clear	1.5	2.4	28*	50*	60
LSRF9753-1	AlGaInP*	Super Red	630	Water Clear	1.5	2.4	15*	27*	60

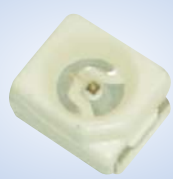
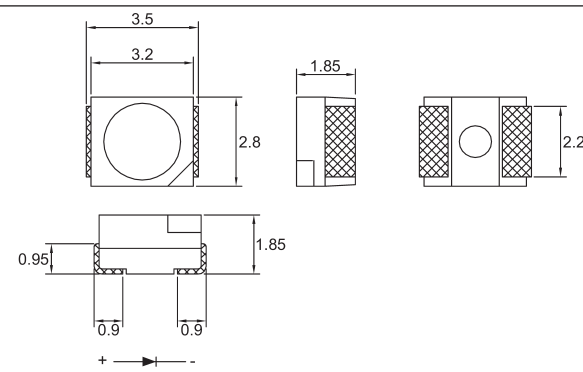
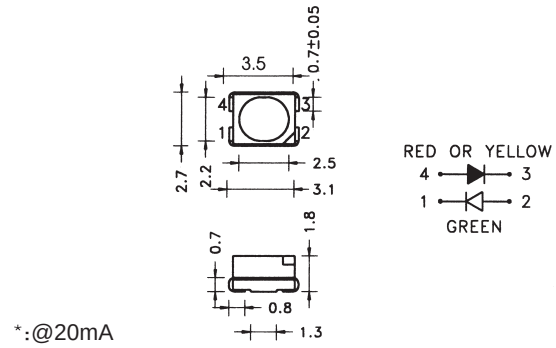
*:@20mA

*: λD(nm)

PLCC TYPE LED LAMPS

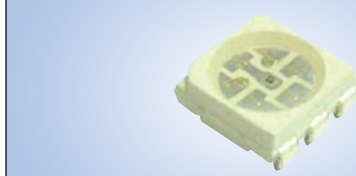
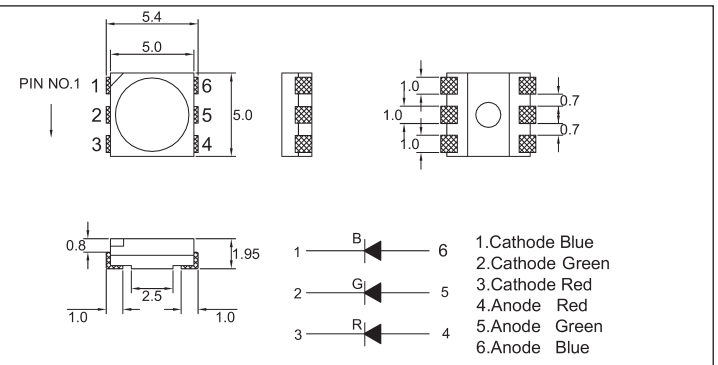
Part No.	Chip			Lens Color	Vf(v) @20mA		Iv(mcd) @20mA		Viewing angle
	Material	Emitted Color	λD(nm)		Min.	Max.	Min.	Typ.	2θ1/2
LRGB9553-EW/TR1	AlGaInP	Orange	605	Water Clear	1.7	2.6	220	450	120
	InGaN/GaN	Green	505	Water Clear	—	4.2	160	350	120
	InGaN/GaN	Blue	470	Water Clear	—	4.0	90	160	120

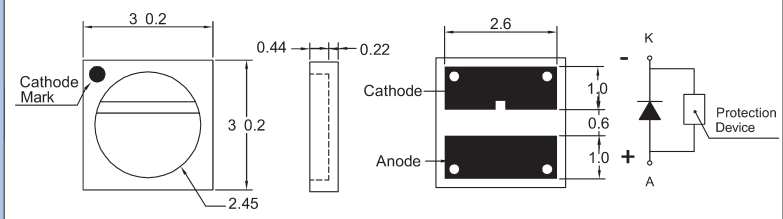


Part No.	Chip			Lens Color	Vf(v) @20mA		Iv(mcd) @20mA		Viewing angle
	Material	Emitted Color	λD(nm)		Min.	Max.	Min.	Typ.	2θ1/2
									
LHRF9553/TR1	AlGaInP	Hi-Super Red	630	Water Clear	1.5	2.4	65	120	120
LVG9553/TR1	Gap*	Hi-Effi.Green	565	Water Clear	1.7	2.6	12.5	32	120
LUY9553/TR1	AlGaInP	Ultra Yellow	595	Water Clear	1.7	2.6	160	350	120
LDBK9553/TR1	InGaN/GaN	Super Blue	470	Water Clear		4.0	80	160	120
LWK9553/TR1	InGaN/GaN	White		Water Clear		4.0	200	500	120
				 *:@20mA *: λD(nm)					
LSEFDGL9553/TR1	AlGaInP	Super Orange	605	Water Clear	1.7	2.6	200	500	120
	InGaN/GaN	Super Green	505	Water Clear		4.0	125	280	120
LHRFVG9553/TR1	AlGaInP	Hi-Super Red	630	Water Clear	1.5	2.4	80	200	120
	GaP*	Hi-Effi.Green	565	Water Clear	1.7	2.6	20	44	120

*: λp(nm)

PLCC TYPE LED LAMPS

Part No.	Chip			Lens Color	Vf(v) @20mA		Iv(mcd) @20mA		Viewing angle
	Material	Emitted Color	λD(nm)		Min.	Max.	Min.	Typ.	2θ1/2
									
LRGB9Q53/TR1	AlGaInP	Red	630	Water Clear	1.5	2.4	90	160	120
	InGaN/GaN	Green	525	Water Clear		4.0	220	400	120
	InGaN/GaN	Blue	470	Water Clear		4.0	90	160	120
LRGB9Q53/R1/TR1-J	AlGaInP	Red	630	Water Clear	1.5	2.4	80	200	120
	InGaN/GaN	Green	525	Water Clear		4.0	125	320	120
	InGaN/GaN	Blue	470	Water Clear		4.0	80	200	120

					 *:@150mA				
LDGM9F53C	InGaN/GaN	Super Green	525	Green Transparent	3.0*	4.0*		6.5cd*	130
LDBK9F53C	InGaN/GaN	Super Blue	470	Blue Transparent	3.0*	4.0*		1.5cd*	130
LWK9F53C	InGaN/GaN	White		Water Clear	3.0*	4.0*		7cd*	130

BIN GRADING SYSTEM

Brightness Code For Invisible SMD

Group	Radiant Intensity(mw/sr) at 20mA	
	MIN	MAX
A	0.1	0.13
B	0.13	0.17
C	0.17	0.22
D	0.22	0.29
E	0.29	0.38
F	0.38	0.5
G	0.5	0.65
H	0.65	0.85
J	0.85	1.1
K	1.1	1.4
L	1.4	1.8
M	1.8	2.4

Group	Radiant Intensity(mw/sr) at 20mA	
	MIN	MAX
N	2.4	3.2
P	3.2	4.2
Q	4.2	5.5
R	5.5	7.2
S	7.2	9.4
T	9.4	12
U	12	16
V	16	21
W	21	28
X	28	37
Y	37	50

Brightness Code For Visible SMD

Group	(mcd) at 20mA	
	MIN	MAX
A	0.1	0.2
B	0.2	0.32
C	0.32	0.5
D	0.5	0.8
E	0.8	1.25
F	1.25	2
G	2	3.2
H	3.2	5
J	5	8
K	8	12.5
L	12.5	20
M	20	32

Group	(mcd) at 20mA	
	MIN	MAX
N	32	50
P	50	80
Q	80	125
R	125	200
S	200	320
T	320	500
U	500	800
V	800	1250
W	1250	2000
X	2000	3200
Y	3200	5000

Brightness Code For Phototransistor SMD

Group	Ion-pd(mA) at 1mw/cm^2	
	MIN	MAX
I1	0.25	0.5
I2	0.5	0.9
I3	0.9	1.3
I4	1.3	1.5
I5	1.5	2
I6	2	2.5
I7	2.5	3.2
I8	3.2	4